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SOUTH AFRICA: TERTIARY EDUCATION SECTOR ASSESSMENT

**Produced for the U.S. Agency for International Development
Under the Auspices of the**

Academy for Educational Development

**William Stuart, Team Leader
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EXECUTIVE SUMMARY

This summary begins with an introduction to the Tertiary Education Sector Assessment. It is followed by the findings and recommendations for the tertiary education sector as a whole and the findings and recommendations of each of the four subsectors. It concludes with recommendations for high priority initiatives for consideration by potential donors.

I. INTRODUCTION

This report presents the results of an evaluation study of tertiary education in South Africa conducted in-country by a team of South African and international educators from October to December, 1991. Commissioned by the United States Agency for International Development (USAID), the Tertiary Education Sector Assessment (TESA) was intended to describe and analyze the challenges facing universities, colleges of education, and technical training institutions in the new South Africa. The fundamental premise of this study is that a nonracial gender-equal system of higher education is essential to a democratic society. In addition to contributing to the discussion of education reform now ongoing in South Africa, the TESA report is meant to lay the groundwork for the provision of technical and budgetary assistance by USAID and other donors. Efforts which are tied to the three goals of eradicating apartheid, advancing national development, and maintaining educational quality should have the highest priority.

II. THE TERTIARY EDUCATION SECTOR

1. Overview

South Africa's tertiary education sector consists of four distinct levels or subsectors: universities (numbering 21 in all), technikons (15), technical colleges (137), and colleges of education (101). Universities offer liberal arts and professional programs from the undergraduate through the doctoral levels. Technikons offer nondegree level tertiary education, largely in technical fields. Technical colleges provide vocational and occupational training for students at both secondary and postsecondary levels. Colleges of education train teachers through three- or four-year diploma offerings. Technikons and universities also provide teacher education.

2. Findings

Government oversight. Starting with the Bantu Education Act of 1953 and the Extension of University Education Act of 1959, all schooling in South Africa has been officially divided along racial/ethnic lines. Africans were systematically excluded from high-quality academic education and technical training, and black schools were placed under racially separate ministerial control. As a result, there are presently 15 different ministries of education: for Whites, Asians, Coloureds, Africans, and for the self-governing and independent states. Whereas universities and technikons have considerable autonomy, technical colleges and colleges of education are strictly controlled by their respective ministries.

Enrollments. Women students are unequally represented in all tertiary institutions except colleges of education. The access, retention, output, and quality of black graduates are major challenges. Africans and other people of color have been educationally disadvantaged for decades, and they are particularly under-represented in science, engineering, technology, and advanced degree programs generally. Barriers to increased African enrollments include the low quality of African teacher education and rising student fees.

Faculty and administration. Sector-wide inequities in staffing and leadership must also be addressed, as well as the unequal distribution of resources to the historically black institutions. Curricula fail to reflect the tradition and experience of all South African citizens. The administration of technical and teacher education colleges and the composition of university councils are undemocratic. There is little lateral flow of information among institutions.

Finance. During the past five years, the national education budget has increased from R5 billion to R12 billion, partly in response to the crisis in black education. But much of the increase has been used to keep pace with inflation and declining exchange rates, and a substantial proportion of the total budget has gone to the school sector. In fact the proportion of the budget dedicated to tertiary education declined from 22.2 percent in 1985 to 19.5 percent in 1990, placing South Africa below many middle-income countries. This has resulted in reductions in the number of grants available to disadvantaged students and deep cuts in the government's subsidies of higher education institutions.

Future levels of government spending on tertiary education will depend on the overall economic health of the country. The government cannot realistically be expected to devote a higher percentage of its education budget to the tertiary sector. A modest increase of the higher education budget may be anticipated

as long as the country's average annual economic growth rate reaches 3 percent per annum. If the growth rate continues at the 1985-90 levels of less than 1 percent, the outlook becomes extremely gloomy.

Funding inequities are critical in the meantime. The education of Africans is drastically underfunded. The subsidy formula's criteria have been used to channel more funds to predominantly white institutions at the expense of their black counterparts. Because the formula does not reward growth or support academic development programs, it discriminates against the growth institutions, which are largely black. Government financing of technical and teacher training colleges has also been skewed by the segregation of races in these institutions.

Cost effectiveness. The segregation and duplication of institutions and programs have led to overall inefficiency in the use of resources. Growth rates at the historically white institutions are disproportionately low given the greatly expanded pool of (largely African) candidates, and certain programs are particularly cost ineffective. Colleges of education have inflated staffs: the same number of students could be taught by half the existing lecturers. At the historically black institutions as well as at UNISA, the combination of inadequate academic preparation, underqualified staff, and inferior facilities has produced high failure and drop-out rates and thus internal inefficiency. This situation is especially troubling given the country's widespread skills shortages and the underdevelopment of high-level African manpower.

Articulation and rationalization. South Africa's fragmented tertiary education sector is badly in need of articulation and rationalization. It is almost impossible for students to move from technical colleges to technikons or from technikons to universities. Institutions and programs need to be rationalized to eliminate duplication and inefficiency, but without reducing the number of higher education opportunities available to students of all races and both sexes. A unitary education system under a single ministry is an urgent priority.

Planning. Education planning in South Africa is currently splintered among statutory and nonstatutory planning bodies and such organizations as the ANC, PAC, and the Urban Foundation. It is clear that even the most minimal program of reform will include the removal of restraints on African enrollment at any institution, expanded financial support for African students, and the increased recruitment of African faculty and administrators. Innovation is proceeding within a number of exemplary institutions and programs; these positive accomplishments need to be extended to the sector as a whole.

3. Recommendations

- Unify the entire educational sector under a single ministry of education with two broad divisions: one for schools and the other for higher education. This ministry would share authority with an education council including representatives from at least four regional boards of education.
- Establish a system of community colleges to provide remedial work in math and science, offer postsecondary vocational programs, function as adult education institutes, prepare students for upper-level university study, and help underprepared students gain access to tertiary programs.
- Reorganize the tertiary education subsectors, possibly by transferring the administration of colleges of education to the universities and technikons or by establishing a three-tiered system composed of national universities, regional universities (combining the function of technikons and colleges of education), and community colleges.
- Promote the enrollment and academic success of black students through new recruitment and selection procedures and through academic support programs.
- Reduce subsidies to the white institutions to make more funding available to the historically black colleges and to create more grants and loans for needy students. Revise the subsidy formula to favor increased enrollment of socioeconomically disadvantaged students and to reward academic success rates and enrollment in science and technology courses.
- Establish a differential student fee schedule based on parental income.
- Establish a national loan program, a nationwide system of grants for the neediest students, and a national merit scholarship program.
- Diversify higher education funding sources to include education taxes, state lotteries, and community financing.
- Establish a planning commission to assess the cost effectiveness of institutions and programs and advise the government on funding distribution.
- Set up an education bank to coordinate and administer grant and loan funds received from the government, the private sector, and foreign sources.

III. THE TERTIARY EDUCATION SUBSECTORS

1. Universities

a. Overview

South Africa has 21 universities, 4 of them historically white and English speaking, 5 white and Afrikaans, 7 historically segregated "ethnic" black institutions, 3 newer homeland universities, and 2 bilingual institutions: the University of South Africa (UNISA) and the University of Port Elizabeth.

b. Findings

Enrollments. In 1990, 302,000 students were enrolled in universities, representing two-thirds of the enrollment of the entire tertiary sector. Half of these university students were white; one third, African. Over 130,000 of them were involved in part-time distance education at UNISA and VISTA University. The total number of students enrolled in higher education is in line with international figures for higher education enrollment. But whereas there were 30.9 white university students per 1,000 of population in 1989, there were 2.6 Africans. This is despite the rapid increase in African enrollments over the past decade.

In 1990, only 16 percent of the 44,632 full-time African university students were enrolled in historically white universities. The African student population is expected to double in the next 10 years. Even if the English-medium universities begin to admit more Africans, the black universities will have to double in size by 2001 to accommodate the influx.

Barriers to African enrollments. Despite the increasing demand by Africans for higher education, there remain significant barriers to their participation, including inadequate prior academic preparation, restrictive admissions policies, inequities in institutional funding, rising student fees, lack of financial aid, lack of campus housing, and the resistance of white students. Bantu Education has left many Africans unprepared for advanced academic work; in 1990 their pass rate on the Standard Ten exams was 36 percent (8 percent with matric exemption) compared to 96 percent for Whites. Strict admission policies at a number of white institutions effectively limit the number of African enrollments, and of the few who are admitted, many subsequently fail and withdraw. This high failure rate disqualifies institutions who admit large numbers of Africans from commensurate increases in government subsidies. Africans are also particularly hard hit by

fee increases of 15 to 20 percent per year coupled with decreases in scholarship funding and shortages of student housing. Finally, white students resent what they regard as preferential treatment of Africans, including the perception of watering down of academic standards to accommodate them. Academic assistance programs offer one solution to such problems, but their cost is high, and the government will not fund them.

Faculty and administration. Africans are also dramatically under-represented among university faculty members and administrators. Even at the historically black universities, they tend to be outranked by white staff and to be underqualified in terms of degrees. Redress will not be easy. Tenured white staff cannot easily be dismissed, funding is not forthcoming for new positions, and the pool of qualified African candidates is small. Gender imbalances among faculty and administration are somewhat less pronounced but still a significant problem.

Historically black institutions. Black institutions as well as individuals are subject to inequity. The historically black universities have far fewer resources than their white counterparts. Their staff-student ratios are much higher. Their faculty is comparatively underqualified. Their libraries are smaller, their labs are underequipped, and their residential accommodation is in short supply. Their governance and curricula are only now recovering from Bantu Education policies and beginning to be Africanized.

Meeting manpower needs. Given the country's need for qualified manpower, the great potential of the African population needs to be developed. Africans are particularly excluded from such professional fields as engineering, natural and physical sciences, business, computer technology, and the health sciences. Bantu Education has left many of them without the necessary skills for such study, and the black institutions themselves offer few courses in these fields. In all of South Africa in 1987, fewer than 2 percent of the 1,544 engineering graduates were Africans; at Unibo in 1989, there were just 3 degree recipients in science out of a graduating class of 2,217. Research programs are well established in some of the historically white universities, although here too there are significant weaknesses in certain scientific and technological fields. The black institutions have their areas of expertise, but these will have to be greatly expanded to meet the country's future needs.

Finance. Black institutions have been particularly hard hit by the decline in higher education spending. Their subsidy levels have been frozen despite their mushrooming enrollments. Without the alternative funding sources of the white institutions (including private gifts and government grants and contracts), they have been forced to raise their fees dramatically, thus passing on the burden of government spending cuts to those who can least support them.

In general, too, these institutions are less cost effective than their white counterparts because their academic programs are small and new and their unit costs are correspondingly high.

Rationalization. Apartheid has led to considerable duplication of higher education institutions and programs, particularly in urban areas. There are no national standards for university admission or accreditation. The Committee of University Principals is the main vehicle for coordination and planning; in 1987 it produced a report with specific recommendations for rationalization of the tertiary sector. Some progress has been made, but it seems unlikely that sector-wide rationalization will ever be worked out through institutional consensus.

c. Recommendations

- Develop a single national matriculation or entrance examination as a reliable basis for affirmative action policies and scholarships.
- Develop extensive academic support programs and make them a crucial element in the government subsidy formula. Reward institutions enrolling large numbers of disadvantaged students.
- Create more faculty positions throughout the subsector.
- Establish an affirmative action program to recruit African faculty. Expand the candidate pool through scholarships for postgraduate study and inducements to attract expatriate scholars back to South Africa.
- Provide financial support and study leaves to help existing faculty at the historically black universities (HBU's) earn Ph.D. degrees.
- Establish massive instructional development programs at the HBU's, including exchange visits with foreign universities.
- Upgrade libraries, student residences, and lab facilities at the HBU's.
- Help the HBU's develop their fundraising capability.
- Set up dual degree and transfer programs to give Africans access to the broader range of science and professional training available at the historically white universities.
- Expand professional degree programs at the HBU's.

- Transfer to the universities many of the applied research programs now owned by state-controlled research councils.
- Establish cooperative research initiatives with universities in other parts of Africa and throughout the world.
- Establish a differentiated funding model for universities whereby they receive a lesser or greater percentage of their operating and capital funding from the state and retain more or less autonomy as a consequence.
- Make greater use of long-term debt financing (e.g., 20-30 year bonds) for major capital projects.
- Establish an external body to evaluate and regularize the quality of instruction and academic evaluation at universities throughout the country.
- Establish a program of accreditation to help set minimum goals and ensure uniform standards of performance and evaluation.

2. Technical education

a. Technikons

i. Overview

Admission to one of South Africa's 15 technikons requires a senior certificate. Geared towards the needs of a specific profession or industry, technikon programs last from three to six years.

ii. Findings

Enrollments. Sixty-four percent of the 84,364 technikon students registered in 1990 were white; in 1989, 67 percent of the students were male. In 1989 there were 10 white students and .2 Africans studying at technikons for each 1,000 of their respective populations. Africans comprise 5 percent of the student body at the 7 historically white institutions. Technikon enrollment is growing at an annual rate of 17 percent. African enrollments are increasing more rapidly, but the number of students involved is tiny. Academic support programs have been established at a number of institutions to help academically disadvantaged students.

Faculty and administration. Technikon staffing and governance are also imbalanced. In 1991 Africans comprised 3.3 percent of all faculty, and women comprised 33 percent. In 1990 only two of the historically white technikons even had Blacks on their staffs. Power in the technikons is concentrated in the rectors' offices, whose composition in 1990 was 86 percent white. Faculty are generally underqualified throughout the subsector.

Meeting manpower needs. Because job opportunities in technical areas have been shrinking with the general economic decline, 62 percent of students major in humanities, only 24 percent in science, and only 14 percent in engineering. More science and technology graduates will be required

Historically black institutions. The predominantly African technikons will have to be upgraded. Their courses are fewer, less advanced, and less specialized, their physical facilities are inferior, and they are underfunded compared to the historically white institutions.

Finance. Since Africans generally cannot afford the high fees charged at the white technikons, the predominantly black institutions are bearing the brunt of increasing enrollments. But, given the reduction of government subsidies, they too are being forced to raise their fees.

Cost effectiveness. Differences in cost effectiveness between historically black and white institutions are less dramatic than they are in the university subsector. But in general technikons are not being fully utilized, courses are unnecessarily duplicated, and staffing levels are inflated.

b. Technical colleges

i. Overview

Technical colleges provide six levels of secondary and tertiary training in commercial and industrial subjects. The minimum admission requirement is a Standard 7 certificate.

ii. Findings

Enrollments. Seventy-six percent of the 72,000 technical college students enrolled in 1990 were studying at the secondary level. Only 2 percent of the students enrolled in the 69 historically white colleges were black. Excluding the TBVC, overall there were 10 white students and .45 Africans studying at technical colleges

for each 1,000 of their respective populations. Females constituted 38 percent of total enrollments.

Faculty. There were no black staff at the white institutions; sector-wide about 80 percent of the staff was white. All senior administrative positions were in the hands of whites who reported to the various departments of education.

Finance. As with technikons, the historically black colleges are poorly equipped. However they receive a disproportionate share of government funding, leaving them with expenditure rates per student that are five times higher than those of the white colleges. This cost ineffectiveness is due to the segregation of the system and the scattered distribution of the colleges.

c. Recommendations for technical education

- Increase the intake of African students, especially women, at white technikons.
- Establish a unit at each institution to sensitize staff to changes in the racial and political environment.
- Fund technikons and technical colleges to develop teaching and learning strategies to improve the pass rates of African students.
- Establish discipline-specific grants and scholarships to encourage Africans to enroll in engineering and science courses.
- Provide scholarships to encourage the most promising African students to continue their education and eventually join the faculty.
- Help current staff members upgrade their qualifications.
- Offer attractive packages to Africans in industry to induce them to take up teaching.
- Involve faculty in policy formulation and implementation in their own institutions.
- Set up instructional design units at institutions throughout the country.
- Reward staff for practical research aimed at alleviating problems in their communities in areas such as health and housing.

- Involve students in practical community development projects.
- Upgrade the facilities of the historically black institutions.
- Rationalize advanced level programs at technikons and technical colleges.
- Reduce the overall number of technical colleges and/or convert them into community colleges.

3. Colleges of education

a. Overview

Teachers are trained in colleges of education (of which there are 101), in universities, and (for vocational subjects) in technikons. All but one of the colleges of education are administered by a government department of education, and 66 of them are controlled by the central Department of Education and Training (DET). Each of the 12 historically white colleges is affiliated with a university which oversees staffing, curriculum, and academic assessment. In addition, almost all the universities offer their own teacher training programs.

b. Findings

Enrollments. Enrollments will have to expand throughout the subsector to meet South Africa's anticipated demand for 277,000 new teachers over the next 10 years. Colleges of education enrolled 54,142 students in 1991, of whom 65 percent were women. Seventy-five percent of the students in the white colleges were female. Africans are concentrated at the historically black colleges, where the great majority of students are in three-year programs, as opposed to the four-year programs that are almost universal at the white institutions. However the failure rate of African students is high and black colleges enroll many more repeaters than white colleges. Over 50 percent of the African students take more than three years to complete a diploma. As a result, black colleges are overcrowded. Many white colleges, on the other hand, have too few students, and several have been closed.

Faculty. Until 1984, the colleges of education were not permitted to appoint faculty members from other races. White staff, however, could be appointed to black colleges. In 1989 100 percent of the staff at historically white colleges were white. Forty-three percent of the staff at black colleges were white. Many of the

lecturers at black colleges are less qualified than those at the white institutions.

Historically black institutions. Financial and human resources are inequitably distributed to the African and coloured colleges on the one hand and the white and Indian colleges on the other. Staff-student ratios are higher and facilities are inferior at the former institutions.

DET-controlled colleges. Faculty at the colleges controlled by the Department of Education and Training show few signs of post-apartheid values and enthusiasm for the challenge of teacher training. Unlike their counterparts in colleges with university affiliations, they do not share in academic decision-making. The syllabuses in these colleges are rigid, the institutional ethos is stifling, and the current educational approach will continue adherence to the status quo.

c. Recommendations

- Reconceptualize the role and orientation of the colleges of education.
- Upgrade the teacher training of all Africans, and especially those in the fields of mathematics and science.
- Initiate a massive program of staff development for all college of education staff members throughout the country.
- Provide resources for the development of new curricula, syllabi, and teaching materials.
- Establish exchange programs with colleges of education and universities in other countries.
- Encourage more contacts between colleges of education and progressive faculties of education in the universities.
- Encourage applied research projects growing out of classroom experience and curriculum workshops.
- Initiate community service and adult education programs.
- Initiate formal inservice programs for primary and secondary school teachers throughout South Africa.

IV. HIGH-PRIORITY INITIATIVES

The TESA team recommends the following sector-wide projects for immediate consideration by prospective donors.

- Sponsor a commission of educators from South Africa and abroad to hold a nonpolitical public dialogue on South African higher education. The work of the commission might include a series of invitational symposiums and culminate in the formulation of a body of policy statements.
- Support a cadre of international experts in institutional development and academic administration to serve at several exemplary black universities, technikons, technical colleges, and colleges of education.
- Provide technical and budgetary assistance for the identification, selection, and financial support of key administrators and faculty members in selected black institutions to pursue specialized training, both professional and academic, and to earn advanced degrees.
- Support the development of academic programs at selected black institutions, especially in such fields as engineering, technology, mathematics, applied science, agriculture, business, and public administration. Also fund the development of academic support programs, English language institutes, and computer service centers.
- Provide technical and budgetary assistance to establish linkages between South African institutions and comparable institutions abroad and in other African countries.
- Develop a proposal for establishing a system of community colleges in South Africa.
- Provide assistance in planning, organizing, and funding a national nongovernment corporation or trust to administer the award of competitive scholarships based on financial need to students admitted to institutions of higher education.

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ACRONYMS AND ABBREVIATIONS

ABEL	Advancing Basic Education and Literacy
ADC	Academic development center
ADP	Academic development program
AED	Academy for Educational Development
AHW	Afrikaans historically white
AIDS	Acquired immune deficiency syndrome
ANC	African National Congress
ASP	Academic support program
AUT	Universities and Technikons Advisory Council
BOP	Bophuthatswana
CATE	College for advanced technical education
CBD	Central business district
CEO	Chief executive officer
CERTEC	Certification Council for Technikon Education
CNE	Christian National Education
COMSA	Combined Staff Association
CODESERIA	Council for the Development of Economic and Social Research in Africa
CSIR	Council for Scientific and Industrial Research
CTP	Council for Technikon Principals
DBSA	Development Bank of South Africa
DCM	Deputy chief of mission
DET	Department of Education and Training
DLI	Distance learning institution
DNE	Department of National Education
DVC	Deputy vice chancellor
EC	European Community
EEC	European Economic Community
EHW	English historically white
EOC	Educational Opportunities Council
ERS	Education Renewal Strategy
ESL	English as a second language
FRD	Foundation for Research and Development
FTE	Full-time equivalent
GDP	Gross domestic product
GNP	Gross national product
HA	Historically African
HB	Historically black
HBU	Historically black university
HSRC	Human Sciences Research Council
HW	Historically white
HWU	Historically white university

IDT Independent Development Trust
 JCC Johannesburg City Council
 MEDUNSA Medical University of South Africa
 NATED National Education Department
 NECC Nation Education Co-ordinating Committee
 NEHAWU National Education and Health Workers Union
 NEPI National Education Planning Initiative
 NGO Nongovernmental organization
 NHD National Higher Diploma
 NPCHE National Planning Commission for Higher Education
 NT Natal Technikon
 NTC National Technical Certificate

 OFS Orange Free State
 OFSU Orange Free State University

 PAC Pan African Congress
 PE Port Elizabeth
 PESA Primary Education Sector Assessment
 PNU University of Natal, Pietermaritzburg
 PTE Part-time equivalent
 POTCHE Potchefstroom University for Christian Higher Education

 RAU Rand Afrikaans University
 Rm Millions of rands
 RSA Republic of South Africa

 SA South Africa
 SABRA Southern Africa Development Research Association
 SAIRR South African Institute for Race Relations
 SANSO South African National Students Organization
 SASCO South African Students Congress
 SAPSE South African postsecondary education
 SERTEC Certification Council for Technikon Education
 SRC Students representative council

 TBVC Transkei, Bophuthatswana, Venda, Ciskei
 TC Technical college
 TEPS Tertiary Education Program Support
 TESA Tertiary Education Sector Assessment
 TTC Teacher training college
 TUC Transvaal University College

 UCT University of Cape Town
 UDUSA Union of Democratic University Staff Associations
 UDW University of Durban-Westville
 UFH University of Fort Hare
 UK United Kingdom
 UNDP United Nations Development Programme

UNESCO United Nations Education, Scientific and Cultural
Organization
UNIBO University of Bophuthatswana
UNINET University Network
UNISA University of South Africa
UNITRA University of Transkei
UNIZULU University of Zululand
UOFS University of the Orange Free State
UPE University of Port Elizabeth
US United States
USAID United States Agency for International Development
UWC University of the Western Cape

VAT Value added tax
VC Vice chancellor

Wits University of Witwatersrand

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William A. Stuart
Team Leader

CHAPTER 1

INTRODUCTION

1.1 OVERVIEW AND STRATEGIC FRAMEWORK

Tertiary education in South Africa reflects the prevailing conditions of a nation in the throes of momentous political, economic, and social changes as it begins to divest itself of apartheid. Increasingly, South Africans are adjusting to the idea of living in a democratic society based on respect for the human rights of all its citizens. Universities, technical institutions, and colleges of education are also coming to realize that they, like other sectors of their society, must actively participate in bringing about many of these changes through their instructional, research, and community service activities. Progress is slow but, as this sector assessment shows, there is reason for cautious optimism and hope.

Several major assumptions about the future of South Africa underlie this report. The transformation to democratic government, the dismantling of apartheid, the lifting of international economic sanctions and academic boycotts, and the continuing advancement of science and technology will change the lives of all South Africans. There will be dramatic changes in the number, composition, and distribution of the population who are served by institutions in all four subsectors of tertiary education: universities, technikons, technical colleges, and colleges of education. There will be growing demands for larger enrollments in these institutions to accommodate more and more black students. Costs and tuition fees will continue to rise. There will be fierce and increasing competition for limited fiscal resources as public priorities shift in response to new social needs. Employment prospects for increasing numbers of diploma, certificate, and degree recipients will tighten, then hopefully brighten as the economy turns slowly upward. Finally, as the national government becomes more democratic, there will be public pressure to hold individual institutions accountable for their use of public funds.

Faced with such pressures, tertiary institutions will inevitably have to set new goals and initiate innovative policies. Priorities will have to be established, not only by the new government and the institutions themselves, but by nongovernmental agencies such as USAID who wish to offer assistance. As new policies are drawn up, revised asking budgets are prepared, and nongovernmental requests are formulated and considered, efforts that are tied to the three goals of eradicating apartheid, advancing national development, and maintaining quality and excellence should have the highest priority; those tied to other objectives, laudable as they may be, should receive less consideration.

In the beginning, as the appalling apparatus of apartheid is dismantled, the sector's full attention should undoubtedly be focused on reconstruction, that is, on structural and organizational changes at the national level. It should also be centered on various forms of institution-building, that is, on the reform of racially based, male-dominated administrations, faculties, student bodies, curricula, and research activities. Individual institutions must implement radical procedures to provide educational opportunities for all students, particularly Blacks who have been (and continue to be) disadvantaged, discriminated against, and demoralized. Universities, colleges, and technical institutions will need to deal forthrightly with such issues as student recruitment, access, equity, compensatory education, faculty hiring, and democratization. Priorities will change in the future, and new, more appropriate teaching and research programs will be instituted, but they will succeed only to the extent that the universities, technikons, and teacher training institutions have laid a proper nonracial, nonsexist institutional base for their development. Under the new dispensation, the first five years may well be the most critical for higher education.

Beyond the basic systemic reforms that must be implemented to root out all traces of apartheid in higher education, there are the additional reforms required to build a broad-based high-quality tertiary system that will promote the economic, social, and political development of the new South Africa. The tertiary education sector has always been a vital force in the country's development. It will continue to play an important role in the economic, social, and cultural life of the new South Africa as a reconstructed, nonracial, democratic society becomes increasingly technological, and as problems facing the nation become more complex. The highly skilled graduates, innovative research programs, and extension services of the country's postsecondary institutions are essential to the future well-being of the nation.

In simple terms, promoting national development means giving top priority in resource allocation, academic programming, staff development, student recruitment, and public relations to developmentally important subject areas. The critical areas for South Africa include basic education and teacher training, business and economics, public administration, agriculture and environment studies, and science, mathematics, and technology. Currently the mix of graduates is skewed not only by race and gender but by field and discipline: too many in narrow vocational technical areas, too few in the critical professional fields, too many in art-based programs, too few in basic and applied research, and certainly far too few in programs dedicated to turning out thinking, knowledgeable citizens and the future leaders of a democratic society.

National development will also be served by improving the overall quality and effectiveness of the tertiary system. As this report

will show in detail, academic quality has suffered from inappropriate racially based overexpansion, serious under-resourcing, inadequate planning, too little monitoring of performance, and almost no public accountability. The system as a whole is plagued with low productivity and high costs resulting from institutional redundancy and the inefficient use of faculty, administrators, support staff, and instructional resources and facilities. Other factors contributing to cost ineffectiveness include the wide gap in the subsidization of students; too many failures, drop-outs, and repeaters, especially among black students, resulting from unrealistic program requirements and artificial standards; and too many councils and senior administrators wedded to an outmoded elitist concept of the ideal university.

In short, the most compelling challenge for tertiary education in the new South Africa will be to achieve both equity and excellence. This challenge, which incorporates the issues of access, retention, and success, will require the diversification of the governing bodies, administrations, faculties, and enrollments of all institutions to reflect the diversity of the country's population. At the same time, these institutions will be expected to establish and maintain high standards of quality in admissions, instruction, research, and community service. Dedicated to the abolition of apartheid and to the advancement of local, regional, and national development strategies, they must also commit themselves to quality and excellence. If they succeed, higher education will contribute to a better standard of living, a stronger economy, and a firmer democracy, thereby enriching the lives of all South Africans.

1.2 OBJECTIVES OF THE TESA PROJECT

This report presents the findings of the Tertiary Education Sector Assessment (TESA), an evaluation study which proceeded for approximately ten weeks in-country during October-December, 1991. It is one of the first steps in the development of a longer range sector assistance strategy for USAID. Once the Comprehensive Anti-Apartheid Act of 1986 is repealed or substantially modified by the U.S. Congress, USAID wishes to be in a position to play a significant role in assisting the tertiary education sector of the new South Africa. Therefore the general purpose of the assessment is to describe and analyze the major challenges facing the sector with a view to identifying ways and means for improving education under a post-apartheid system, fostering educational reform under the present system, and contributing to the current debate on the future of nonracial higher education throughout the country. More specifically, according to TESA's Scope of Work, the goals of the assessment are to:

1. Provide a comprehensive and indepth analysis of the constraints and challenges which face the tertiary education system in South Africa and provide information on options for a post-apartheid system
2. Investigate the basis for a rationalization of postsecondary educational institutions and provide information for the current debate on rationalization
3. Identify those tertiary-level institutions which are best placed to make a significant contribution to national development and educational needs
4. Locate key departments within South African postsecondary institutions which, given strategically defined support, will provide critical human and material resources for development

1.3 MEMBERS OF THE TESA TEAM

The members of the international TESA team recruited by the Academy for Educational Development with the concurrence of the USAID Mission in Pretoria included:

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 - Tom Lodge, Associate Professor of Political Science, University of the Witwatersrand, Johannesburg
2. Technikon/technical subsector college specialists
 - Peter Dzvimbo, Dean, Faculty of Education, University of Zimbabwe
 - Brian Figaji, Vice Rector, Peninsula Technikon, Cape Town
3. Teacher education subsector specialists
 - William Fanslow, Associate Professor, School of Education, University of Massachusetts, Amherst, Massachusetts
 - Peter Hunter, Professor and Director, Academic Support Program, and Deputy Dean, Faculty of Education, University of the Witwatersrand, Johannesburg

4. Educational economists

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5. Educational statistician

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7. TESA team leader

- William A. Stuart, Dean Emeritus, Rutgers University, New Brunswick, New Jersey; International Consultant on Higher Education, East Hampton, New York

On more than one occasion during the study, the composition of the TESA team came under criticism from a number of informants. The concerns were with the lack of African and female representation on the Team. These were admitted shortcomings, especially in the politicized atmosphere of today's South Africa. The aim was to field a group of international and South African experts with experience in the transformation, establishment, and operation of nonracial institutions of higher education that are dedicated to serving the needs of diverse populations of students, both male and female. Efforts were made to recruit a more representative team. While the criticism served to sensitize the Team to the issues involved and helped to focus the data-gathering, analysis, and assessment processes of the study, the concern about the lack of participation of black South Africans and women is a valid one.

A more positive feature of the TESA team's composition is worth noting. Four distinguished South African educators were members of the group, including two nonwhites. They were involved in assessing each of the subsectors as well as the financial underpinnings of the entire tertiary education sector. Their individual contributions provided unique knowledge, experience, and depth to a study that demanded expertise, common sense, and good judgment.

1.4 REVIEW OF DOCUMENTS

Guided by a preliminary work plan provided in the Scope of Work, the TESA Team adopted a variety of strategies for gathering and analyzing the basic data required for the sector assessment. In the beginning, the initial task was to assemble and review as many relevant published and unpublished documents as possible, including statistical and demographic data, as well as university, technikon, and college announcements, calendars, annual reports, and various promotion pieces. This procedure was started even before the arrival of the Team in Johannesburg under the direction of Monica Bot and the two research assistants. It continued throughout the project. During the course of the study, additional information in the form of policy statements, government reports, pronouncements, monographs, internal memoranda, and personal correspondence was collected and examined. Many professional journal articles and newspaper clippings were also studied. Most of the key documents utilized by team members to conduct the sector assessment are referenced in the attached Bibliography.

Many of the statistics gathered and examined by the Team exhibited serious shortcomings due, in part, to the divided and fragmentary character of the tertiary education sector. Few truly national statistics are routinely compiled by the government or any other agency. Thus for each subsector and for the sector as a whole, a significant amount of demographic information is simply not available or does not exist. Furthermore, in reviewing the statistics which are available, there are serious questions concerning validity and reliability that cannot be satisfactorily answered. As a result, the Team has been selective in reporting such data and has attempted to issue the appropriate disclaimers where necessary.

1.5 ORIENTATION

The majority of the TESA team arrived in Johannesburg on Sunday, October 13, 1991. Orientation meetings, arranged in advance by members of the Tertiary Education Program Support (TEPS) project and USAID/Pretoria, began the next day. These sessions consisted of briefings, presentations, and discussions concerning the current structure of the tertiary education sector; issues related to Africanization, democratization, and access to education; criteria for identifying exemplary institutions; and a variety of policy initiatives. They were conducted by spokespersons of key professional, political, and educational organizations and groups with a stake in the future of higher education in South Africa, and they included individual South African members of the TESA team.

At the same time, contact was made with the Primary Education Sector Assessment (PESA) team whose schedule of work in-country overlapped with TESA's in order to facilitate a coordination of effort, especially in the area of teacher education. It was agreed, for example, that PESA would address issues relating to the inservice training of teachers while the TESA team would concentrate on the study of preservice training programs.

1.6 INTERVIEWS, CONFERENCES, AND GROUP DISCUSSIONS

Based on work plans and travel schedules agreed to by all TESA team members, visits were made to the campuses of a representative group of institutions in each subsector. Normally the specialists traveled in pairs, but on occasion they split up and made separate visits. In all, one or more members of the Team visited 39 institutions: 10 universities, nine colleges of education, 15 technikons (that is, all of them), and five technical colleges. Several of the larger institutions like Wits, UCT, and UWC were visited more than once by different individuals and pairs.

In addition, during the long weekend of October 26-27, five members of the Team, including the Team Leader, attended and participated in the Kenton-on-the-Katberg Conference at the invitation of the University of Fort Hare. Along with the PESA Team Leader the TESA Team Leader also attended a meeting of teacher-college rectors at the Department of Education and Training (DET) in Pretoria on October 24.

In all of this field work, the TESA team sought to gather and sift information and viewpoints from a cross-section of representatives and stakeholders in each subsector, inquiring into subjects and issues outlined in advance and articulated in the Scope of Work. Interviewees included a wide range of professional educators from vice chancellors and rectors to junior lecturers and school teachers. They also included political leaders, foundation representatives, business executives, parents, students, and a sampling of the public. Except for a few encounters with a handful of public officials, the TESA team worked independently of the South African government. A record of the array of persons contacted during the course of the TESA project is provided at the end of this report.

1.7 DRAFTING THE REPORT

Guided by a preliminary outline agreed to by all members, the Team began drafting the report on November 20. This effort proceeded until November 23 when, at the end of an all-day meeting in which major findings and conclusions were formulated and discussed, a

final detailed chapter outline was determined by the group. During this time, a special meeting was held with ANC representatives. Also, presentations of initial findings and preliminary conclusions were made to USAID officials on November 25, and to the Deputy Chief of Mission (DCM) and several staff members of the U.S. Embassy in Pretoria on the 26th. Following these meetings, a series of policy options and recommendations were shaped and developed by the Team as a whole. Thereafter the Team Leader worked with individual Team members to prepare the final draft.

On December 9, 1991, an initial version of the report was submitted to the USAID Mission. Subsequently, the draft was reviewed by numerous officials, TEPS and ABEL project colleagues, and various staff members of the Mission and the U.S. Embassy. The purpose was to identify factual errors or misunderstandings, and areas of special sensitivity or possible disagreement. Comments on the report by the Mission staff were received by the Team Leader and the Academy for Educational Development and taken into account in the editing and preparation of the final report.

1.8 USES OF THE REPORT

The TESA team set out to measure the current status of the tertiary education sector in South Africa today. It also set sights on the transformation of that sector and the establishment of a more democratic, broad-based, Africanized system for the South Africa of tomorrow. This report presents our findings and recommendations. Part I focuses on the tertiary education sector as a whole. Chapter 2 presents the Team's sector-wide findings, Chapter 3 recommends a number of high-priority initiatives meriting technical assistance and funding, and Chapter 4 presents longer-term recommendations for restructuring and financing the entire sector. Part II focuses on the four subsectors. Chapters 5 and 6 describe the two major issues confronting South Africa's universities: the legacy of apartheid and the challenge of South Africa's future development. Chapter 7 makes recommendations for the reform of the universities in the light of these twin concerns. Finally, Chapters 8, 9, and 10 present the Team's findings and recommendations for technikons, technical colleges, and colleges of education respectively.

While the main body of the report has been condensed to make it more accessible to the reader, it is worth emphasizing that valuable and more complete information and analysis are in the Appendix to the report. The reader is encouraged, therefore, as time allows, to review the Appendices as well as the main body of the report.

As the dialogue on the future of tertiary education in South Africa begins in earnest, the TESA team hopes that this report will

contribute to a better understanding of how the present apartheid-based system operates, and how students, instructors, administrators, and various constituencies, including the public, are affected by it. By the same token, it was the Team's intention to help clarify major issues, identify specific challenges and urgent needs, and explicate racially-based, sexist constraints which must be overcome. Most important, however, are the Team's suggestions for change and improvement. The report will be truly successful if it generates new ideas, sparks innovative solutions, and stimulates creative thinking in the transformation and reconstruction of higher education in South Africa.

While the report provides information and some new ideas to stimulate and foster the public debate on higher education, it also demonstrates the need for further inquiry and investigation as well as much more indepth analysis and evaluation. A partial listing of subjects or topics requiring further study includes the following:

- National goals for tertiary education
- National planning for a unitary system of education
- Feasibility of a master plan for tertiary education
- Long-range planning in tertiary education
- Institutional autonomy and public accountability
- Equity and excellence
- Inter-institutional coordination
- Articulation and transferability
- Preparatory, compensatory, and remedial education
- Adult and continuing education
- Financing tertiary education
- Needs analysis and student financial aid
- Coordination of bursary management
- Student fee policies
- Regionalism and the rationalization of resources

1.9 A NOTE ON TERMINOLOGY

For the sake of clarity, the TESA team has followed local usage (which often differs from official government nomenclature) in referring to different groups within the South African population. Thus in this report, English and Afrikaans-speaking Whites are referred to collectively as "Whites." The three groups who have all experienced degrees of racial discrimination are popularly referred to as "Blacks." Our report generally follows this usage.

Within the black population, there are "Africans," that is, people who are mother-tongue speakers of Bantu languages, "Indians," who are descendants of nineteenth-century indentured laborers and traders from the Indian subcontinent, and "Coloureds," people of mixed racial descent. The terms have no scientific validity.

Usage of them in this report does not imply that the Team believes that races are distinct or different.

An explanation of usage is useful in one other area. The 1913 Land Act set aside 13 percent of South Africa's land for African occupation. The African "reserves," as they were known then, were scattered through the eastern half of the country. In 1959 the government began establishing separate administrative structures in these reserves, grouping them into 10 internally fragmented units that official spokesmen claimed corresponded to the precolonial territories of different ethnic groups: Zulu, Xhosa, Tswana, and so on.

Over the years, these "homelands" have acquired varying degrees of political autonomy. Four of them, according to South African law, are fully independent: Transkei, Bophuthatswana, Venda, and Ciskei. In fact they remain heavily financially dependent on Pretoria, and most of their revenues come to them through the South African Department of Foreign Affairs. Moreover their independence has received no formal recognition outside South Africa.

In this report we refer to these four regions as the "independent homelands" or "TBVC territories." The remaining territories are referred to as "nonindependent homelands." They include Gazankulu, KaNgwane, KwaNdebele, KwaZulu, Lebowa, and QwaQwa.

All ten of the homelands maintain their own education departments. In the TBVC territories; these departments administer all sectors of the education system, including universities. In the nonindependent homelands, the local education departments are responsible for primary and secondary education and teacher training. Their universities fall under the Department of Education and Training (DET) in Pretoria.

PART I

THE TERTIARY EDUCATION SECTOR

CHAPTER 2

OVERVIEW OF THE TERTIARY EDUCATION SECTOR

2.1 STRUCTURE OF THE SECTOR

South Africa's higher education sector is not an all-embracing system, nor can it be called a structure. To the contrary, it is highly fragmented and disjointed. Based largely on principles of racial and ethnic segregation, its pattern is a result of historical happenstance, politics, and occasional planning. It consists of four subsectors: universities (numbering 21 in all), technikons (15), colleges of education (101), and technical colleges (137). See Appendix A for maps illustrating the locations of these 274 campuses.

South African students may progress through 12 years of primary and secondary education (from Sub A to Standard 10) based on their performance in an examination at the end of each year. These examinations are controlled by individual schools with a degree of moderation exercised by the relevant education department. However the senior certificate examination at the end of the last year of school (Standard 10) is externally set, marked, and moderated. The majority of tertiary institutions base their admission criteria on the results of this examination: a pass is the minimum entry requirement for a college of education, a technikon, or a diploma course at a university. A higher level pass is the minimum requirement for degree study at a university.

Each of the four tertiary education subsectors has its own mission. Technical colleges provide vocational and occupational training for students at both secondary and postsecondary levels. The minimum entry requirement is a Standard 7 (Grade 9) certificate. Technikons offer nondegree-level tertiary education, largely in technical fields. Colleges of education train teachers through three- or four-year diploma offerings, and technikons and universities also provide teacher education. Finally, universities offer liberal arts and professional programs from the undergraduate through the doctoral levels. The various levels of the South African education system are illustrated in Table 2.1 below.

Table 2.1.—Relationship between formal education sectors and levels of education, 1990

Sector	Level of Education				
	Pre-primary	Primary	Secondary	Post-secondary	Tertiary
Public ordinary school education	X	X	X		
Private ordinary school education	X	X	X		
Special school education	X	X	X		
Technical college education			X	X	
Teacher education					X
Technikons					X
Universities					X

Source: *Educational Realities in South Africa*

South Africa's total population in 1990 was 33.1 million, including 24.5 million Africans and 4.9 million Whites. According to the Department of National Education's *Preliminary Education Statistics for 1991*, enrollments in 1991 were as follows:

Standard 10	329,478
Technical colleges	76,435
Technikons	104,652
Universities	308,172

These figures exclude the TBVC institutions.

Starting with the Bantu Education Act of 1953 and the Extension of University Education Act of 1959, all schooling in South Africa was officially and legally divided along racial/ethnic lines. The effect of these Acts was to systematically exclude African students from high-quality academic education and technical training. One of the legacies of this policy is a collection of historically

segregated tertiary institutions. According to the Department of National Education (DNE), the number of technical colleges can be divided into racial groupings as follows:

- 69 for Whites
- 3 for Indians
- 14 for Coloureds
- 22 for Africans in the RSA
- 21 for Africans in the self-governing territories
- 8 for Africans in TBVC

The number of technikons can be similarly divided:

- 7 for Whites
- 1 for Indians
- 1 for Coloureds
- 1 for Africans in the RSA
- 1 for Africans in the self-governing territories
- 3 for Africans in TBVC
- 1 for correspondence (all races)

The 21 universities in South Africa can be grouped into 5 categories:

- 4 historically white English-medium universities (Cape Town, Witwatersrand, Natal, Rhodes)
- 5 historically white Afrikaans-medium universities (Stellenbosch, Potchefstroom, Pretoria, Orange Free State, Rand Afrikaans)
- 7 "ethnic" black universities (Fort Hare, Durban-Westville, North, Western Cape, Medunsa, VISTA, Venda)
- 3 homeland universities (Transkei, Bophuthatswana, Zululand)
- 2 bilingual universities (the University of South Africa or UNISA—the massive correspondence university—and Port Elizabeth)

Another legacy of the segregated system is the 15 different ministries of education currently existing in South Africa for Whites, Africans, Coloureds, Indians, and the self-governing and independent states:

- Department of Education and Culture (House of Assembly) for white education
- Department of Education and Training (DET) for the education of Africans in white-designated areas

- Department of Education and Culture (House of Representatives) for coloured education
- Department of Education and Culture (House of Delegates) for Indian education
- Education departments of the 4 independent homelands
- Education departments of the 6 non-independent homelands

These 15 ministries of education are represented in the following chart compiled by T. du Pisani, S.J. Plekker, C.R. Dennis, and J.P. Strauss in "Education and Manpower Development," 1990, No. 11.

THE DECENTRALIZED EDUCATION STRUCTURE IN SOUTH AFRICA

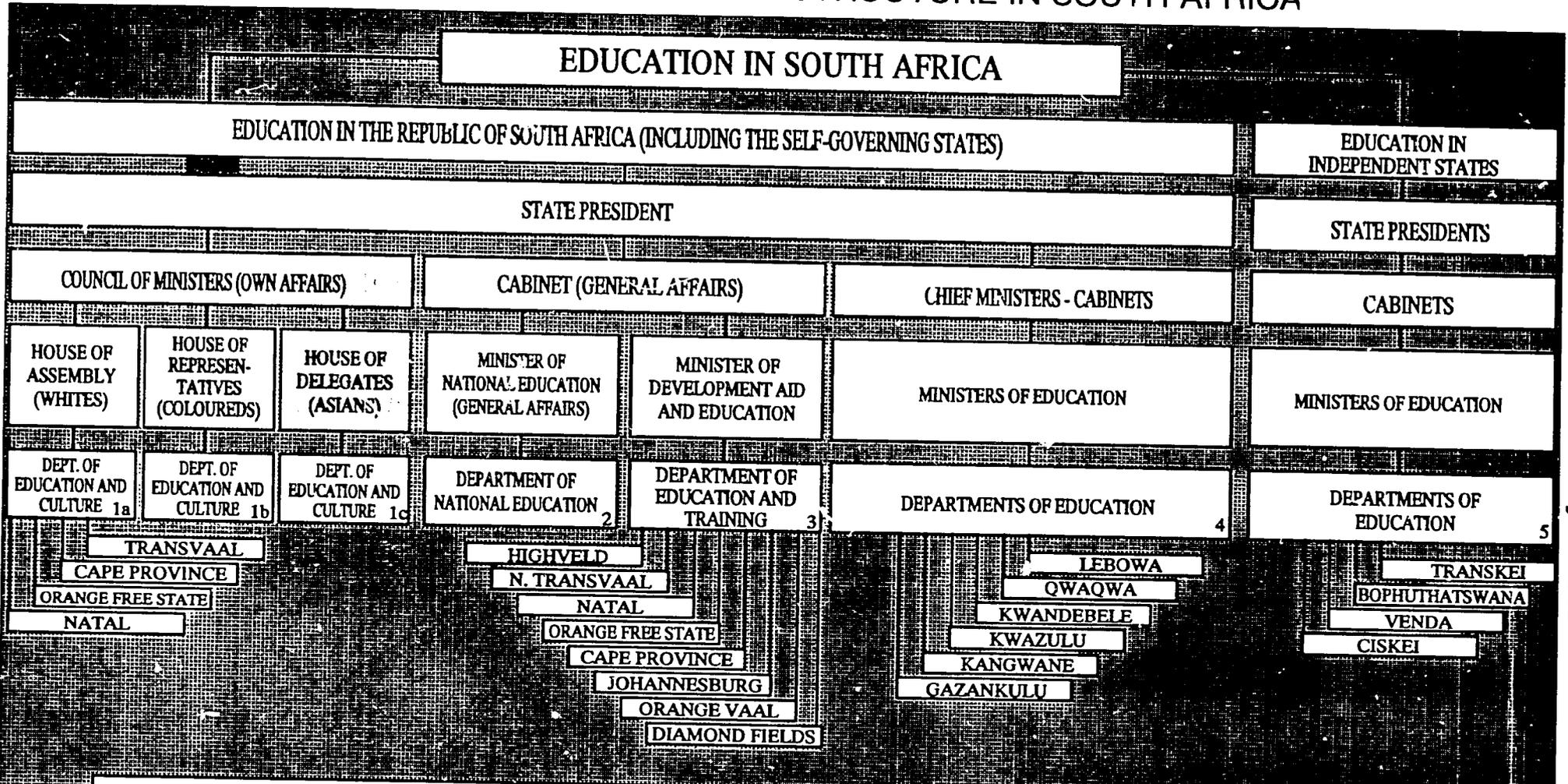


Figure 2.1

1. (a,b,c) the Administration of education for Whites, Coloureds and Asians is considered to be an own affair and is managed by separate departments of education for each of these population groups.

2. The Minister of National Education is responsible for policy (Act 76 of 1984: Article 2(1)) regarding formal, nonformal and informal education in the Republic of South Africa in respect of:

- Norms and standards for the financing of running and capital cost of education for all population groups;
- Salaries and conditions of employment of staff;
- The professional registration of teachers;
- Norms and standards for syllabuses and examination, and for certification of qualifications.

The Minister may therefore determine general policy only in respect of certain predefined matters and he must first consult with each Minister of a department or state responsible for education, as well as the South African Council for Education or with the Universities and Technikon Advisory Council and, in some cases, also with the Minister of Finance. In terms of Section 2(4) of the Act, each Minister of a department or state responsible for education must execute the policy determined in accordance with Subsection 2(1), in so far as it applies to the population group for which he is responsible.

3. The Department of Education and Training administers the education of Blacks outside the Self-governing and Independent States.

4. Six separate departments of education administer education for Blacks of the different ethnic groups in Self-governing States.

5. Four departments of education administer education for Blacks in the Independent States.

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2.2 EQUALITY OF ACCESS AND OPPORTUNITY

South Africa's racially-based education system has produced the following:

1. A large proportion of black students inadequately equipped for higher education, particularly in science, engineering, commerce, and other technical areas
2. Inadequately qualified and insufficient numbers of teachers and teachers of teachers
3. A racially inequitable allocation of physical and financial resources at all levels of education

These factors have ensured that a relatively small proportion of Blacks, especially African and coloured students, have been able to gain access to the historically white institutions, that there is low student enrollment in technical and professional fields of study, and that there is a poorer quality of teaching staff as well as a relative lack of financial and physical resources at the historically black institutions.

Whites—especially men—have been the main beneficiaries of higher education in South Africa. This is evident in the leadership and staffing of almost every institution, as well as in the student enrollment of many of them. In a democratized system, leadership and faculty would be substantially African, places and financing would be systematically allocated to the neediest students, and the curriculum would be sensitive to local cultures, especially to those groups historically discriminated against. These things will not happen by themselves. Systematically designed programs of affirmative action will be required to achieve such goals.

2.2.1 Gender imbalances

Women are unequally represented in most tertiary institutions. For example, female students tend to be channeled to and concentrated in nonprestigious courses. This is a problem that begins in primary and secondary schools. Young women need encouragement to take courses they have traditionally shunned or been excluded from in large numbers.

2.2.2 Racial imbalances

2.2.2.1 Enrollments

The access, retention, output, and quality of black graduates are major challenges facing the country. As Table 2.2 indicates, people of color have been denied equal access to educational institutions.

Table 2.2.—Percentage enrollments at tertiary institutions by race, 1989

	Colleges of education	Technikons	Universities
African	61	14	32
Coloured	16	8	7
Asian	2	8	7
White	21	70	54

Source: du Preez

This table shows clearly that equity considerations are of central importance in any dialogue on tertiary education in South Africa. Hence it is essential to institute admission policies directed toward positive discrimination in favor of Africans. Certainly there is a specific need for national and local policies which will increase the admission of Blacks to institutions which have been (and continue to be) predominantly white. The historically white institutions will need to keep their admissions policies and teaching structures under constant review in order to develop (or initiate, as the case may be) selection procedures promoting black enrollment and academic success.

2.2.2.2 Barriers to increased African enrollments

Because of poor secondary education, most Africans and other students of color do not have the grades required for admission to the predominantly white institutions. Colleges of education produce black teachers in adequate numbers. But their training and qualifications are not equal to those of other teachers in South Africa. The inequitable distribution of resources among colleges of education has reduced the capacity of these institutions to improve their curricula. Thus black student teachers continue to receive a mediocre education, which is then passed on to black secondary students who find it difficult or impossible to cope with Standard 10 examinations. This is how intergenerational inequality is perpetuated at the expense of African students.

The other issue of access affecting all students is that of increasing student fees at all tertiary institutions. Students will be required to carry an increasing financial burden for higher education as the state's contribution decreases and tertiary institutions have no choice but to increase student fees. Privatization of tertiary education is likely to be a disadvantage to African students who come from poor socioeconomic backgrounds. It can be used by conservative forces as a subtle mechanism to exclude Blacks from tertiary education.

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Assisting students to pay higher fees is one of the objectives of the various loan and bursary schemes proposed in Chapters 3 and 4. Financial support and housing allocation must give priority to students with the greatest need. These are in fact the African students.

2.2.2.3 Academic support programs

Access alone, however, is not enough. Africans must also graduate in sufficient numbers and with the skills needed to provide a service to society. As it is now, too many black students fail in all the subsectors. Academic support programs can help in improving retention and increasing the pass rates of black students in tertiary institutions.

2.2.2.4 Higher level training

Few Africans receive the higher diplomas at the technikons: the National Higher Diploma and the master's. At the university level, few Africans graduate with degrees in the sciences and engineering, and few receive advanced degrees in any area.

2.3 EQUITY IN STAFFING AND LEADERSHIP

The inequitable distribution of races among the faculty and administration of tertiary institutions must also be addressed. See Chapters 5, 8, 9, and 10 for a full discussion of staffing inequities in the various subsectors. As for administration, until the 1980's Whites tended to predominate at leadership levels within all tertiary institutions. This is still the case with teacher training colleges, technical colleges, and technikons, but no longer always true with respect to the historically black universities.

Staff development programs and affirmative action policies in staff hiring are the best ways of dealing with this issue. Substantial resources are needed immediately to support the higher-level education of Blacks with the potential to become lecturers and senior administrators. International institutional linkages may also provide a means of increasing the number of black faculty in South African universities.

2.4 INSTITUTIONAL EQUITY

Whites have disproportionately reaped the benefits of tertiary education in South Africa. They have enjoyed the best facilities at universities, technikons, technical colleges, and colleges of education. Facilities in black institutions, especially at the

university and teachers college levels, are simply inadequate. The predominantly African universities are disadvantaged both financially and in terms of human resources. African technical colleges tend to be of very poor quality in all the regions visited by the TESA Team. In contrast, black technikons, with the exception of one, tend to compare favorably with their white counterparts.

There are also pronounced disparities between the types and levels of programs offered at black and white tertiary institutions. The predominantly white institutions have more graduate programs as well as a monopoly on science and engineering courses. Policies of rationalization and improved articulation will have to be developed to address this problem.

2.5 AFRICANIZATION OF CURRICULA AND RESEARCH PROGRAMS

An Africanized curriculum should accomplish the following:

- Reflect the culture and experience of the various social groups represented in the South African national community
- Within that diversity, recognize the special place of that which is distinctively African
- Within that approach, draw upon western and other international traditions, knowledge, creativity, and perspectives
- Explicitly sensitize students to the prejudices and misconceptions perpetuated through the apartheid education system and racist and sexist traditions

Relevant aspects of institutional curricula need to be reviewed and, where necessary, revised in the light of these considerations. Inter-institutional workshops on such themes would facilitate this process.

2.6 DEMOCRATIZATION OF GOVERNANCE

2.6.2 Colleges of education and technical colleges

Colleges of education and technical colleges have no autonomy. Like the school sector, the majority of these institutions are the direct responsibility of their respective department of education. The Chief Executive Director of Education exercises almost total control over those sectors. Although colleges of education and technical colleges have formed the Association of College Rectors

and the Association of Technical College Heads, respectively, neither of these bodies has statutory powers. Civil servants determine administrative matters, curricula, budget issues, admission policies, and examination details. No formal provisions exist for linkages or relationships between colleges, except where colleges of education are affiliated with universities. All lines of communication are top down. The autocratic nature of leadership is reflected in instructional methods which emphasize lecturing, note-taking, and memory recall and discourage discussion, group work, and learning through negotiation. In these inflexible and authoritarian environments, obedience and conformity are rewarded, and enterprise and initiative are discouraged. In most cases, college principals are loyal administrators rather than educational leaders, and there are few formal mechanisms within their institutions for consultative or consensual decision making.

While it might be impractical to install in the colleges processes of governance that are comparable to those in technikons and universities, principals could be given more autonomy and encouraged to exercise initiative. A more representative arrangement of internal decision-making could be established. Principals will need to be trained in the skills required for a more independent style of leadership. In particular they will have to learn how to plan, how to communicate more effectively, and how to conduct administration in a more democratic fashion. At the same time, nongovernment interests should be given the opportunity to play a role in determining the issues which affect these institutions. A possible framework to enable such participation is outlined in Chapter 4.

If the top-down flow of initiative is to be reversed, another essential task would be the creation of forums to facilitate regular communications between institutions. At present, all lines of communication are vertical; there is no provision for lateral flows of ideas and information.

2.6.3 Universities and technikons

In contrast to the colleges of education, universities and technikons have considerable autonomy in managing their own affairs without government interference—determining missions, undertaking curriculum development, appointing staff, spending revenues, and so on. Among universities there are greater variations in leadership style and character of governance than within any of the other sets of institutions. Until recently the historically black universities were governed in a very domineering fashion, and pressures for conformity are still powerful at Afrikaans-medium institutions. At all universities, however, rectors or vice chancellors are leaders, not simply administrators, and their own attributes and predispositions can have a formative impact on the institution they head.

In many respects the governance of technikons is similar to that of the universities, except that their academic boards do not have the same status as university senates. Technikon rectors and councils are hence more powerful and interventionist than their university equivalents. Similarly, elected student representation on most decision-making levels is now common at universities whereas it is unusual in technikons. And whereas universities are increasing the numbers of elected representatives on their senates, councils, and boards, technikons have begun to do this only in one instance.

University councils, however, are more in need of reform than their counterparts in the technikons. In too many cases, they are composed of overlapping categories of state nominees and business executives to the virtual exclusion of anyone else. Without compromising their autonomy, this is one respect in which universities should be encouraged to become accountable to a wider cross-section of the public. The recent restructuring of Fort Hare's council points in a direction that others could follow.

Each subsector has a statutory committee at the executive level (the Committee of University Principals and the Committee of Technikon Principals) which provides advice to the Minister of National Education on matters that affect it. Each body may issue reports, and each meets periodically to discuss issues bearing on its subsector and to consider matters referred to it by the Minister. Neither committee is a decision-making body, and neither provides a forum for coordination, planning, or budgeting.

The University and Technikon Advisory Council (AUT) was established by legislation in 1984. Its charge duplicates, and in many ways supersedes, the roles of the Committee of University Principals and the Committee of Technikon Principals. The AUT advises the Minister on the following matters pertaining to universities and technikons:

1. The provision of any law pertaining to institutional administration
2. The establishment, development, and extension of institutions
3. Academic fields of study
4. Courses offered
5. Criteria for the granting of subsidies
6. Any matter referred to it by the Minister

Like the two committees mentioned earlier, the AUT has no decision-making responsibility and does not provide a forum for the overall planning, budgeting, and accountability of the sector.

In summary, each university and technikon is broadly permitted to do as it will with or without reference to the goals, needs, and financial resources of the state government which provides funding for most of the subsectors' operating costs. Thus both universities and technikons are better placed to resist or modify the authoritarian ethos which prevails generally within the South African education system.

2.7 PUBLIC SPENDING ON TERTIARY EDUCATION

2.7.1 Introduction

Public resources for education, especially African education, increased substantially during the 1980s, from R765m in 1979-1980 to R11,563m in 1989-90. In the last few years, however, the ability of the government to spend on education and other social services has been constrained by low economic growth rates, the need for resources to service government debt, and general economic mismanagement. All of these have ensured that high rates of inflation and unemployment are endemic features of the South African economy. Much of the increase in education spending has been necessary to keep pace with inflation, especially in the purchase of inputs (books, equipment, and so on), in the construction of schools, and in maintaining teachers' salaries in the face of a rapidly rising cost of living. In addition, the declining exchange rate has effectively increased the cost of imported inputs, especially textbooks and equipment.

The main feature of state funding of the universities and technikons in recent years has been a series of drastic subsidy reductions. These have been due to the economically austere conditions and the government's stated objective of diverting public resources to primary education.

2.7.2 Sources of institutional funds

The government is the major provider of funds for all the institutions of higher education. In the case of technical colleges and colleges of education, grants are provided from the budgets of the respective departments of education. Universities and technikons have been funded since 1984 and 1987, respectively, in accordance with a subsidy formula. This formula has not been officially applied since 1988.

The universities and technikons also derive a proportion of their funding from other sources, namely tuition fees, investments, private donations and research contracts, government research contracts, and auxiliary enterprises like residence fees. As the state subsidy has declined, these institutions have had to look increasingly at such alternative funding sources. The ability of

the individual institutions to derive funds from these nongovernment sources varies considerably. Table 2.3 shows the proportion of university funds derived from each fund source category in 1985 and 1989.

Table 2.3.—Percentage of university funds in each fund source category

Fund source category	1985	1989
Tuition fees	13	16
Government subsidy	57	51
Government grants and contracts	4	4
Private gifts and contracts	8	11
Investment income	8	9
Auxiliary enterprises	5	5
Other	5	4
Total	100	100

Source: Bunting, 1991

The same data is provided in the following table for technikons for the period 1988-1989.

Table 2.4.—Percentage of technikon funds in each fund source category

Fund source category	1988	1989
Tuition fees	14	16
Government subsidy	64	60
Government grants and contracts	2	3
Private gifts and contracts	5	4
Investment income	6	8
Auxiliary enterprises	5	5
Other	4	4
Total	100	100

Source: Bunting, 1991

Financial assistance for students comes from a variety of sources: government, universities, technikons, the local business sector and foundations, and foreign governments and foundations. The state provides a large number of scholarships for students training as

teachers. Universities and technikons provide bursaries, especially to the needy, but their ability to do so has been constrained in recent years by the diminishing government subsidy. In 1989, only 1 percent of technikon and 4 percent of university expenditure was on bursaries. In addition, many universities have established student loan schemes. The local business sector provides a significant number of bursaries for students, especially in the commerce, engineering, and science faculties. Finally, a major source of student financial assistance is foreign governments, particularly the United Kingdom, the U.S., Canada, and the European Economic Community. There are also significant contributions from foundations in the United States and Europe. Much of the foreign student aid is channelled through organizations such as the Kagiso Trust, the Education Opportunities Council, the Foundation for Peace and Justice, and the South African Institute of Race Relations. However it is extremely difficult to quantify the level of, or the trends in, student financial assistance from private sector and overseas sources.

2.7.3 Level of public spending

It should be pointed out that case studies of particular institutions are not attempted in the following analysis. Because of the diverse nature of institutions and the inequalities in their funding, it was felt that this would be an inappropriate exercise. Instead, detailed financial information and analysis are provided on as many institutions as possible.

2.7.3.1 The education budget

The South African education budget for the financial year 1989-1990 was R13,460m including the budgets of the independent homelands. The education budget (exclusive of the independent homelands) for the period 1985-86 to 1990-91 is given in the table below. This table also shows the education budget as a proportion of the total budget and of the GDP.

Table 2.5.—Education budget as a percentage of the total budget and of the GDP, 1985-1990

Year	Education budget (Rm)	% of total budget	% of GDP
1985-86	5,110	16.2	4.2
1986-87	6,204	16.2	4.4
1987-88	9,222	19.7	5.6
1988-89	10,264	19.1	5.2
1989-90	12,027	18.9	5.2
1990-91	14,541	20.3	5.5

Source: South African Reserve Bank, *Quarterly Bulletin*, March 1991

The education budgets of the independent homelands in 1989-90 represented between 19 percent (Ciskei) and 24 percent (Transkei) of their total budgets.

2.7.3.2 The higher education budget

Trotter (1988) showed that the tertiary education budget in South Africa, inclusive of TBVC, increased from R236m in 1975 to R1,459m in 1985. As a proportion of the total education budget, the higher education budget increased from 22.6 percent in 1975 to 24.1 percent in 1980 and then declined to 22.2 percent in 1985.

Trotter also provided a racial breakdown of higher education expenditure for 1975 and 1985. This was achieved through analysis of the budget of institutions categorized by race.

Table 2.6.—Higher education expenditure by race, 1975-1985 (Rm)

Race	1975	1985
White	201	1,030
Coloured	9	73
African	19	307
Indian	8	49
Total	237	1,459

Source: Trotter, 1988

As the following table shows, public expenditure on higher education (universities, technikons, and colleges of education) in 1989-90 amounted to approximately R2,350.6m. This does not include

the TBVC region. A further R245.6m was spent on technical colleges, but it is difficult to separate the secondary and postsecondary components of this budget. In the TBVC region, approximately R123.5m was spent on the four universities. However the data on technical education is sparse and that on teacher training unavailable for this region.

Table 2.7.—Composition of public higher education expenditure, 1989-90

Institution	Expenditure	
	Rands (million)	Percentage
Universities	1,378.5	58.6
Technikons	293.8	12.5
Teacher training colleges	678.3	28.9
Total	2,350.6	100.0

Note: Excludes TBVC

Sources: Bunting, 1991; DNE, 1990

The expenditure of R2,350.6m on higher education represents approximately 19.5 percent of the total education budget. This confirms that the decline in the proportion allocated to tertiary education, which began in 1985, is continuing.

2.7.3.3 International comparisons

Table 2.8 below provides a comparison of tertiary and general educational expenditures in South Africa and a range of high- and middle-income countries.

Table 2.8.—Comparison of tertiary and general education expenditures: South Africa and a selected group of countries, late 1980's

Country	Education expenditure		Tertiary education expenditure as % of all education expenditure
	% of GNP	% of govt. exp.	
<u>High income</u>			
Japan	4.8	n.a.	22.2
USA	6.2	22.0	40.0
Hong Kong	2.5	23.0	25.1
<u>Upper middle income</u>			
South Korea	3.4	29.8	9.5
Venezuela	n.a.	n.a.	35.3
Argentina	1.6	9.5	43.5
South Africa	5.2	18.9	19.5
<u>Lower middle income</u>			
Mexico	2.0	n.a.	31.7
Chile	n.a.	n.a.	21.6
Botswana	n.a.	n.a.	14.1
Zimbabwe	n.a.	n.a.	8.7

Note: South African figures are for 1989. n.a. = not available
Source: UNESCO, *Statistical Year Book*, 1990

It is evident from the table that the proportion of the South African education budget allocated to higher education is significantly lower than that for the high-income as well as most of the middle-income countries. The fact that this proportion has been declining consistently since 1985 has serious implications for the development of skills and national economic growth.

2.7.4 The subsidy formula

Universities and technikons have been financed since 1984 and 1987 respectively in accordance with the South African Postsecondary Education (SAPSE) 110 formula. Prior to 1984, the basis for state funding of universities was the total number of students. Before 1987, technikons were fully financed by the state on an annual "item budget basis" whereby needs were determined, evaluated, and paid for by the state. The SAPSE formula, on the other hand, is based partly on student enrollment and partly on success rates. It is also weighted in favor of postgraduate students and enrollment

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in the natural sciences as opposed to the humanities, and it rewards the research output of universities.

In changing the basis for funding from one based on input (total number of students) to one based on input (full-time equivalent students) and output (pass rates, research publications), the state attempted to address the twin problems of high failure rates and low research output, especially from the Afrikaans and black universities.

The SAPSE formula is applied to an annual statistical audit of each institution. The state subsidy is calculated from these figures, particularly the ratio of intake of FTE (full-time equivalent) students to the pass rate. The subsidy formula for "educational and general programs" operates on the basis of ten weighted cost units, one each for instruction or research professionals, support/administrative staff, service workers, supplies and services, buildings, equipment, published books in the human sciences, published books in the natural sciences, journal articles in the human sciences, and journal articles in the natural sciences.

The state also made provision in the subsidy formula to supplement the subsidies of the smaller, mainly black, universities, through the addition of 1,000 students to the actual number of subsidy students.

The state has now reduced its subsidies for universities and technikons in real terms, and in fact it abandoned subsidization on the basis of the SAPSE formula in 1988. Technikons, for instance, are now told how much money is available for them and advised to arrange the division of these funds through the Committee of Technikon Principals. Essentially the state has concluded that it can only meet 80 percent of technikon expenses, with the rest having to be found from student fees and the private sector.

In the case of universities, payment is made on the basis of the so-called "A-factor." The A-factor reflects the ratio of the government's actual contribution to the amount calculated according to the subsidy formula. It is not clear how the Department of National Education determines the A-factor for each institution.

Table 2.9 shows the state's financial contribution to universities and technikons for 1985 and 1989. Universities experienced a real cut in their funding during this period, while technikons showed an average increase of 5.4 percent. There are indications that technikons experienced real cuts in the state's contribution in 1991. The 1988 and 1989 state contributions were precisely the same in real terms.

Table 2.9.—State funding of universities and technikons,
1985-1989 (Rm)

Institution	1985	1989	Av. real growth rate p.a. *
Universities	812.0	1,378.5	- 2.8
Technikons	131.0	293.8	5.4

* Computed on the basis of an average inflation rate of 17% p.a. for this period

Source: Bunting, 1991

Table 2.10 shows the growth rates in enrollment and government subsidy for a range of high student growth and low student growth universities. While it would be unrealistic to expect the subsidies of the low-growth universities to be cut further given their established infrastructure, it is evident that the failure of the state to provide funding commensurate with student growth has left institutions such as Medunsa and the universities of Zululand and the Western Cape in a particularly serious financial crisis.

Table 2.10.—Growth rates in enrollment and state subsidy,
selected universities, 1985-1989

University	Growth rates (% p.a.)	
	Enrollment	Subsidy (real terms)
<u>Low growth of student enrollment</u>		
Potchefstroom	0.0	- 4.7
Rhodes	1.7	- 6.5
Stellenbosch	1.3	- 6.2
Witwatersrand	2.6	- 4.0
<u>High growth</u>		
Medunsa	10.0	- 4.0
VISTA	24.2	13.0
Western Cape	13.1	2.0
Zululand	23.5	- 4.0

Source: Bunting, 1991

Table 2.11 shows growth rates in enrollment and subsidy for the technikons between 1988 and 1989.

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Table 2.11.—Growth rates in enrollment and state subsidy, technikons, 1988-89

Technikon	Growth rates (% p.a.)	
	Enrollment	Subsidy (real terms)
Cape	14	- 2
Northern Transvaal	49	- 34
Mangosuthu	53	10
M.L. Sultan	34	9
Natal	10	15
OFS	2	36
Peninsula	9	- 16
Port Elizabeth	31	2
Pretoria	7	- 2
RSA	81	39
Vaal Triangle	37	12
Witwatersrand	40	- 17

Source: Bunting, 1989

The high-growth technikons, Northern Transvaal, Mangosuthu, M.L. Sultan, Port Elizabeth, and Wits, have been seriously affected either by real cuts or disproportionately low growth in the state's subsidy. The RSA technikon also shows a wide discrepancy between its enrollment growth rate and subsidy, although the impact here would be less severe given that it is a distance-education institution.

2.7.5 Summary of issues

Considering the known distribution of the population of South Africa, the disparities in financing education are indicated in the table below.

Table 2.12.—Total education expenditure, 1989-90

African education	R 5,210,265,020
Coloured education	R 1,370,445,000
Indian education	R 589,284,000
White education	R 4,392,681,000

Source: South African Institute of Race Relations, 1990

Such disparities cry out for simple social justice and highlight the urgent need for South Africa to share resources already committed to education equitably among people of different racial and socioeconomic backgrounds.

Although the subsidy formula devised for financing technikons and universities was abandoned in 1988, funding is still based on the criteria used in this formula. The effect of this has been to perpetuate inequalities between the historically white (HW) and the historically black (HB) institutions. The SAPSE formula favors the HW English universities because of their superior publishing record and success rate as well as their relatively higher number of postgraduate students. Thus it has been used by Whites to channel more funds to predominantly white institutions at the expense of the black institutions. In addition, a considerable proportion of higher education subsidies is going to middle and upper-income families, most of whom are white.

Because the formula does not reward growth, the growth institutions, mainly black, have been affected critically. The established HW universities have been affected as well, particularly their leading sectors (engineering, science, medicine), which have not been adequately compensated in the formula.

The structuring of the subsidy formula also has other serious equity implications. Given that many black students are in what are regarded by the state as high risk categories, the subsidy thus functions to discourage enrollment of black students at historically white institutions. Furthermore, the state does not fund academic support programs established at these institutions to help the educationally disadvantaged cope with the requirements of tertiary education.

In the face of diminishing public resources, the institutions increasingly have had to generate alternative sources of revenue. However their capacity to do this varies considerably. The HB institutions, with fewer private donations and research contracts and lower investment income, will have to increase tuition fees substantially unless the pattern of state funding is altered drastically.

Diminishing state resources have meant that expenditures for most institutions have been decreasing in real terms since 1988. Again, the HB institutions have been affected more seriously. Because the HW institutions have an established infrastructure, their capital expenditure needs are less urgent. In the face of declining public resources, they have been able to shift resources from capital expenditure budgets to their educational programs so that the latter do not suffer. The HB institutions are in a much worse position. Lacking basic infrastructure and staff and/or having debt for recent capital expenditure, they do not have the ability

to reallocate resources to their educational programs. For these institutions, the choice is how to allocate diminishing resources to ensure that overall development continues. This has undoubtedly affected their efficiency as reflected in the quality of output as well as in their ability to offer increased access to a larger proportion of the socioeconomically disadvantaged population.

In the case of the technical colleges and colleges of education, budgets are determined by the respective education departments. The segregated nature of these institutions has resulted in the inequitable allocation of resources. In terms of allocated resources, African students in the colleges of education are considerably worse off than students of other races. On the other hand, the proliferation of geographically scattered technical colleges for Africans has led to a relatively high expenditure per student for this group as well as for Coloureds.

2.7.6 Future funding

The financial base of the South African tertiary education system is highly dependent on government funding. Given this dependency and the government's stated desire to reduce funding of higher education in order to divert resources to the primary and secondary sectors, the ability of institutions to respond to rapidly growing needs may be limited.

Given the present population of South Africa and the current economy, we can estimate the cost to the state of accepting full responsibility for providing equal educational opportunities. The following data come from a 1990 report by the South Africa Foundation and the Pretoria University Economics Department:

- Taxes would have to be increased by 25 percent to equalize spending on education.
- Education would have to be allocated 42 percent of the state budget and 11 percent of GDP in contrast to the current 13.3 percent of the budget and 3.5 percent of GDP.
- Total primary and secondary education spending would have to rise from R9.3b to R21.7b.
- Present spending on black education would have to be increased fourfold from R5.4b to R21.7b.

More realistically, the extent of future state funding of higher education depends crucially on the rate of economic growth and the priority allocated to higher education in the government's budget. High rates of economic growth during the next decade may relieve the burden to the state of increased revenue through taxation. In such a climate, it is not unreasonable to expect the government to maintain its commitment to education at the current level of 20

percent of the total budget, even in the face of competing demands in the areas of health, welfare, and security.

However, even assuming that the government maintains its present commitment to education in general, it is unlikely to maintain its relative commitment to higher education. South Africa has a pressing need to provide basic (literacy) education and to upgrade the primary and secondary schools. This effort will require vast financial resources. In a word, the state will have no choice but to reduce its historical financial commitment to higher education. Indeed, since 1987, when the subsidy formula was abandoned, the effects of this reduced commitment have become increasingly evident.

As stated earlier, what the state can afford to spend on education in general and on higher education in particular will depend on the level of economic growth. Appendix C shows that the growth record of the South African economy during the 1980s was extremely bleak. However, in light of the present political climate and expectations of a democratic government, a series of reasonably optimistic projections of the growth rate have been computed by economists for the period 1990-1995. Appendix D shows the implications of these projections for educational expenditure in a variety of scenarios.

2.8 EFFICIENCY OF TERTIARY INSTITUTIONS

It is well known that the implementation of a racially defined education system has led to the inefficient allocation and usage of scarce public resources at all levels of higher education. Three indices of efficiency are readily distinguishable: capacity utilization, internal efficiency, and external efficiency. Internal efficiency is loosely defined as a measure of the cost-effectiveness of the system with reference to its output. External efficiency refers to the ability of the education system to meet the needs of economic and broader human development.

2.8.1 Capacity utilization

Educational efficiency in South Africa has been hindered partly because of the allocation of resources for the establishment of institutions, mainly universities, in the self-governing and independent homelands when expansion of existing institutions would have been the more prudent policy. The state's insistence on separate technical education, resulting in the geographical fragmentation of African technical colleges, has also contributed to the inefficient use of resources.

The HW institutions have refused to enroll larger numbers of socioeconomically disadvantaged students, ostensibly on the grounds of limited resources and the poor secondary school education of

these applicants. In reality, however, the intent has often been to maintain the uniracial character of these institutions. Therefore their growth rate has been slower than the rate of the HB institutions and disproportionate to the number of eligible higher education students. Teacher training has been particularly stunted by the under-utilization of the white colleges of education due to falling enrollments and the refusal of the state to allow entry to other races.

2.8.2 Internal efficiency

Internal inefficiency in the HB institutions as reflected in measures of success and cost effectiveness is largely the consequence of a racially based education system. A large proportion of the intake in the historically black institutions are students who have received qualitatively deficient school education. The combination of poor student quality, inadequate and poor staff, and lack of facilities has resulted in high drop-out and repetition rates at the HB institutions. Moreover these factors have contributed to the low cost effectiveness of many of the scientific and technical faculties at the HB institutions.

Internal inefficiency, however, is not limited to HB institutions. Several HW technikons are characterized by relatively high failure rates of first-time entering students and high unit costs (Table 8.18). Also, several faculties at the HW universities are comparatively cost ineffective (Appendix K).

The internal efficiency of the University of South Africa is of particular concern, especially as distance education is the only avenue of higher education for a large proportion of the black population. Although its unit costs in terms of absolute rands are low, other efficiency measures, such as the failure rates of first-time entering students (Table 6.8) and the ratio of enrolled unit cost to unit credit cost (Table 6.7), reflect a high degree of internal inefficiency.

2.8.3 External efficiency

The external efficiency of an education system is its ability to meet the manpower needs of a country for economic and broader human development. The persistence of skills shortages and the underdevelopment of black high-level manpower raise questions about the effectiveness of the tertiary education system in producing the skills essential for development.

While the magnitude of the skills shortage is a subject of debate among academics, business people, and policy makers, there is little doubt that critical skills deficiencies exist in certain areas (Barker, 1989; Swainson, 1990). Serious shortages have been identified in engineering, accounting, and managerial positions in

high-level and middle-level occupations. Artisans and various categories of technicians also seem to be in short supply.

The skills shortage debate, however, goes beyond the needs of economic development. Large numbers of skilled persons are needed to raise the population's quality of life. Of particular concern here are doctors and teachers.

2.9 ARTICULATION AND RATIONALIZATION

There is no real mobility of students among any of the four distinct types or levels of tertiary institutions in South Africa, each with its own hierarchy of qualifications. The current control and management of postsecondary institutions are located either entirely at the national level or, in the case of autonomous institutions, at the local level. This structure does not promote any form of interaction between the subsectors.

Many of the issues raised in the subsector assessments cannot be resolved without restructuring and reorganizing the entire macrosystem of education. This fundamental reorganization of tertiary education will be driven by the necessity to remove all racial divisions. Mechanisms must be developed to redress racial inequities in educational opportunity by helping students, young and old, to gain the necessary academic skills to enter higher education and by assisting young people who have dropped out of school for whatever reason to reenter the system. To accomplish these tasks on a scale that will have the maximum impact, action must be taken at the national level, and resources must be supplied by the state.

The urgent need for a unitary education system under one ministry of education must be addressed promptly. Some sort of system-wide coordinating body is required to make binding policy decisions, and each of the different types of institutions need to be represented on such a statutory body. If established, this body would be charged with the responsibility of safeguarding the interests of all students and, at the same time, ensuring the efficiency of the system as a whole.

Finally there is the sector-wide issue of teacher education. The training of teachers is conducted at universities, in colleges of education, and in technikons. The current student-staff ratio for all colleges of education in the country is 12.5 to 1. Colleges in the House of Representatives have the highest ratio (13.3 to 1), while the colleges of the DET have the lowest ratio (8.7 to 1). If one applies the student-staff ratios now operative in technikons and universities (see table below), the same number of education students could be serviced by half the existing staff. This suggests the possibility of attaching colleges of education to

universities or to technikons and thus achieving significant savings.

Table 2.13.—Student-staff and student-institution ratios per institutional type, 1990

Institution type	Students		Staff		No. of instits.		Students/ staff		Students/ inst.	
	All	No DLI	All	No DLI	All	No DLI	All	No DLI	All	No DLI
Technical Colleges *	72,174	?	3,278	?	129	128	22	?	560	?
Colleges of education	67,266	-	5,370	-	100	-	12.5	-	672	-
Technikons	86,384	58,214	2,289	2,195	15	14	38	27	5,758	4,158
Universities	302,036	169,202	10,651	9,175	23	19	28	19	14,382	8,905

* Excludes TBVC

Note: DLI = Distance learning institution. Technikon RSA, UNISA, and VISTA are taken as DLI's.

Source: Extracted from *Educational Realities in South Africa*

2.10 EDUCATIONAL PLANNING

Goals of education and educational planning have been closely tied to the government's policy of separate development and the inequitable distribution of financial, material, and human resources throughout the educational system. The inadequacy of the education system has been one of the most explosive issues in South African politics over the past two decades. But despite the political battles, outside of government there have been surprisingly few efforts to develop detailed alternative models to the existing institutions and the teaching that goes on within them.

Educational planning and policy making are presently in a state of flux because of a proliferation of stakeholders who are expressing their own views of what the goals of education in the new South Africa should be. These include various statutory and nonstatutory planning bodies as well as such organizations as the ANC, PAC, and the Urban Foundation.

It is obvious that the future agenda for establishing the goals of education in South Africa is likely to be set by the groups that are dominant politically and economically. Some have been proactive in terms of initiating debate on policy formulation while the other groups have been reactive to those initiatives. This situation is undesirable because the present imbalances in education, and in tertiary education in particular, are likely to continue if all parties do not agree on the form, content, and orientation of education in a new South Africa.

Nevertheless, any attempt to plan the future development of South African tertiary education cannot ignore the uncertainties of the political environment. Reaching consensus about the details of a new political order is likely to take a long time; all the participants agree that the discussions will last for years, not months. Whatever form of democracy emerges from this process, it will reflect the compromises and bargains that are characteristic of negotiated agreements. It is unlikely that a post-apartheid government will have the unilateral power to reconstruct South African society in a more equitable fashion. In acceding to a nonracial political system, white South Africans will doubtless attempt to maintain their privileged access to educational resources. In such a context, it may be difficult to reconstruct tertiary education so that it uses resources more efficiently, is more popularly oriented, and meets national economic needs more effectively.

Notwithstanding these difficulties, a post-apartheid administration will lose support rapidly if it does not act swiftly to alleviate the basic shortcomings of the education system. Within the tertiary sector, the essential ingredients of even the most minimal program of reform will include the removal of any existing restraints on black enrollment at any institution, financial support to expand African participation in higher education, and measures to hasten the recruitment of African faculty members and administrators.

Certainly the future development of higher education is likely to be vigorously debated and existing institutions will undergo unprecedented critical scrutiny. To date, democratization of access and structure have been options more or less readily embraced by institutions motivated by moral impulses and enlightened self-interest. In a few years such measures will become imperatives for survival.

2.11 EXEMPLARY INSTITUTIONS, DEPARTMENTS, AND PROGRAMS

Tertiary institutions should begin immediately to address the issues discussed above. For the sake of illustration it may be helpful to cite some specific examples of innovation that

individual institutions have already adopted. The mention here of particular cases does not imply that this is all there are. Obviously the present study has not been exhaustive, and even among exemplary practices it has been necessary to be selective.

Among the more interesting developments in each of the subsectors have been those directed at improving student access and academic success, staff development, inter-institutional relationships, increased staff and student participation in institutional policy-making, and Africanization.

At Fort Hare, a recent conference convened by the staff association and supported by the administration provided an opportunity for campus-wide participation in policy debates and concluded with recommendations to the institutional authorities. Increased student participation in institutional policy-making has also been a feature of recent developments at the Peninsula Technikon. The trend may be expected to spread. In addition, both Port Elizabeth and Peninsula Technikon have taken important steps to improve access for all students of color and to provide special support to ensure that they will succeed academically.

The University of the Western Cape has a large work-study program providing part-time on-campus employment to 1,200 students, enabling many to enroll who could not otherwise have afforded it. The University also has a team of eight specialists who promote staff development along lines consistent with the university's democratic orientation. Similar initiatives have emerged at the University of Durban-Westville. At Wits, the Academic Support Program now has a group of senior personnel involved in providing workshops for faculty who are concerned about responding to the increasingly heterogenous student intake.

The Soweto College of Education has implemented and tested a new staff development inservice training program under the direction of the rector. With assistance from the U.S. Information Service, a consultant in language and language teaching skills held workshops for college lecturers and local primary teachers. The lecturers have continued the program on their own. The workshops provide stimulating democratic forums where teachers and lecturers can discuss problems and begin to reach practical solutions.

In Bloemfontein, the University of the Orange Free State, the local technikon, and the Bloemfontein Technical College are cooperating in a bridging program designed to facilitate the access of black students to higher education. The University is also introducing English-medium instruction, initially in two subjects in each faculty.

Unitra and Setlegelo have begun to Africanize their leadership. Unitra has an African vice rector; Setlegelo is in the process of promoting an African woman to a senior position.

Only one of the self-governing states has taken advantage of national legislation permitting colleges of education to affiliate with universities of their choice. This is Gazankulu, whose Giyani College of Education is now linked with Wits University. This successful arrangement provides resources and assistance for college curriculum development and for examinations, administration, staff selection, and governance. The University is also represented on Giyani College's council and senate. The only private college of education, Promat, is also affiliated with Wits. In both cases, the arrangement appears to have encouraged the recruitment of highly motivated staff members.

Finally, it may be expected that the recent emergence of community-oriented administrations at certain black universities will produce further imaginative innovations on these campuses.

CHAPTER 3

HIGH-PRIORITY INITIATIVES

3.1 INTRODUCTION

The first step in developing an effective strategy for providing technical and budgetary assistance to South Africa's tertiary education sector is to determine the basic financial needs of the 274 institutions which comprise its four major subsectors. More specifically, attention ought to focus on financial needs over and above those which can be expected to be met by the reconstituted interim or permanent government of the new South Africa in its annual appropriations to higher education.

Second, as the new government begins the process of establishing itself, and as the sanctions which were established under the Anti-Apartheid Act of 1986 are modified and lifted, funding priorities should be formulated which are synchronized with the development plans of both the institutions and the new government. As discussed in Chapter 1, potential projects should be judged against the twin goals of eradicating apartheid and advancing national development.

The third step in designing an effective assistance program is to seek the cooperation of all the major donors, both national and international, public and private, with an interest in the development of higher education in South Africa. Close links between governmental and professional colleagues who are in the business of financing education can provide the cooperation, coordination, and cross-fertilization that are essential to effective project support.

Based on our findings, the following represents a listing of what the TESA team regards as the critical needs of South African tertiary education.

3.2 COMMISSION ON HIGHER EDUCATION

Donors such as USAID, the Commonwealth Secretariate, UNDP, the Ford Foundation, and the Mellon Foundations should sponsor a broad-based, nonpolitical public dialogue on South African higher education. The proposed commission would consist of distinguished educators from South Africa and abroad. It would include one or two government officials, but the body would not be sponsored by or in any way funded by the present Pretoria government. The process of review would involve all major stakeholders, numerous international experts, and a variety of

special interest groups. Research papers, policy statements, conference reports, and testimony would be solicited from organizations like NEPI, UDUSA, CUP, CTP, AUT, SERTEC, SANSO, IDT, and the Urban Foundation.

The TESA report could perhaps serve as a starting point for defining the terms of reference and establishing the broader scope of the work of the commission. In fact, the work plan of the TESA team would probably provide a good basis for setting the commission's agenda.

The purpose of establishing a commission of this sort would be to raise and expand the level of discussion and debate on the issues facing tertiary education and the options open to the new government and to the institutions. Its major aim would be to help build a consensus on needed reforms and policy changes and to negotiate a general agreement on new goals and objectives. To this end, two major project designs would seem to be appropriate.

3.2.1 Invitational symposiums

Under the aegis of the commission, donors might sponsor a series of national invitational symposiums or seminars designed to provide open discussions on key issues in higher education in strategic locations throughout the country. These symposiums would be pegged to topical issues ranging from the subjects outlined at the end of Chapter 1 to broader questions such as the socioeconomic dynamics of educational reform, the miracles of molecular medical research, and the linkages between learning and public policy in a democratic society. Sponsorship would entail the appointment of South African and expatriate facilitators, a central group of planners, selected seminar leaders and specialists, and various staff members to record and distribute copies of symposium proceedings.

3.2.2 Policy formulations

Either as part of the seminar program or separately from it, donors could also underwrite a series of policy statements centering on the major issues, options, and recommendations outlined in this report, as well as those explicated and elaborated by NEPI, UDUSA, CUP, CTP, SASCO, the Urban Foundation, and so on. Teams of experts, both South African and expatriate, would be recruited and charged with the task of studying and analyzing policy issues and making recommendations to the new government.

3.3 DEVELOPMENT OF HISTORICALLY BLACK INSTITUTIONS

3.3.1 Institutional development

Donors should support a cadre of international experts in institutional and academic administration to serve at several of the black universities, technikons, technical colleges, and colleges of education that have been identified as exemplary institutions by the TESA team and others. Experienced international project managers have developed effective means of conducting successful technical assistance programs of this sort, both large and small, in a variety of developing societies. The purposes of such a project might include the following:

1. To increase internal and external efficiency and improve the quality of the educational programs
2. To enhance the management capacity of the institutions
3. To strengthen their research capacity and community (extension) services
4. To assist staff development through the provision of inservice training, mentoring activities, and fellowships awards

The following particular activities might be included in this program:

- Improving academic courses of study, faculty qualifications, teaching methods, academic policies, and laboratory technician training
- Upgrading and extending existing academic support facilities
- Providing instructional materials, equipment, and furnishings
- Establishing productive linkages with employers in the private and public sectors
- Setting up career counseling centers, job placement offices, and tracer study projects on university campuses
- Developing administrative, planning, and evaluation capacity through staff training
- Providing and upgrading equipment, including computers, for administrative units

- Formulating policies rewarding applied research and its dissemination

Specific grants might also be provided to augment and support some of these activities.

Task force responsibilities would include the mentoring of selected black South African counterparts in various areas of specialization. Administrative specialists would include advisors in such areas as institutional planning, financial administration, library development, and fundraising. Academic specialists would include consultants in engineering and applied science, mathematics and statistics, education, agriculture, health, business and public administration, adult education, research administration, English language development, and university extension services.

At the university level, such a project might run three or four years and provide the consultative services of a team of specialists to six or seven black universities where institutional development needs are greatest. The project might also target selected faculties in those universities where the requirements for national development are most pressing. Included would be such universities as UWC, UDW, UNIBO, UFH, Zululand, and the University of the North; and within these institutions, such faculties as education, basic sciences, agriculture, engineering, animal husbandry, business management, and public health. Special emphasis would be placed on the development of English language proficiency and a mastery of computers. As many as 600 person-months of consultant services could be committed.

3.3.2 Administrative and academic staff development

Technical and budgetary assistance should be provided for the identification, selection, and financial support of key administrators and faculty members in selected black institutions to pursue specialized training, both professional and academic, and to earn advanced degrees. For new appointees, the staff development program would include the following:

- Probationary appointment of the candidate in a university, technikon, college of education, or technical college
- Service in a department under the supervision of a mentor
- Overseas candidacy for a master's and/or doctoral degree under a bursary or fellowship
- Continuing service in the home institution upon receipt of the degree

The program would include such additional features as inservice training, both in-country and overseas, study leaves in other African institutions, and attendance at seminars, workshops, and conferences. Well-designed exchange programs would also be highly desirable.

Candidates for such a program should include central administrators with acknowledged potential and junior faculty members in the professional faculties, especially engineering and applied science. Even more attention should be paid to the staff development needs of departments of mathematics, statistics, computer science, and laboratory sciences, where the developmental needs of the new South Africa are greatest.

It should be noted that specific staff development projects may be designed as a part of an ongoing institutional development program (such as the universities example outlined above) or as a separate free-standing project. In the latter case, an international training program might be organized for selected staff in academic disciplines and areas of technical and managerial expertise needed to enhance equity and advance national development. For example advanced training in the U.S. might be provided for faculty in the sciences, mathematics, engineering, and so on regardless of their university affiliation. One of the objectives of such a project might be to promote racial integration in selected faculties and departments of both historically black and historically white institutions.

3.3.3 Program development

Technical assistance should be provided to support the development of the basic academic programs of selected black institutions. Such a program would offer expertise in curriculum development, research design, and extension services. Concomitant support could also be provided in the form of specialized equipment, instrumentation, supplies, teaching materials, and so on. High on the list would be books, journals, and a variety of library adjuncts such as microfiche, audiovisual materials, and remote database access. These resources would be required for most of the particular programs discussed below.

3.3.3.1 Programs advancing socioeconomic and political development

With adequate outside funding and a reallocation of existing subsidy monies, new experimental approaches to programming should be developed in the black institutions which are best suited to meeting the political and socioeconomic needs of the new South Africa, especially when viewed in regional perspective.

3.3.3.1.1 Engineering, technology, mathematics, and applied science

The basic need is for more scientists, technologists, and engineers in the South African economy. Like so many of the country's educational troubles, shortages in these areas begin at the bottom and are exacerbated by racial and gender inequalities. The TESA team estimates teacher shortages in mathematics and science in African schools at between 70 and 90 percent. Colleges of education are not only indifferent to the problem but also lack the laboratories, specialist faculty, and curricula needed to train effective science and mathematics teachers. Moreover the prevailing authoritarian, teacher-dominated approach to teacher training precludes the development of the critical, inquiring minds and problem-solving skills that are essential to the teaching of math, science, and technology.

Basic reform in this area should probably begin at the bottom, but interventions will be required at all levels. As occurred in the U.S. during the so-called Sputnik Era, innovative programs should be developed at primary, secondary, and tertiary levels, and in colleges of education, to stimulate teaching and improve learning in the laboratory sciences of chemistry, physics, biology, and biochemistry, in the new mathematics, and in computer science and computer-assisted technology.

This stimulation of interest in science and mathematics must be treated seriously. It should permeate the entire system. New and revised programs should be planned nationally; they must be adequately financed and fully sustained; and there must be room for continuous experimentation and innovation.

The reform efforts undertaken in each of the subsectors need to be closely coordinated. It is for this reason, in part at least, that the TESA team recommends a major restructuring of tertiary education and suggests the integration of teacher education into either the technikons or the universities. It is our hope that this reorganization will foster a new spirit of inquiry, curiosity, and learning in a new generation of black and white students.

3.3.3.1.2 Agriculture

In this field new programs should be designed for future farmers based on learn-by-doing principles. Students in such programs should supplement course work with internships, work-study activities, and cooperative education arrangements. Active participation in student enterprises should also be an integral part of the curriculum. This hands-on, do-it-yourself approach to professional education has been highly successful in several of the state universities in California.

3.3.3.1.3 Business

Here new approaches using the case method of instruction should be tested, coupled with work-study, internships, and other hands-on learning activities centered in local accounting, management, banking, agribusiness, and investment firms.

3.3.3.1.4 Public administration

There is an urgent need for training and high-quality programs in all aspects of public service in a new democratic society. Some important curriculum changes are under way at UDW, UFH, UCT, UWC, UNISA and elsewhere, but, considering the magnitude of the task of transforming existing governmental structures at both national and local levels, they are simply a beginning. Consider, too, that approximately 96 percent of top management positions in public administration are presently held by whites. When the time comes, a crash program will be required to launch a massive training activity, perhaps with the assistance of such prominent institutions as the Woodrow Wilson School, Georgetown, Stanford, Clark-Atlanta, and Tufts Universities, to help reform South Africa's racially based, deeply entrenched bureaucratic civil service system.

3.3.3.2 Academic support programs

Conducted under a variety of names at different universities, academic development or support programs have been set up to help students bridge the gap between secondary school and the university. Generally focusing on basic skills, they try to bring students to the point where they can do university-level work. Most of the existing programs, however, are poorly conceived in the first place and, in the minds of many staff, are regarded as marginal activities that should not become part of the mainstream curriculum. As a result, in most institutions students themselves must pay for the special instruction they receive. The government subsidy does not cover such extra-curricular education.

Programs of this sort, however, represent the only hope that many black students have of receiving a university education. What is needed is basic university reform that focuses not on the so-called standards that black students have failed to reach but on the students themselves. To meet the requirements of all students, both black and white, the need is for flexible curricular offerings in English language, mathematics, the laboratory sciences, and study skills. In addition, regular faculty should be extensively involved in student support services of all kinds, including diagnostic testing, remedial learning facilities, tutoring, computer-assisted instruction, mentoring, and so on. Innovative programs of this type need development, encouragement, funding, and broad-based support.

In the U.S., the University of Maryland Eastern Shore (UMES) has received national recognition for its success in establishing a university-wide program to improve the basic skills of its entering students (part-time, full-time, transfers, college-age, and adults) and to maintain enrollment through graduation. Nearly all the students of this component of Maryland's state university are black. Thus its faculty and administrative staff have had experience in dealing with America's own brand of racism, and many of them are eager to share their expertise with their counterparts in southern Africa. Many other well known HBU's in the U.S. have expressed similar interests, especially the so-called land-grant institutions.

Potential donors would be well advised to capitalize on such international interest and expertise and to underwrite a discrete two- or three-year project in one or more of the African universities (or technikons) to establish a model basic skills program. Such a program would include workshops, seminars, and observation tours, as well as evaluation, assessment, and publication features designed to disseminate useful information about its progress to other institutions. Technical and budgetary assistance should also be provided to support a partnership between a U.S. university like UMES and a dynamic African university like UWC. The project as a whole might provide the following inputs:

- Consultant services to assist in program planning and supervision, curriculum development, teaching materials preparation, inservice staff training, English language training, academic counseling, and project monitoring and evaluation
- Fellowships and training grants (including travel funds) to upgrade the qualifications and skills of program faculty and administrative staff and technicians
- Funds for research, program assessments, and the public dissemination of information, including publications
- Funds for survey and tracer studies
- Furnishings and fittings, language and listening laboratories, audiovisual equipment, computer accesses, and other specialized teaching/learning facilities
- Texts, library books, periodicals, journals, monographs, computer software, film strips, microfiche, and other instructional materials

3.3.3.3 English language institutes

A mastery of the English language is essential for students who aspire to higher qualifications in most South African tertiary institutions. Therefore the establishment and expansion of English language institutes are highly desirable. They should be an integral part of the tertiary system and be designed to serve an array of constituencies including developmental students in the universities, diploma candidates in the colleges of education, teachers, business executives, adult farm laborers, and working mothers. In addition to English (EL) and English as a second language (ESL), there are also increasing needs for the special uses of English (ESP), particularly for students in the technikons and technical colleges. Program inputs should include specially trained teaching staff, large functional language laboratories, sophisticated audiovisual equipment and supplies, computer-assisted instruction, and modern telecommunications facilities.

Meeting the needs of so many disadvantaged Blacks, both college-age students and adults, presents special problems of enormous proportions. As a result, English language training should not only be included in institution-building and academic support projects but should also develop into a major free-standing project supported and financed on its own merits.

3.3.3.4 Computer service centers

Assistance is urgently needed in the design, installation, and development of institution-wide information and computer services facilities. Trained staff, computer hardware, ancillary equipment, and supplies are all required on most black campuses in every subsector. Centers of this sort should be organized to serve an entire campus community. Properly designed, they would provide the following:

- Academic computing services to students, faculty, and visiting scholars and researchers
- Administrative computing services
- A central management information system
- A full array of communication services, including telephone, audiovisual, and teleconferencing capability
- Assistance in faculty development, curriculum design (in computer science, statistics, engineering, and so on), and technical staff training

3.3.4 International institutional linkages

Technical and budgetary assistance should be provided to establish linkages with comparable institutions abroad and in other African countries. The lifting of boycotts will gradually relieve the academic and intellectual isolation of South African institutions of higher education from the rest of the world. But reestablishing old relationships and forming new contacts with colleagues in Europe, North America, and other parts of Africa will not occur automatically: they will need financial support.

Such linkages might take the form of faculty and student exchanges. They might involve collaborative research, curriculum design projects, and program development activities. Special relationships might be established between the HBU's of the U.S. and the HBU's of South Africa. The presidents of the HBU's interviewed by the Team made special note of wanting to work with the better known U.S. historically black universities such as Howard, Tuskegee, Clark-Atlanta, Morehouse, Spelman, Florida A&M, and Hampton. Mentoring on a large scale might also be undertaken. With imaginative funding, the faculty of education at one of the up-and-coming black universities in South Africa might be adopted by Columbia's Teachers College or Harvard's Graduate School of Education. A California community college might form a working bond with one of the nascent community colleges in the newly established OFS region. Or a new faculty of agriculture might be taken under the wing of Cornell University, UC Davis, or some other U.S. land-grant university. Such arrangements will offer benefits to both institutions, not the least of which will be the breaching of the international isolation under which South African institutions, especially the African universities, have labored since their inception.

On a more mundane level, many South African institutions experience great difficulty in obtaining useful management data on students, staff, finance and facilities. For instance, some of the institutions visited were unable to disaggregate their database on students, drop-out rates, retention rates, costs, and so on. Foreign institutions have developed significant skills in the area of data collection and analysis, and local institutions could learn many useful lessons from them. An exchange or linkage in this area could help institutions develop their own knowledgeable educational and administrative software designers and operators.

3.4 DEVELOPMENT OF COMMUNITY COLLEGES

Technical assistance should be provided to develop a proposal for establishing a system of community colleges in South Africa. It appears likely that such institutions will emerge in one form or

another in the near future. Planning consultants and experienced community college educators, especially from North America, will be needed to help the government in developing this new subsector.

In the TESA team's view, one of the primary missions of the proposed community colleges would be to provide access and success in higher education to disadvantaged black students. In the new South Africa, educational opportunity will be open to all young men and women, regardless of race. The challenge will be to design a community college system that will provide equal access (through open admissions, for example) and at the same time offer academic programs (including basic skills programs) of high quality.

What is needed to begin with is a major design project to explore the possibilities for a community college system in post-apartheid South Africa. Desirability and feasibility should be analyzed, alternative models should be examined and evaluated, and policy questions should be assessed. Opinions of professional educators, university academics, NGO officials, and the public should be solicited. Recommendations should be based not only on these local contributions but also on the experience of community college veterans from other countries.

The experience of educators in California would be particularly valuable in such a project. Nowhere in the world have community colleges been developed more extensively than in this U.S. state: surveys reveal that over half of all adult Californians attend a community college at some time in their lives. In view of the effectiveness of these institutions at local community levels, and given the similarities in the economic, social, ethnic, and racial problems which confront both educational systems, it is recommended that the services of several Californian community college representatives be enlisted in exploring the appropriateness of this type of institution for post-apartheid South Africa.

3.5 NATIONAL SCHOLARSHIP PROGRAM

Finally, a national scholarship program should to be developed to provide educational opportunities for increasing numbers of talented black students, both male and female. Assistance is needed in planning, organizing, and funding a national nongovernment corporation or trust for the purpose of administering the award of competitive scholarships, based on financial need, to students admitted to institutions of higher education. Such a program would facilitate access to higher education for young people in the remotest parts of the country. Increasing student mobility, it would at the same time attract

well-educated young men and women to fields deemed essential to national development such as science, mathematics, engineering, education, agriculture, and public administration. Such a program could be financed through adjustments to government subsidies as discussed in Section 4.4 in the next chapter.

Drawing upon the experience of experts in bursary management in South Africa and upon the expertise of administrators of such programs as the National Merit Scholarship Corporation and the College Scholarship Service of the Educational Testing Service in Princeton, New Jersey, a detailed proposal should be prepared for establishing a practical, workable program. Among possible features of this proposal, the following are important:

- The scholarship corporation or trust to be established should be sufficiently flexible to be able to receive funds from a variety of sources, including government ministries, multinational business firms, and foreign governments; to invest those funds in national and international securities; and to administer them in accordance with the preferences of the participating sponsors but governed overall by the policies of the corporation's control board.
- The scholarship program should be widely publicized, especially in the secondary schools, to attract a large number of the potential applicants for admission to tertiary institutions.
- All scholarships or bursaries awarded should be outright grants for full-time enrollment based on the annual costs of a complete program of study for a certificate, diploma, or degree at the tertiary institution of choice. No conditions or commitments should be attached requiring repayment, employment, or service.
- The amount of each award should be determined on the basis of individual financial need, that is, on the difference between the ability of the student and his or her family to pay for tertiary education and the cost of attendance at the institution of choice.
- Scholarships should be awarded on a competitive basis by geographical area or region, as determined by the corporation's governing body, to ensure equity and diversity among the scholarships awarded each year and among the total group of scholarship recipients.
- Scholarships should be awarded without regard to, and separately from, the admission decision of a particular institution.

- Scholarship recipients should be allowed to carry their scholarships to any recognized tertiary institution to which they are able to gain admission.
- Provision should be made for each participating scholarship sponsor to be recognized as the underwriter of a named bursary. All corporate sponsors should be encouraged to supplement each of their annual awards with an unrestricted grant-in-aid to the chosen institution.

CHAPTER 4

LONG-TERM RECOMMENDATIONS

4.1 UNIFYING AND REGIONALIZING THE OVERALL ADMINISTRATION OF EDUCATION

It would be presumptuous of a small group of people charged with the task of investigating the tertiary education sector in South Africa over a limited period of time even to suggest its overall restructuring. However all the available data, together with analyses of the projected costs of education, lead to the conclusion that the tertiary education sector must become more efficient and effective. For one thing, the multiplicity of divisions, one for each institutional type (technical colleges, colleges of education, and so on) within each department of education within each ministry of education makes system-wide coordination very difficult. An ideal system would consist of a single ministry of education with two broad divisions, one for schools and the other for higher education. Regional boards would constitute a second level of management within this unitary structure.

Figure 4.1 represents a system of educational administration which would permit a degree of regional and institutional autonomy while at the same time strengthening the coordinating powers of government. Such a system would also ensure that the allocation of resources and the expenditure of funds were more politically accountable. Initially it may be prudent to regard each of the four provinces as a region. Further study will be necessary to arrive at a basis for any further divisions. The Development Bank of Africa has used an economic viability model to divide the country into nine regions, three in the Cape, four in the Transvaal, and one each in the OFS and Natal.

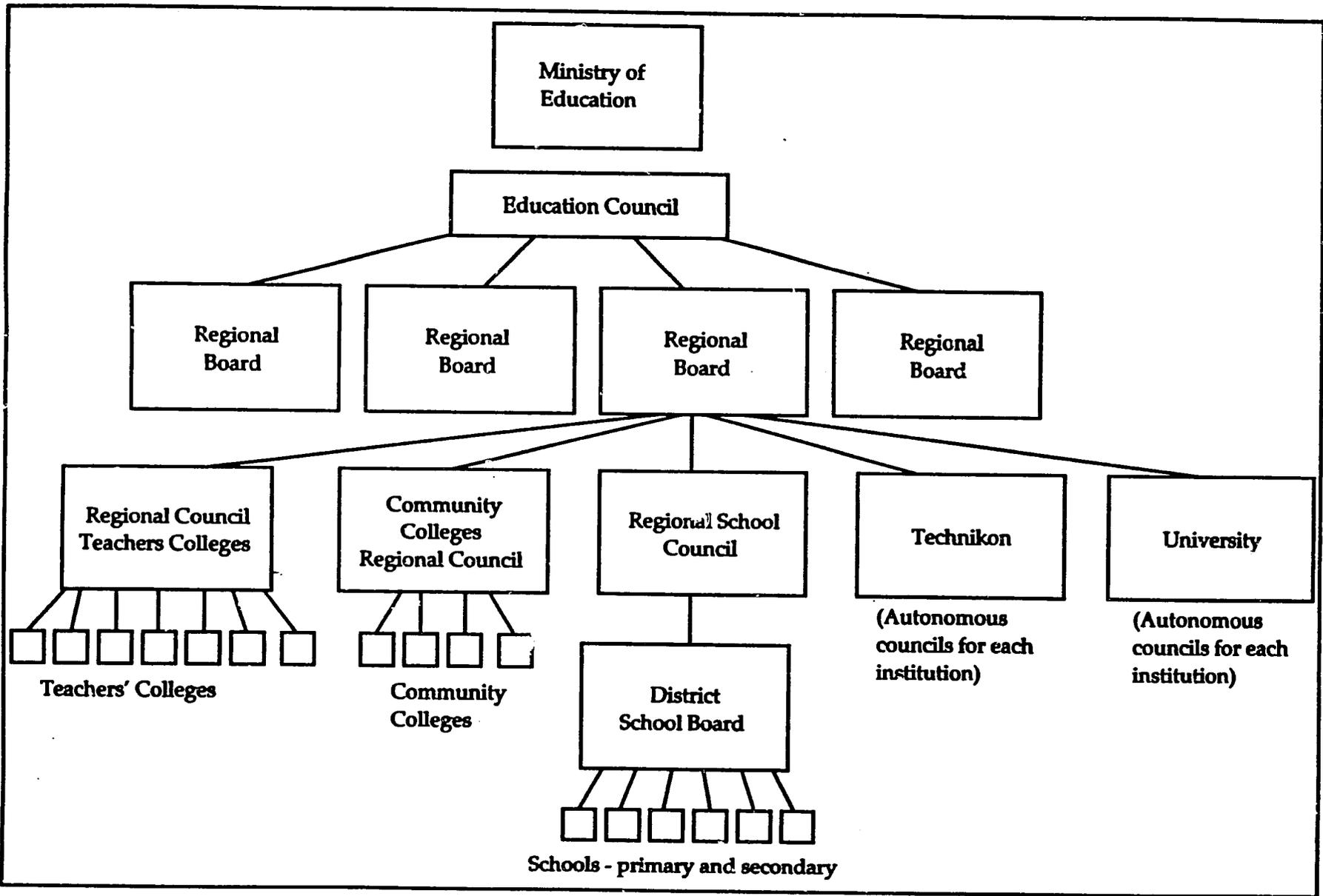


Figure 4.1.—A new model of educational administration

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Beginning at the top, a ministry of education would share authority with an education council. The minister and the council would formulate strategic goals, settle policy questions, determine budgetary parameters for each sector, and set salary levels. The council would be composed of senior officials, two persons nominated by each of the regional boards, and representatives of national professional bodies, employment sectors, trade unions, academic staff associations, and other appropriate groups.

The next level of decision-making would be the (four) regional boards of education. These boards would include an executive director, two representatives each of schools, community colleges, and colleges of education, and one person from each university and technikon council. They could also include stakeholder representatives similar to those on the national education council. Within the budgetary limits and policy goals determined by the ministry and the education council, the regional boards would rationalize roles, functions, and facilities between different institutions within the region, allocate funding within each sector, and determine broad curriculum matters. The levels of funding for primary, secondary, and tertiary education would be set nationally.

At the third level, universities and technikons would retain autonomous councils. Their existing powers would be diminished only to the extent that regional board decisions concerning rationalization were binding. Colleges of education and community colleges would each nominate a representative to a regional council for their respective sets of institutions. These bodies would have the same sort of authority enjoyed by university and technikon councils. A regional school council would include nominees or elected representatives of district school boards, themselves chosen by individual school committees.

Each of the three sector-wide decision-making levels could develop their own specialized subcommittees, and each would require some permanent staffing. The defining characteristics of this system would be joint decision making by representatives and administrators from the full range of educational institutions, a major role for people elected or nominated by subordinate bodies or outside interests, and the promotion of articulation between institutions and sets of institutions within each region.

Whatever the outcome, the restructuring process must be as democratic as possible, and should include the following:

- Finding a neutral coordinator
- Establishing a working group
- Ensuring that the working group includes representatives from government, the private sector, political groups,

unions, each of the tertiary education subsectors, teacher associations, and any other groups with an interest in education

This working group would establish policies to govern the negotiations for and implementation of the restructured system. It would also determine the aim and objectives of education, including policies that would be applied nationally to correct imbalances of gender, race, and access. Finally, it would consider the longer term development of the educational system. Here the problem will be to design a system that is both effective and democratic, one that will facilitate rationalization and reallocation of resources without depending on authoritarian direction.

4.2 ESTABLISHING COMMUNITY COLLEGES

4.2.1 Need for community colleges

It is apparent that the school system is not preparing all of South Africa's young people to compete equally for admission to tertiary education. Few matriculants from DET schools have passes in mathematics and science. Added to this, many people are looking for a second chance at education, including those who dropped out of school or were compelled to join the work force and who now desire to improve themselves academically.

There is a wide gulf between how students are expected to perform in the final year of secondary school (even at white schools) and what is required of them in their first year at university. But universities would be misusing their resources if they channelled an excessive amount into remedial education. Academic support programs cannot be expected to do all the work of reteaching basic skills.

To increase the number of black students in engineering and the sciences in particular, an institution is needed that is mandated *inter alia* to assist underprepared students gain access to tertiary education programs. This seems to be one of the best ways to redress racial and gender imbalances in tertiary education.

In fact a strong case exists for the establishment of a unique type of South African community college to perform a number of functions including the following:

1. Equipping students with postsecondary vocational qualifications
2. Undertaking remedial work in math and science
3. Functioning as an adult education institute

4. Preparing students for university study

Graduation from a university preparatory course at such an institution might function as an alternative to matriculation as a university admission requirement.

The government's Education Renewal Strategy refers to a similar type of institution but calls it an "Edukon." The Education Foundation has also been vigorously promoting the establishment of community colleges throughout the country. So, apart from the TESA team's analysis, other actors in the field of education have also identified a need for this type of institution.

4.2.2 Role of community colleges

In *Community Colleges in Canada*, Paul Gallagher describes these institutions as:

products of provincial or territorial legislation and function[ing] as instruments of economic and social policy implementation within their jurisdiction rather than as independent institutions with autonomy in their own right. As public institutions, they are also key agents for broadening accessibility to post-secondary education. (Gallagher, 1990, p.3)

A South African community college should be an educational institution with the following features:

1. It has an open admissions policy.
2. It serves the education and training needs of the local community.
3. It provides the means by which any person, regardless of his or her academic background, can progress in order to gain admission to a technikon, college of education, or university.

While community college curricula could include programs such as music and art appreciation, entrepreneurial training, vocational guidance, civic education, and anything else requested by the local community, their short-term focus should be literacy and numeracy education, artisan training, and bridging or transfer programs. This focus is essential to increase the access of Blacks to tertiary education and specialized technological fields at technikons and universities.

For bridging or transfer programs to be effective, they must be given the same status as the senior certificate examinations, and they must be accepted by a majority of tertiary institutions.

These institutions should collaborate closely in the design and evaluation of community college curricula.

4.2.3 Establishing a community college system

The design of a system of community colleges should be based on the following assumptions:

1. It is not educationally desirable to have yet another type of institution added to the existing system of schools, technical colleges, colleges of education, technikons and universities.
2. The state should in large measure fund community colleges.
3. Such funding must be achieved through rationalization of the postsecondary education sector.

Based on these assumptions, three options are possible.

4.2.3.1 Option one

The first option is to convert all 137 technical colleges into community colleges. Technical college principals are generally amenable to such a proposal. The advantages of this strategy include the following:

- The number of existing technical colleges and their geographic spread will make them accessible to most communities.
- New capital investment will be very low and will entail expansion of existing under-resourced facilities only.
- Discussions of the new mandate for technical colleges could lead to rationalization of courses between community colleges, technikons, and even universities.
- Further rationalization could be achieved by combining groups of existing technical colleges to form multicampus community colleges.
- The effort to eradicate illiteracy will be uniform throughout the country.
- Large numbers of people will be served.
- Greater efficiency will be achieved in the provision of education and training.

This option also has two disadvantages:

- Existing staff at technical colleges will have to undergo training to help them cope with the new mandate of adult education and bridging programs.
- Institutions and staff may resist this new mandate.

4.2.3.2 Option two

A second possible strategy is to convert selected technical colleges and colleges of education into community colleges. This option has two main advantages:

- The presently under-resourced institutions can be converted and be given a new image and additional resources.
- Regional education boards could be given the responsibility of identifying colleges to be converted, thus solidifying their commitment to the new system.

The disadvantages of this option are as follows:

- Since community colleges become an additional institutional type, only limited rationalization takes place with very little cost saving. In fact, costs may increase.
- Community colleges will not be as accessible to all students and every community.
- The impact that community colleges could have on the issue of access is reduced.
- Colleges selected for conversion will possibly be seen as having failed as colleges of education or technical colleges.

4.2.3.3 Option three

The third possibility is to start a community college movement which has no campus but rather makes use of existing facilities made available by sympathetic institutions. The overriding advantage of this option is that the cost will be very low: virtually no capital cost will be involved except for a possible nominal rental charge. However this strategy has several disadvantages:

- Colleges could only function after hours when facilities become available.
- For this reason, such a system would not help to solve the problem of idle youth who cannot find employment or admission to tertiary education.

- Students who need help academically are less likely to attend late afternoon and evening classes.
- It will be difficult to attract staff to work in the afternoon and evenings only.
- The movement will have to rely on the goodwill of existing institutions.
- Organizational identity will be difficult to establish.
- Institutional credentials will be questioned and articulation agreements will be difficult to negotiate.

4.2.4 Rationalization of academic levels

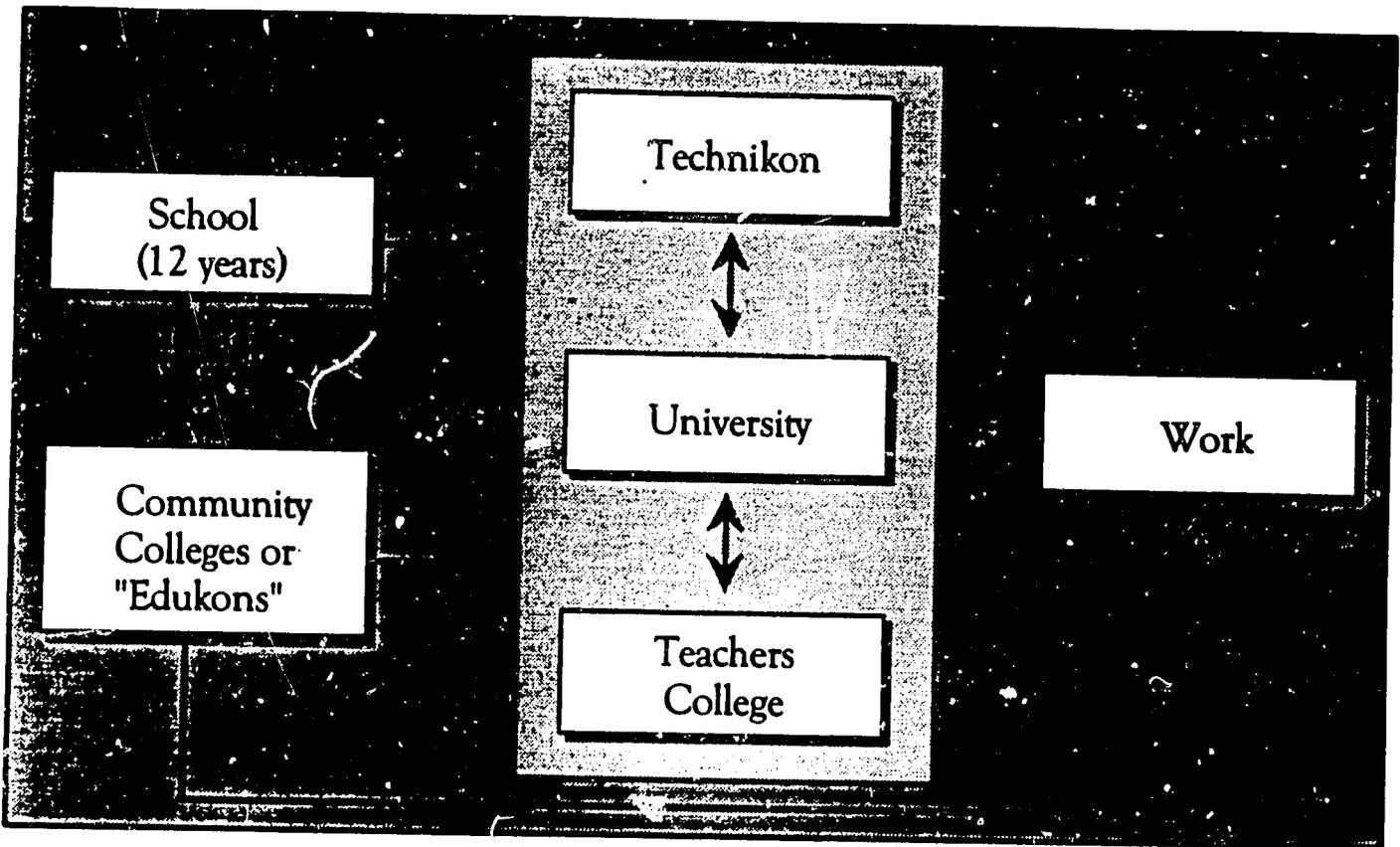
With the conversion of technical colleges into community colleges, it should be possible to initiate improved articulation by rationalizing the hierarchy of qualifications as follows:

- Since only 24 percent of the total technical college student population is studying at the NTC IV, V, and VI levels, transfer of students to a technikon after NTC III would mean that the NTC IV to VI levels could be discontinued. This would enable community colleges to accept more students.
- Similarly, if effective articulation between technikons and universities were negotiated, technikon students could transfer after the National Higher Diploma (or B Tech degree in the new proposals), thus making the master's diploma and laureatus at technikons redundant.
- This would mean that, if their grades were good enough for admission, students from school might enter the tertiary sector directly or go to a community college, then transfer to a technikon, and after the N.H. Diploma transfer to a university if they wished to study further.

The following figure represents this situation diagrammatically.

Figure 4.2

Flexibility in Education in South Africa 1991



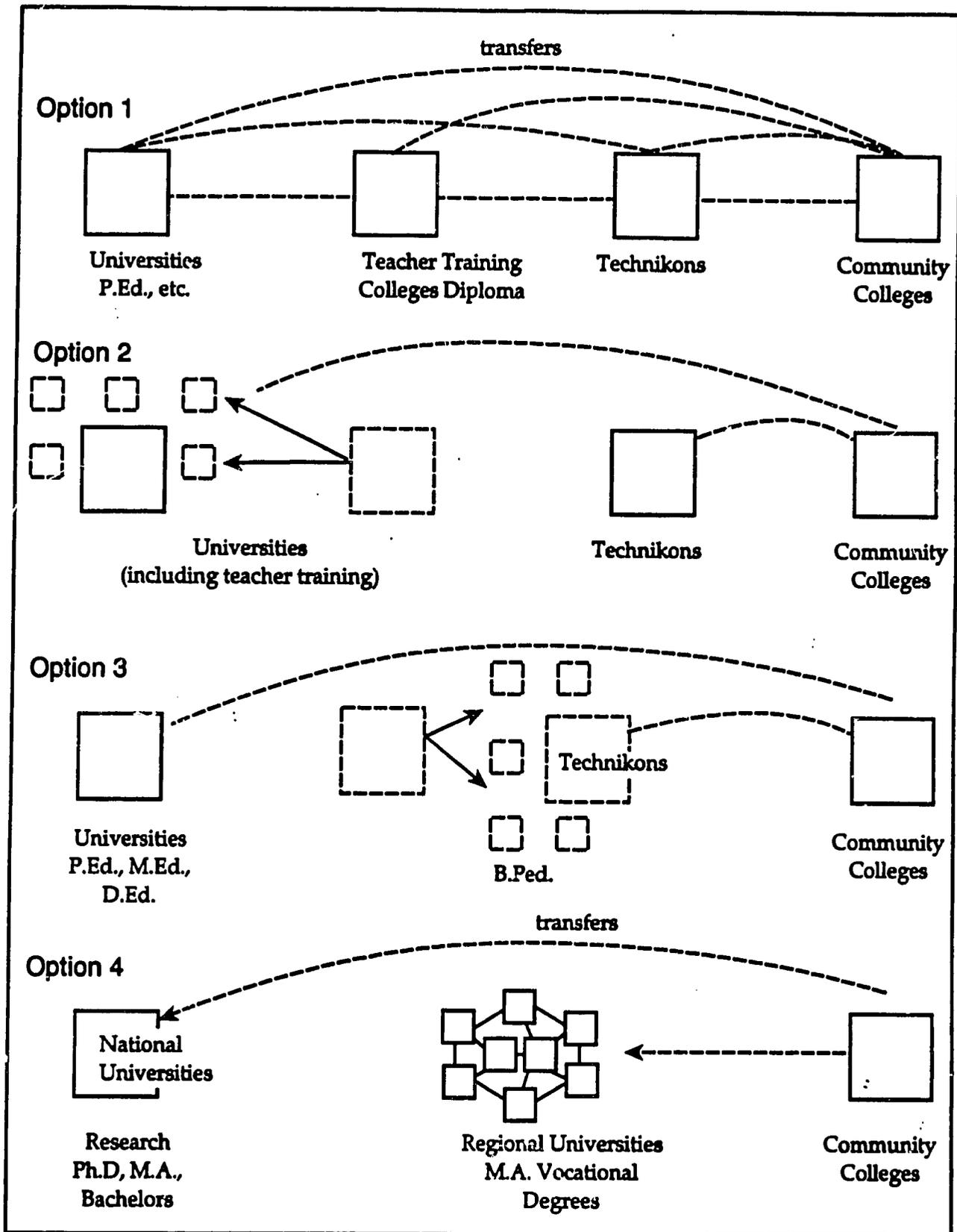
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4.3 RESTRUCTURING THE TERTIARY SUBSECTORS

The imperatives of rationalization seem to require a considerable reorganization of the tertiary sector. Colleges of education, in particular, represent grossly under-utilized facilities. Moreover the relative cost of training teachers in comparison to other professional groups is very high, and, despite the existence of several excellent colleges, the overall quality of teacher training leaves much to be desired. The following four options, illustrated in Figure 4.3, demonstrate ways in which the sector could be reorganized to address these problems.

(7)
(6)

Figure 4.3.—Four options for restructuring the tertiary education sector



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4.3.1 Option one

This option would involve least change in the existing structure. The four subsectors would continue to exist as at present, although the technical colleges would be transformed into community colleges along the lines suggested in Section 4.2.3. The main change would be the introduction of new procedures to ensure the mobility of students between institutions. As with the other three options, each institution (or set of institutions in the case of colleges of education and community colleges) would be represented on regional boards of education. Among the concerns of these boards would be the closer coordination and articulation of institutions.

Two or three carefully identified exemplary technicians should initiate discussions concerning articulation and student mobility with the local technical colleges and university authorities. Once restructuring is undertaken, it should involve staff development programs focusing on the design of curricula to promote articulation. Visits should also be undertaken to institutions or countries where policies promoting articulation and student mobility have been successfully applied.

This model would maintain the sharp inequities of quality and resources between institutions within the sector. However these inequities might be alleviated by more extensive university outreach activity in the area of teacher training, for example, along the lines of the Wits model of granting affiliate status to the Giyani College. Without rationalization, teacher training would probably remain expensive in per capita terms in any case.

On the other hand this option would encounter the least political resistance. It would not threaten any institutional interests, and, in the short term, it would avoid the expenses that a more ambitious program of reconstruction would require.

4.3.2 Option two

This option would transfer the administration of teacher training to the universities. Student teachers would remain on their former college campuses, but these institutions would become satellites of university faculties of education. Universities would take over the full responsibility of training teachers, and college staff members would become members of the university. There could be degrees of absorption and control, of course. At one extreme, the university education faculties might merge with the colleges. Alternatively, they might exist in a supervisory relationship to them and help to upgrade the college curricula to the point where students would qualify for both degrees and diplomas. Diplomas might well be retained for an interim period subject to university accreditation. University faculties would also continue to train senior secondary teachers and educational managers at the B.Ed., M.Ed., and D.Ed. levels.

Such reallocation of resources would offer savings on administrative overhead and an increase in the quality of teacher training. Another advantage of this option is the possibility that universities would make fuller use of college facilities for outreach activities, part-time courses, and the enrichment of distance education. The main drawback is that not all universities have the resources to take responsibility for teacher training. Education faculties tend to be very small, even at the larger institutions.

4.3.3 Option three

This option involves a division of teacher training functions between universities and technikons, with the universities continuing to train secondary school teachers and educational managers. The technikons would devote much of their capacity and resources to conducting diploma courses for teachers, upgrading them to a junior degree level of B.Ped.

Under this model the colleges of education would effectively become technikon satellites, enabling the technikons to extend their provision of vocational and technical training to smaller urban centers and rural areas. Placing basic teacher training under the leadership of the technikons would reinforce the career-oriented focus and professional emphasis of all of their programs. It would also save administrative costs. The disadvantages of this option include the fact that technikons, as they are presently constituted, do not have the range of academic disciplines needed for a full program of teacher training, particularly an enriched one. Moreover colleges of education might well resist being assimilated into the technikons.

4.3.4 Option four

Option four is an adaptation of the U.S. model of a hierarchy of higher education institutions. It would have three essential components. First, leading the sector, would be comprehensive national universities, including most, if not all, the existing South African universities. These institutions would be centers of basic and applied research, providing degree programs to the highest level and giving greater emphasis than at present to postgraduate education and academic training. They would offer a full array of undergraduate degree courses but would not offer diplomas or narrow vocationally oriented courses. A second tier of institutions, regional universities, would carry out the present functions of both the technikons and teachers colleges. They would offer professional degrees up to master's level and would also undertake applied and problem-focused research. They would be multicampus institutions, each incorporating a geographically proximate cluster of existing institutions with considerable resource reallocation between them. Finally, the third tier would be the community colleges, the basis of which was outlined above.

This system would promote a reallocation of space and facilities, allowing all existing institutions to be used more cost effectively. It would narrow the gulf between technical and academic education, especially in the regional universities. It would enhance the stature of the teaching profession and many other professions as well. On the other hand, it would change the concept of universities that now exists in South Africa, and it would blur the institutional identity developed by the technikons. It might also accelerate the expansion of the comprehensive national universities and the regional universities well beyond an affordable level.

4.4 RESTRUCTURING THE SUBSIDY FORMULA

The racial inequity inherent in the present subsidy formula has been described in Sections 2.7.4 and 2.7.5. Serious consideration should be given to the redistribution of resources from the more affluent HW institutions to the poorer HB institutions. New subsidy formulas should be weighted to favor the enrollment of students from socioeconomically disadvantaged backgrounds, particularly women. The HW institutions should also be rewarded for their intake of such students. Other factors that should be weighted in the formula are success rates and intakes into science, engineering, and other technical fields. Success rates should be included to encourage efficiency and prevent excessive growth.

The analysis below provides a hypothetical example of how the subsidy may be redistributed to ensure a more equitable allocation to the HB institutions. The figures used are the state's 1989 subsidy for universities.

Total subsidy (excluding UNISA):	R1,222.8m
Subsidy to HW universities:	R947.9m
Subsidy to HB universities:	R274.9m

If the subsidy to the HW universities was reduced by 25 percent on average, the amount generated would be R237m. The cost of increasing the HB university allocation by 25 percent on average would be R55m. This would leave R182m which could be divided equally for bursaries and loans. R91m for bursaries would have funded 9,100 students fully at universities in 1989 at an average cost of R10,000. This would have represented an average increase per student of R2,020.

On the other hand if the subsidy to the HW universities was reduced by 10 percent on average, the amount generated would be R95m. If the HB university allocation was increased as above, this would leave R40m for bursaries and loans, an average increase per student of R810 over 1989 levels.

This simplistic exercise shows that a redistribution of resources from the richer HW institutions is possible with relatively high, but not unaffordable, fee increases for most students at these institutions. The impact on poorer students could be tempered by a differential pricing system whereby institutions would charge tuition fees in accordance with parental income. Differential pricing could also extend to fields of study: students entering the humanities might be asked to pay more to discourage growth in these fields.

4.5 GRANTS AND LOANS

Financial assistance for South Africa's students is crucial. The sources for such funding are the state, the local business sector and foundations, and foreign governments and foundations. One option is for the state to direct a proportion of its higher education subsidy to financial assistance for students.

Grants or bursaries may be of two types: those based on need and those based on merit. These need not be mutually exclusive. Funds generated for grants and loans may be optimally used if centralized under the authority of an Education Bank (see Section 4.5.3 below).

4.5.1 National loan scheme

Serious consideration should be given to implementing a national loan program to help students meet the costs of their higher education. Such a scheme would increase the access of all students to higher education if loans were easily available. Loans would be approved based on financial need and merit, they would carry the lowest feasible interest rate, and they would be repayable over a number of years following a student's exit from an institution.

Proposals are now being discussed to encourage South African banks to participate more actively in such a loan program. To encourage their participation, consideration might be given to some kind of guarantee of repayment by the national government along the lines of the guaranteed student loan program in the United States.

It is important that the loan be viewed as an investment in the student. Qualification for a loan should not depend on the income or credit worthiness of the student's parents. If this were otherwise, many African students would be ineligible for such loans and the goal of increasing access would be defeated.

An alternative means of establishing a national loan scheme would be for the government to give each eligible tertiary institution a renewable capital grant to establish a separate revolving loan fund. Each institution would then be responsible for administering

its own loan program without the direct involvement of the government or the banks.

If a national loan scheme were developed, special features could be built in to encourage young people to enter professions vital to the national interest. For example, the loan could be on a pro rata basis up to some portion of the loan amount for each year that a student worked in a designated profession. Persons who entered primary or secondary school teaching, for instance, might be eligible to have up to 50 percent of their loans written off, 10 percent for each year of service as a teacher.

4.5.2 National merit scholarship program

A competitive merit scholarship program would be another way of encouraging the most talented students of whatever race to pursue such professions as engineering and school teaching. The value of the bursaries should be high enough to attract the attention of such students, and the scholarship recipients should receive ample publicity. It is reasonable to expect that the corporate sector would have an interest in providing financial support for such a national program. In any event, the scholarships should be administered by a nongovernmental organization.

4.5.3 Education Bank

Consideration should also be given to establishing an Education Bank to administer a nationwide student loan program and to coordinate funds for bursaries received from government, the private sector, and foreign sources. Donors would be able to specify individuals or institutions that should benefit from their grants, but at the same time they would be encouraged to channel their funds through the Education Bank. Centralization of funds would ensure their optimum use: a single large capital base would generate more student bursaries than the present system involving a number of agencies.

4.6 DIVERSIFIED SOURCES OF FUNDING

Three possibilities exist to expand the resources available for higher education:

1. Education taxes
2. State lotteries
3. Community financing of community colleges

In order to generate funds for education, new or increased taxes could be levied on such items as liquor, tobacco, and dividend income. State lotteries could be designed for the same purpose. Finally, in many developing countries, communities pay for the

establishment and sometimes even the recurrent costs of schools. Black communities in South Africa have resisted community financing as long as Whites have had free or highly subsidized education. As Whites start to pay for education, Blacks should become more willing to do likewise, especially in rural communities.

4.7 NATIONAL PLANNING COMMISSION FOR HIGHER EDUCATION

Consideration should be given to establishing a National Planning Commission for Higher Education. The functions of such a body with respect to financing would be as follows:

1. In consultation with the Departments of Manpower and Economic Development, to develop guidelines for meeting the skills and human development needs of the society
2. To advise the state on the distribution of its resources
3. To assess the cost effectiveness of institutions and faculties
4. To oversee the Education Bank

4.8 RESPONSIBILITY FOR FINANCIAL RESTRUCTURING

In attempting to achieve the above objectives, there are important and clearly defined roles for each of the five groups of actors on the educational stage, namely, government, citizens (students and parents), the private sector, the foreign sector (foreign governments and foundations), and the institutions of higher education.

4.8.1 Government

The highest priority for the government should be the redistribution of resources from the more affluent HW institutions to the poorer HB institutions. Next, resources should be directed toward bursaries and loans for the socioeconomically disadvantaged. This will be especially necessary to ensure access of such students to the HW institutions as the latter raise tuition fees to meet their budget deficits. Third, the state could consider policies to expand the sources of revenue, including the development of a state lottery and the implementation of an education tax. Finally, the state could divert a larger proportion of its resources for research to the universities instead of to the bureaucratic and expensive parastatal organizations such as the CSIR, the HSRC, and the FRD.

4.8.2 Citizens

As the state becomes increasingly unable to subsidize higher education, some of the burden of financing has to fall on students and parents. There is no alternative. In a society in which income and wealth are distributed on a highly unequal basis, it is rational to suggest that the rich should now start paying considerably more for higher education. This will become increasingly necessary if the state starts to divert more of its resources to the HB institutions and/or continues to implement real cuts in tertiary sector expenditure.

As the rich start to pay more for higher education, it becomes politically easier to persuade less affluent communities to start contributing to education costs as well. This will be especially necessary if the community college concept is to flourish.

4.8.3 The business sector

The local business sector will remain one of the chief sources of funds for bursaries, research grants, and funds for capital expenditure for individual institutions. Differential tax incentives could encourage the business sector to contribute resources to the HB institutions and bursary funds to the Education Bank.

Some commercial banks currently operate student loan schemes. It might be more cost effective if these institutions transferred such operations to the Education Bank and offered subsidized loans to HB institutions in their place.

4.8.4 The foreign sector

Foreign governments and foundations contribute substantial funding to South Africa's education sector. Consideration should be given to using such resources for two broad functions:

1. Providing bursaries for needy students
2. Building the capacity of the HB institutions through funding of residences, libraries, equipment, and staff development programs

4.8.5 Educational institutions

The HW institutions will need to implement substantial tuition fee increases if the state adjusts its funding in favor of their HB counterparts. Such fee increases will be painful but unavoidable. The HW institutions will need to market these proposals as such rather than blame the state.

Both HW and HB institutions may wish to consider a differential fee system based on income or field of study. This would serve to keep fees low for poorer students.

Table 4.1 provides a summary of the financing functions of the five actors identified above.

Table 4.1.--Education financing: the role of government, individuals, business, the foreign sector, and institutions of higher education

Government	Individuals	Local business sector	Foreign sector	Institutions of higher education
(1) Restructuring of the subsidy formula	(1) Higher fees	(1) Bursaries	(1) Bursaries	(1) Implementing of higher fee structure
(2) Bursaries and loans	(2) Community financing	(2) Loans	(2) Resources for HB instits.	(2) Different fee structure
(3) State lottery Educ. taxes		(3) Capital grants		
(4) Research grants		(4) Research grants		

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PART II

THE TERTIARY EDUCATION SUBSECTORS

CHAPTER 5

UNIVERSITIES AND THE LEGACY OF APARTHEID

5.1 ENROLLMENTS

5.1.1 Level of university enrollments

In 1990, 302,041 students were enrolled in South African universities including those in the TBVC territories. This number represented nearly two-thirds of the enrollment in the tertiary education sector. Approximately half the students enrolled at universities in 1990 were white, and about one-third were African. Excluding the two primarily part-time distance education institutions (UNISA and VISTA), the enrollment of essentially full-time students was 169,207.

Many critics of the higher education system claim that there are too many students enrolled in universities and not enough in other types of tertiary institutions. Comparisons with other nations, however, suggest that the number of students enrolled in South African universities might be a bit low to satisfy future needs of the country. World Bank statistics show that South Africa enrolls about 9 students per 1,000 population in higher education. Around the world, the industrialized upper income countries enroll an average of 18 per thousand, middle income countries enroll an average of 12.5, lower middle an average of 8.4, and low income an average of 1.2. In the United States, the average is about 50, but half that number is in community colleges. The South African average of 9 is in the lower middle range along with countries like Botswana, Colombia, Egypt, Jamaica, and Thailand. South Africa should try to maintain its higher education enrollments at least at this level to further its national development goals.

Although the total enrollment in South African higher education may be comparable to other countries, the participation of its citizens by race is inequitable. Whereas there were 30.9 white university students per 1,000 of population in 1989, there were 2.6 Africans. This puts the participation rate of the African population at the level of low-income countries.

5.1.2 Enrollments by institution

The university subsector features considerable disparities in size. With one exception, the black universities are considerably smaller institutions than their white counterparts. The white universities' average enrollment is over 12,000, with the largest being the University of Pretoria. The average enrollment at the black universities is about 6,000, with the largest being the University of the Western Cape. English universities tend to be

larger than their Afrikaans counterparts, though in 1990 the University of Pretoria was the largest residential institution in the country with 23,000 students.

If present growth trends continue, the disparities in size between black and white institutions are likely to lessen. In general, the historically black universities are expanding their student enrollments swiftly. This is most dramatically the case with the University of the Western Cape, whose student population almost doubled in five years, from 6,772 in 1986 to 12,732 in 1990. The University of Zululand increased its student numbers by over 80 percent between 1986 and 1988. In 1989, the University of Durban-Westville reported an 8 percent increase in enrollment over the previous year. In 1990, Fort Hare's student body grew by 9 percent, and Transkei's by 10 percent.

Rand Afrikaans University proved the exception to the more modest rates of growth on the white campuses with a 5 percent increase, probably attributable to its increasing popularity with English speakers attracted by lower fees and by admission requirements lower than those of the neighboring University of the Witwatersrand. Pretoria, Stellenbosch, and Potchefstroom featured reductions in their enrollments between 1989 and 1990. For white universities generally, however, the 1980's was a decade of steady expansion. Between 1979 and 1988, the number of students enrolled at the Afrikaner universities rose from 47,254 to 63,726, while enrollment at the English-medium institutions grew from 33,306 to 40,318. UWC and UDW's expansions were consequences of decisions to open their campuses to African students following the installations of leadership committed to making the institutions more responsive to broad social demands. In their present racial composition, they are the campuses that are most broadly representative of the national population. However both universities have been obliged to impose limits on admissions since 1990. In the cases of Fort Hare and the Transkei, on the other hand, homeland government pressures have kept the doors open for larger numbers of enrollments.

5.1.3 Staff-student ratios

Historical inequities and recent patterns of expansion are reflected in the pronounced inequalities between institutions in academic staff-student ratios. In general, these correlate with divisions within the subsector: historically white universities tend to have smaller student-lecturer ratios than the predominantly black institutions. Most institutions, black and white, experienced rising student-lecturer ratios through the 1980's. Between 1983 and 1986, student numbers nearly doubled while the number of lecturers remained virtually constant. As Table 5.1 illustrates, this has resulted in especially heavy teaching loads at UWC and Transkei.

Table 5.1.—Student-lecturer ratios, 1988

University	Student-lecturer ratio
Cape Town	9 : 1
Durban-Westville	14 : 1
Fort Hare	13 : 1
Medunsa	5 : 1
Natal	11 : 1
North	18 : 1
Orange Free State	12 : 1
Port Elizabeth	12 : 1
Potchefstroom	13 : 1
Pretoria	12 : 1
RAU	15 : 1
Rhodes	8 : 1
Stellenbosch	10 : 1
UNISA	36 : 1
VISTA	37 : 1
Western Cape	18 : 1
Witwatersrand	11 : 1
Zululand	20 : 1

Source: DNE (1988: 25,89)

In 1988, ratios at the white universities varied from 8:1 (Rhodes) to 15:1 (RAU). At black universities, apart from Medunsa, the lowest ratio was at Fort Hare (13:1) and the highest at Zululand (20:1). In 1988, Medunsa employed one lecturer for every five students, a normal ratio for a medical school because of the intensive nature of instruction.

These ratios may not be an accurate reflection of the situation in particular classrooms at each institution. In the case of the larger white English institutions, staff are often spread thinly across a large number of departments. Student-staff ratios are fairly high in departments with particularly heavy enrollments. In 1991, Wits had 450 undergraduates taught by 9 lecturers. In the same year, UWC's history department registered 1,700 students, while its sociology department enrolled 1,400. The number of teaching staff in each department was nine and seven respectively. Finally, Unitra's history department has 450 first-year students taught by 6 lecturers. Overcrowded departments in this institution depend on honors students to grade papers and examinations.

5.1.4 Institutional enrollments by race

Another important higher education issue in South Africa is where African students are being educated. Of the 112,202 African students in 1990, less than 1 percent were at Afrikaans universities, 6 percent were enrolled at the English-medium

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institutions, 24 percent were enrolled on VISTA campuses, 43 percent were registered with UNISA, and the remaining 26 percent were enrolled at the historically black universities. Excluding UNISA and VISTA, there were 44,632 full-time African students in 1990; 84 percent of these were at one of the black universities.

The Afrikaans universities have made minimal progress in diversifying their enrollments by race, thus tying up a large portion of state support for higher education in institutions that are unavailable to 75 percent of the population. Since 1984, the open English-medium universities have taken a number of steps to increase the enrollment of Africans and to decrease the number of white students in their student bodies as indicated in the table below.

Table 5.2.—Racial composition of enrollment at English-medium white residential universities, 1984-90

Year	Group	Cape Town		Natal		Rhodes		Wits	
		N	%	N	%	N	%	N	%
1984	White	10,140	85.2	8,205	78.5	2,900	85.0	14,513	87.2
	Asian	276	2.3	1,298	12.4	123	3.6	1,007	6.1
	Black	316	2.7	722	6.9	282	8.3	866	5.2
	Coloured	1,168	9.8	227	2.2	107	3.1	250	1.5
	Total	11,900	100	10,452	100	3,412	100	16,636	100
1985	White	10,079	85.1	8,390	74.9	2,903	82.1	14,413	86.8
	Asian	269	2.3	1,583	14.1	140	4.0	980	5.9
	Black	338	2.9	994	8.9	374	10.6	988	5.9
	Coloured	1,154	9.7	236	2.1	116	3.3	232	1.4
	Total	11,850	100	11,203	100	3,533	100	16,613	100
1986	White	9,796	83.3	7,980	72.6	2,869	79.2	14,911	84.3
	Asian	286	2.4	1,737	15.8	169	4.6	1,180	6.7
	Black	421	3.6	1,019	9.3	445	12.3	1,341	7.6
	Coloured	1,262	10.7	254	2.3	140	3.9	246	1.4
	Total	11,765	100	10,990	100	3,623	100	17,678	100
1990	White	9,795	72.3	8,163	63.7	2,971	78.1	13,814	75.7
	Asian	467	3.4	2,547	19.9	185	4.9	1,580	8.7
	Black	1,378	10.2	1,818	14.2	514	13.5	2,531	13.9
	Coloured	1,905	14.1	275	2.1	132	3.5	308	1.7
	Total	13,545	100	12,803	100	3,802	100	18,233	100

Source: Department of National Education, Pretoria

While the English-medium universities have opened their doors to African students, in many ways they are revolving doors. In 1991, for example, 24.2 percent of the newly admitted students at Wits were African, at Cape Town the proportion was 27.2 percent, and at Natal it was 36.2 percent. Unfortunately the failure rate of these students has been high. This past year, of 963 students excluded (not readmitted) at Wits, 45 percent were African. Africans comprised 14 percent of the student body. At the white universities, it has been estimated that about 75 percent of African students fail to earn degrees, compared to 30 percent of the white students.

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5.1.5 Growing African enrollments

The numbers and proportion of Africans within the student population have grown rapidly over the past decade. By the year 2000 the number of African high school matriculants (the minimum requirement for college admissions) is expected to double and African enrollments are expected to reach 225,000, an increase of 115,000 over 1990 (6% per year). Enrollments of other students will increase at a more modest rate of approximately 1.5 percent per year, adding a total of about 30,000 students by the turn of the century.

Even if the English-medium institutions were to double their overall enrollments from 48,000 to 96,000 in order to accommodate the increased numbers of African students, this would not be adequate. Such an enrollment expansion, in any case, is unlikely. There is also evidence that drastically increasing the African enrollment at these universities might raise tension by threatening to lower academic standards, limiting educational opportunities for white students (since the universities have total enrollment limits imposed by the state), and affecting subsidy allocations.

This leaves the ten black universities and the distance universities as the institutions most likely to accommodate the increased enrollment of Africans in higher education. A projection for enrollment of Africans in various institutions follows:

- Assume 50 percent of enrollment at English-medium universities will be African 22,310
- Assume 33 percent of enrollment at Port Elizabeth will be African 1,573
- Assume 10 percent of enrollment at Afrikaans universities will be African 6,376
- Assume that UNISA and VISTA will accommodate 40 percent of total new demand of African students 46,000
- Then the remainder of the African students will be enrolled at black residential institutions . . 38,741

These estimates assume no overall enrollment growth at the white universities and a 30,259 decrease in white student enrollments in higher education generally.

One conclusion seems clear: in order to do their part in accommodating the expected increase in African students, the 10 black universities will have to expand their capacity from an average of 6,000 students to 12,000-15,000. Such expansion will require a major financial commitment.

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5.2 BARRIERS TO AFRICAN STUDENTS

While there will be increasing demand by Africans for higher education, there remain significant obstacles to their participation in the subsector. Major barriers include the following:

1. Inadequate prior academic preparation
2. Admissions policies and practices
3. Lack of financial aid
4. Rising student fees
5. Subsidy funding
6. Lack of residential space
7. Resistance to enrollment of African students

Given the relatively high participation of Whites and Indians in higher education, we conclude for these purposes that the barriers, if any, facing the populations are minor. Therefore such barriers are not discussed except in one instance, that of rising student fees.

5.2.1 Inadequate academic preparation

Forty years of Bantu Education have left Africans ill prepared for a rigorous program of higher education. The Standard Ten pass rate for Africans in 1990 was 36 percent compared to 95 percent for Indians and 96 percent for Whites. Only 8 percent of Africans taking these exams passed with a matric exemption. In addition, relatively few Africans take the matric examinations in mathematics and science, and of those taking the exams, only approximately 7 percent pass.

As a consequence of this lack of prior preparation, Africans graduate from universities at much lower rate than other ethnic and racial groups in South Africa.

5.2.2 Admission and retention policies

By law, all South African universities rely on the matric examinations as a basic requirement for admissions. They are then free to establish stricter admissions requirements if they so choose. Many have chosen to do so, especially the more prestigious white institutions. The practical effect of these stricter admissions requirements is to deny regular admissions to increasing numbers of African and coloured applicants. Such restrictive admissions policies should come under close scrutiny in the new South Africa.

Even the basic requirements, however, remain a problem. Since few Africans and Coloureds pass the matric exam compared to Indians and

Whites, this hurdle represents a major barrier to their participation in higher education.

Retention of African students is another serious problem. Since 1985 African students have comprised from 24.2 to 36.2 percent of the newly admitted students at UCT, Wits, and Natal; yet, according to the annual reports of the universities and newspaper articles, the African representation in the total enrollment at these three institutions in 1991 was as follows: 10.1 percent at UCT, 13.9 percent at Wits, and 14.2 percent at Natal. This suggests considerable dropping out of African students. In 1991, as noted earlier, 45 percent of the 963 students excluded at Wits were African.

There is general concern about the failure rate of all students at South African universities; the problem is merely more extreme for the African population. For example, a study by Hoffmeyr and Spence released in 1989 reported university failure rates for a sample student population who started their matriculation in 1980 as follows:

Table 5.3.—*University failure rate (all students)*

Degree	Sample size	% graduating	
		3 years	4 years
B.Sc	1,012	15%	18%
B.Comm	918	23%	18%
B.A.	1,768	26%	15%
Total	3,698	27%	17%

Source: Study by Hoffmeyr and Spence, 1989, compiled from HSRC Reports

5.2.3 Lack of financial aid

Available research indicates that approximately 85 to 90 percent of African university students are dependent on an annual grant (bursary) from the state in order to attend a university. Black students comprise 46 percent of the total enrollment in the universities and technikons. Of the 118,270 bursaries awarded in 1990 (including those awarded by universities and technikons themselves), 80 percent of the number and 73 percent of the rand value were awarded to black students. In 1987-88, the average grant was R1,350-2,500.

Various efforts are under way to introduce a national loan program in South Africa. The most widely discussed effort has been initiated by the Independent Development Trust. Under this plan,

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the government would administer the program and students would repay the loans through the tax system over a number of years following their enrollment in a tertiary institution. To date reactions to this proposal have been mixed.

5.2.4 Rising student fees

Student fees at South African universities historically have been relatively low. This situation has changed since 1987 as the level of subsidy to all the universities has been reduced in real terms. Most universities, both the HWU's and the HBU's, have raised fees substantially in recent years, with normal increases in the 15 to 20 percent per annum range. Current student fees at selected universities are as follows.

Table 5.4.—Student fees at selected universities

Universities	Fees (in rand)	
	1991-92 tuition B.A.	1992-93 tuition B.A.
UDW	R2,700	
OFS	3,666	
Transkei	3,666	2,400
Fort Hare	2,100	2,750
Rhodes	4,225	4,800
Zululand		6,875
North		3,450
Natal	3,800	4,815
Western Cape	2,750	3,600
Wits	4,720	5,654
UCT	4,600	5,520
Stellenbosch	3,250	
VISTA	1,940	2,200
Potchefstroom	3,440	
Pretoria	3,360	4,032

1992-93 fees based on survey by institutions

Source: Institutional publications

In the past, student fees at the HB universities have been about one-half to two-thirds of what the white universities have charged. This pattern is changing in isolated cases because of the financial pressures on all institutions. For example, the above table shows that the Unizulu expects to charge tuition of R6,875 in 1992, the highest of any university.

Not all students are accepting such increases with joy. Fort Hare had to cancel classes for two weeks in the spring of 1991 after students protested against the latest round of 20 percent increases in fees. The fact that fees are rising at rates substantially above inflation causes concern among all student populations. But it impacts on Africans most of all. As indicated earlier, some 90 percent of these students require financial assistance to attend universities because they have little or no money. Rapidly rising fees only exacerbate their problems.

5.2.5 Subsidy funding formula

State funding mechanisms may also be a barrier to the participation of African students in higher education. The subsidy to a particular institution is based, in part, on the number of FTE students who pass their courses. At certain institutions, this may temper any dramatic increase in African enrollment due to the higher failure rates of African students compared to better prepared white students. Table 5.5 shows that overall pass rates are much lower at the HB institutions.

Table 5.5.—Pass rates, 1989

Universities	Pass rate
Cape Town	82 %
Natal	82
Stellenbosch	81
Rhodes	80
Wits	80
Port Elizabeth	77
Pretoria	76
OFS	75
RAU	75
Potchefstroom	75
Medunsa	72
Zululand	67
Western Cape	66
North	65
Fort Hare	65
Durban	64
VISTA	63
UNISA	47

Source: DNE, *Educational Realities in South Africa*

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5.2.6 Lack of residential space

According to many sources, African students need more help finding living accommodations than their white counterparts, especially at the urban universities. At these institutions most students live off campus, at their homes, or in apartments of their own. For example, in 1988 Wits had 2,000 hostel places and 4,693 applications; at UCT there are 3,300 hostel places and over 14,000 students. African students attending urban campuses often live in a township outside the city and cannot afford to pay rent on a private apartment near the campus. In any case, many white landlords will not rent to Africans. This situation places a premium on campus lodgings for African students.

5.2.7 Resistance of white students and faculty concern with standards

There is continuing resistance to the enrollment of African students at the Afrikaans universities; at the same time African students are reluctant to attend these institutions. But while Africans are generally not enrolled at Afrikaans universities, the enrollment of coloured students is being embraced at a number of these institutions. RAU now competes actively with the UWC for Coloured students in the Transvaal region, and the university expects a coloured enrollment approaching 20 percent in the next few years.

Increasing tension between white and African students and concerns by the faculty with "standards" are matters of ongoing discussion at the English-medium institutions. Some faculty are indignant at the prospect of teaching increasing numbers of unprepared students. The concerns of white students have to do with a watering down of the curriculum to accommodate the needs of African students and the perceived preferential treatment of Africans in the areas of admissions, bursaries, accommodation, and academic support programs that divert resources from other "essential" programs. As various university faculties have been raising admission standards over the years, fewer and fewer Africans can meet them. Yet the number of Africans enrolled continues to increase through waivers of these requirements. As more Africans have been admitted at the English-medium universities, fewer white applicants have been accepted.

5.3 RACIAL INEQUITY AMONG FACULTY

5.3.1 Overview

South African universities are likely to experience increasing pressure to alleviate the social inequalities and authoritarian traditions entrenched in their structure, culture, and demography.

These characteristics, discussed in other sections of this report, are especially obvious in the racial composition of their enrollments, in their governance, and in their teaching methods. Some institutions have made impressive progress in reorienting their student intake, in reforming their governance, and in reorganizing their teaching programs. The racially skewed character of university staffing is likely to be a much more enduring inequity and one, which to date, universities have yet to make substantial efforts to redress. Nor are the inequalities reflected in the social composition and culture of universities limited to those related to race and class. South Africa is a sexually oppressive society and this is reflected in its educational system. After discussing the racial composition of academic and administrative staff, this section will examine the extent to which gender inequalities characterize universities.

In general, black faculty are virtually absent from the academic staff of Afrikaans-medium universities: OFS has one; PE, two; Potchefstroom, one; Pretoria, eight; RAU, two; Stellenbosch, eight (DNE 91/06). Black scholars form a small proportion of the academic staff at the historically white English-speaking universities—in each case well below the proportion of black students. The situation at Wits is generally illustrative for this group of institutions. Out of a total of 849 in 1991, 74 academic staff are black (50 African, 15 coloured, and 9 Indian). Of these, the heaviest concentration is in the science faculty (25), followed by 24 in the arts faculty. Forty-three are lecturers, 9 are senior lecturers, 4 are professors, and the rest hold junior positions. At UCT, out of 760 full-time academic staff, 46 are black (24 African, 24 coloured, and 8 Indian). According to the UCT calendar, Blacks are largely employed in the faculties of arts and social sciences. Of senior posts at UCT, Blacks hold 19 of 46 senior lecturer or professor positions—a higher proportion than at Wits. One UCT deputy vice chancellor is an African woman, Mamphela Ramphele, a social anthropologist. Natal employs a larger number of black academic staff of whom Indians form the majority. On the white English campuses, Rhodes has the smallest proportion of black academic staff, 12 out of 275.

Black staff are better represented at historically black universities, but racial inequalities and imbalances still persist. During the 1960's, UWC, UDW, Fort Hare, North, and Zululand recruited their staff mainly from the Afrikaans-medium universities, with most of the rest drawn from their own graduates. To some extent this remains the case: at the University of the North, of the 273 academic staff listed in the calendar, 127 are white and 145 are African. Apart from the 115 faculty members who received their highest degree from the University of the North, alumni of UNISA (47), Pretoria (32), and Potchefstroom (21) are prominent among the remainder of the staff. Out of 71 departments, 43 are chaired by Whites trained at Afrikaans universities; there are only 22 African department heads. Of the 145 African academic

staff, 25 hold doctorates and 33 have a master's degree. The 1990 Fort Hare calendar indicates a similar picture: out of 221 faculty, 143 are white (DNE figures are slightly different), 39 of the 41 professors are white, only 3 out of 54 departmental heads are African. UNISA, Stellenbosch, and Pretoria have supplied postgraduate training for a substantial proportion of the Fort Hare staff (67 out of 221). However only 10 of the 78 African academic staff at Fort Hare have a doctorate.

UWC and UDW also have large numbers of Whites among their academic staff; otherwise their faculty members are coloured and Indian predominantly. In both cases, a spate of recent appointments has helped to alter the intellectual ethos of each institution. UWC has been especially successful in recruiting staff from the exile community and from English-medium universities. The UWC history department is comparable in its qualifications and distinction to those at Wits and UCT.

To summarize, Africans are especially badly under-represented within the academic staff of universities. Even at the historically black universities, they tend to be outranked by white staff and to be underqualified. In general they are concentrated in arts and social science disciplines. They are unevenly represented in science departments, and they are virtually absent from the faculties of engineering, commerce, dentistry, and agriculture.

5.3.2 Barriers to racial equity

Attempts to redress inequality will be difficult. Tenured white staff at black institutions cannot be dismissed easily, and financial restraints inhibit the degree of expansion that would substantially reduce their proportions. Some conservative staff can be expected to leave voluntarily, especially if financial provision is made for early retirement. For example a mixture of ideological pressure and financial inducement was responsible for the departure of several key figures at UWC. But, again, sufficient resources to enable early retirement on a large scale are unlikely to be available for some time.

If funds were available, there should be a number of new positions at the growing black universities, which have too little staff to accommodate their enrollments adequately. In addition, the newly "freed" institutions like UWC, Fort Hare, and the University of the North have a particular zeal and commitment to attract African and coloured faculty. These institutions are seeking to overthrow Bantu Education and its after-effects.

In any case, even if leadership at black universities succeeded in creating a large number of vacant posts, they would encounter considerable difficulties in filling them. The rather low rates of postgraduate enrollment at the M.A. and Ph.D. levels at all South

African universities mean that in many disciplines, especially in the humanities and social science, the profession is failing to reproduce itself.

Certainly Africanizing the faculties of the universities will remain a problem until the pool of university educated Africans becomes larger. Only 63 Africans received Ph.D. degrees from South African universities in 1989. Not all of these went into higher education. There is a community of older expatriate scholars who might be attracted back to South Africa. There is also a pool of younger people currently earning degrees in the United Kingdom, Canada, and the United States. The fact remains, however, that the number of such persons is inadequate if one were serious about Africanizing the academic staffs at universities.

In their efforts to recruit well-qualified black staff, the HBU's can expect to confront increasing competition from the English-medium HWU's. Both Wits and Cape Town have allocated resources to create "supernumerary" posts to be filled by young black scholars. Departments apply for one of these posts after identifying a promising candidate. In most cases the appointment has taken the form of a tutor recruited from the postgraduate population. UCT has recently expanded this procedure with the adoption by council of an equal opportunity employment policy. The university is now committed to a program of affirmative action in which it will do "everything in its power to help prepare black persons and women to become equal competitors—for every post." The policy provides additional posts in academic and administrative departments for "appointment-worthy" candidates "not recommended for the particular vacant post under consideration." The university will seek to create graduate and postdoctoral fellowships with the goal of developing the careers of Blacks and women. Departments will institute search procedures directed at identifying black and female applicants and will be required to report on their efforts in this respect. Finally, the university will appoint an executive officer to monitor the progress of affirmative action programs.

5.3.3 Administrative staff

Numerically, Blacks are better represented in university administrations than they are on the faculty, but once the data are analyzed, a predictable pattern emerges. Whites virtually monopolize the most senior positions at the historically white universities and at VISTA. As might be expected, Coloureds and Indians are reasonably represented in all but the most senior administrative positions at UCT and Natal, but both these institutions have yet to employ significant numbers of Africans in other than unskilled and junior capacities.

5.4 GENDER IMBALANCES AMONG STUDENTS AND FACULTY

Student enrollment in all undergraduate courses is nearly 3:1 in favor of men. As the table below shows, the disparity is less pronounced among full-time students.

Table 5.6.—*Full-time equivalent enrolled students at South African universities by sex and course level, 1988*

Undergraduate	M	88,028
	F	73,204
Honors	M	11,469
	F	7,555
M.A-Ph.D.	M	5,189
	F	2,018

Source: DNE, NATED 02-215 (91/01)

Men predominate in most fields. This is the case even in education, despite the larger number of women in the teaching profession. Among teachers, however, there are more men in the upper secondary positions, for which a university qualification is a requirement. Women exceed men only in home economics, languages, and psychology, and they represent over one-third of enrollment in art, health care, philosophy, and the social sciences. Women are especially badly under-represented in agriculture, architecture, commerce, engineering, law, and mathematics.

Women are also poorly represented in all universities at the level of governance and senior administration, and within the teaching staff of academic departments. In the table below, note the example of Cape Town, one institution which is particularly concerned with developing measures to alleviate gender inequalities.

Table 5.7.—UCT academic staff by status and sex, July 1991

	Female	Male	Total
Professors	5	159	164
Associate Professors	15	109	124
Senior Lecturers	47	163	210
Lecturers	60	107	167
Asst. Lecturers	44	20	64
Part-time Lecturers	20	26	46
Teach. Assistants	116	140	256
Junior Res. Fellows	1	2	3
Tutors	66	129	195
Others	8	29	37
Total	382	884	1,266

Source: UCT Establishment Section

Women working or studying at South African universities are also affected by a combination of institutional discrimination and gendered social assumptions. The latter have attracted considerable public attention recently as a consequence of investigations into sexual harassment at UCT and Wits. These two institutions are the first universities in the country to address the issues systematically. The abuses they highlighted are probably pervasive. The Wits report has yet to be made public. UCT published the findings of a committee led by Mamphela Ramphele in October 1991. Though sexual bullying was by no means confined to relations among students, the problems appeared to be especially concentrated in residences. The UCT committee found several cases of female students being compelled to provide domestic services for male students in return for food. "Normal" traditions on campus included groups of men chanting "on your backs," men throwing water bombs at fat women, and groups of men sitting outside dining halls rating women on scores of one to ten. Such behavior was common among both white and black male students, though in many cases abusive treatment of women was defended by black students as "part of African culture." They were highly critical of university efforts to check sexual harassment as "an arrogant attempt to impose western standards." The report argues that the issues of sexual oppression have been overshadowed too frequently by the fight against apartheid. In response, UCT is drawing up a code of conduct and planning a program of reeducation for men and women.

5.5 INEQUITY OF RESOURCES AT BLACK UNIVERSITIES

5.5.1 Underqualified academic staff

Faculty at the HBU's are underqualified compared to the academic staff at the mainly white universities. Smaller proportions hold higher degrees, and a large group are trained at a very narrow range of institutions. Only a small number undertake research or publish in leading scholarly journals. Historically these universities recruited from a shallow pool. Under the constraints of Bantu Education, they had neither the inclination nor the resources to attract the best qualified personnel.

This is less the case now because, under new managements, some black institutions have made energetic efforts to recruit staff from the English-medium HWU's and from among expatriate South Africans; UWC and UDW have been especially successful in this regard. Even so, black universities are still heavily burdened with senior staff who were recruited in uncompetitive circumstances in the 1960's and 1970's.

Moreover, even if the will at the top has changed, many of the disincentives remain. The HBU's cannot offer comparably attractive working conditions. Their facilities are poorer and their teaching obligations are heavier. The universities can compensate for this by offering senior positions to relatively inexperienced applicants, but otherwise they have to depend on idealism and social commitment.

5.5.2 Deficiencies in facilities and equipment

Linked with the issue of strengthening the qualifications of HBU faculty is the need to improve facilities. With one or two exceptions, these universities do not possess research libraries. In many cases their resources are woefully inadequate even for teaching undergraduates. Certain institutions are also badly equipped to train students in the natural sciences, though here the record is more uneven.

5.5.2.1 Libraries

This subsector demonstrates considerable imbalances in resources. A comprehensive picture is beyond the scope of this report, but the general pattern is evident from disparities in library size, measured in numbers of volumes. The libraries at HBU's tend to be smaller than those at the HWU's, with a narrower range of periodicals. Many black universities cannot afford subscriptions to the more expensive journals that are important in the areas of science and technology. The overall disparity in holdings is partly attributable to the more recent foundation of the HBU's, but not entirely. Fort Hare, comparable in terms of size and age to

its neighbor, Rhodes, has a library of less than half its size. To an extent, computerized networks such as UNINET can help alleviate such disparities if black universities can gain access to HWU library catalogues. But given the expense and inconvenience of interlibrary loan programs, such facilities are poor compensation for badly stocked libraries.

The picture is not all bleak. UDW is exceptional among HBU's for the quality of its library, which contains 160,000 volumes and an impressive range of current periodicals taking up an entire floor of a seven-storey structure. It also has an excellent historical records section which has been enriched recently by a series of private bequests. Elsewhere, small book collections are also sometimes housed in impressive buildings. UWC has just completed the construction of a new library block. It now has a well-designed and well-equipped building with ample study space. UWC researchers also have access to major research libraries in the vicinity. Finally, the library resources at UFH are relatively rich as a consequence of its much longer institutional existence than the other HBU's.

It should be pointed out that libraries across the subsector have been affected by reductions in state funding and the failing exchange value of the land. Between 1982 and 1985 (before the state's subsidy cuts were introduced), the book purchases of a sample of eight universities were reduced from an annual acquisition of 120,000 titles to 80,000.

5.5.2.2 Laboratory equipment

Certain black universities are especially disadvantaged in terms of laboratory equipment in science faculties. At the University of the Western Cape, for example, we were told by the Dean of Science that a recent inventory found that the average age of equipment was 15 years old, with many of the microscopes used by first- and second-year students dating back to the university's establishment in 1969. At that time laboratories were equipped based on the assumption that class numbers would not exceed 25. Currently all practical sessions are run twice each day to accommodate classes that in the first year can number 200 students. In certain departments such as microbiology, students do not have access to computers and hence are unable to learn how to manipulate data.

In general, equipment shortages make it difficult for both teaching and research to keep abreast of technological change. This is especially true in the field of electronics. The faculty's equipment budget for 1991 was R60,000, a large proportion of which is spent on maintenance. Instructors and research students within the UWC science faculty are also affected by the absence of specialized journals in the library. In comparison to staff and senior students at certain other black universities, though, they are relatively well off. Given the proximity of UCT and

Stellenbosch, postgraduates and staff have access to research oriented libraries, and the three Western Cape institutions share certain off-campus scientific facilities.

The Principal of the University of the North reports a situation in his science laboratories very similar to that at UWC. Shortages and inadequacies of equipment are especially distressing in the biology and chemistry departments. With enrollment doubling over the past three years, additional resources have been expended on adding residential accommodation and classroom space at the expense of support for the laboratories and the library.

In both these institutions, deficiencies of equipment and facilities can be partly explained by recent sharp increases in student numbers. The 1959 generation of HBU's received generous government funding initially—they were, after all, showcase apartheid projects. Fort Hare possesses what is, according to its latest report, a "magnificent department of chemistry building," and its department of zoology, in 1990, was able to donate a "large number" of redundant microscopes to local schools. But generous rates of capital expenditure in the 1960's have not been maintained, and Fort Hare scientists paint a very similar picture to their colleagues in the Western Cape and the North of laboratories which are barely equipped to teach basic science to undergraduates. The Fort Hare science faculty spends 80 percent of its budget on materials. There has been no expenditure on capital equipment since 1973. Undergraduate classes are repeated three to five times because of equipment shortages, and there is a student-lecturer ratio of approximately 40:1.

The University of the Transkei has benefitted from being a key component of the nationalist program of the homeland's government. Its ambition to develop as a comprehensive institution has received generous government endorsement. Quite apart from underwriting the construction of the medical school, the government provided R9m for an extension to the science laboratories.

At Unibo, however, the problem with science does not relate to shortages of equipment, but rather a lack of students. Each year 200 to 300 spaces are reserved for science students, but the faculty never receives more than 50 applications. In response to this situation, the faculty initiated a one-year science program for matric students, enabling students who have matriculated without science or math to make up these subjects to qualify them for enrollment for a B.Sc. Despite the success of this program over its four years of existence, the Dean has now been told to close it down. The science labs are needed to accommodate fine arts students presently taught in rickety prefabricated structures whose lifespan ends in 1993.

UDW has unusually good science and technical facilities including a new pharmaceuticals laboratory that has enabled it to double its

first-year pharmacy intake—a necessary consequence of the rationalization process that has closed down the pharmacy department in the neighboring University of Natal. According to the FRD survey, UDW was the only university among 12 monitored between 1984 and 1988 that succeeded in increasing its science student intake over arts and social science.

5.5.2.3 Residences

All universities which enroll large numbers of African students have recently experienced a rising demand for residential accommodation. Here it is more difficult to make distinctions between the HBU's and the HWU's. Both are attempting to expand their residences as a consequence of increases in African student enrollment. With the exception of Rhodes and Natal Pietermaritzburg, the white universities have not been predominantly residential; most of their students lived in the vicinity and commuted to classes each day from home. At Wits, however, shortages of accommodation were so acute in the beginning of 1991 that African students arriving from rural areas began their enrollment at university by sleeping in classrooms.

At Natal, Wits, and UCT, most students who live in university residences today are black, mainly African. Adequate accommodation is recognized as a vital factor in ensuring that students cope with course demands, and the three main English HWU's have embarked on ambitious programs of residential expansion. UCT, for example, recently bought an apartment block for R40m. UDW increasingly houses African students in its residences, and it too has begun to purchase nearby apartment blocks. In the past, UWC has tended to lodge its students in homes in the local community. This process has now reached its limits, and the university needs to construct residences for its growing African student body.

With its recent expansion, the University of the North appears ready to accommodate the largest residential student population in the country, 7,500 students in 1992. Unlike other institutions, the rural HBU's have to be mainly residential because their student catchment area is geographically more extensive than that of the urban institutions. Situated amid desperately poor communities, they cannot rely on lodgings or rented premises. Any future expansion of these institutions will have to include generous provision for the construction of residences.

5.5.3 Conclusion

There are considerable disparities in facilities, resources, and equipment between the predominantly black and the historically white universities. To be sure, they do not suggest a uniform picture of deprivation within the black institutions. In certain cases, these universities have been affected by recent expansion rather than an entrenched tradition of financial discrimination.

Certain of them have been the beneficiaries of politically motivated facility expansion. Even so, in most black universities, shortages of equipment make teaching even basic science courses difficult and more advanced work almost impossible.

5.6 CURRICULUM DEVELOPMENT

5.6.1 Overcoming Bantu Education

Curriculum development at the white and black universities has not followed the same path over the past thirty years. The white universities have had a strong history of institutional autonomy. Within the framework of the general policy of apartheid, they were permitted to pursue their own aims, which included matters of curriculum. For the most part, curriculum development at the white universities developed within the accepted western traditions of inquiry, pedagogy, research, and so on.

Such autonomy has not been true at the African universities until quite recently. For the past thirty years, one of the objectives of the government for Bantu Education has been to control all aspects of higher education for Africans, including curriculum. The result was a stifling of curriculum development, criticism, and debate, and a stunting of programs in science, engineering, and math. Because the faculties at Durban and UWC had more autonomy, matters are currently not as dire at those institutions. More generally, concepts of academic freedom, debate, and criticism are finally beginning to find their way as state control has eased and as new leadership has been appointed.

5.6.2 Africanization of the curriculum

Africanization is one of those elusive concepts on which it is difficult to gain consensus. At the black universities, it seems to mean overthrowing Bantu Education and establishing a curriculum, co-curriculum, research, and public service agenda that is in tune with the needs of a new South Africa, particularly its African population. An aspect of this strategy involves curriculum change and the employment of persons, including a critical number of Africans, committed to the new missions of the black universities. Defined in this way, the Africanization process is just now beginning at the HBU's. Serious discussions of purpose are under way at Fort Hare, Transkei, and the University of the North where Africanization can be expected to affect the curriculum mostly in the social sciences and humanities.

It is more difficult to know what Africanization will mean at the white universities. If similar in outlook to Rand Afrikaans University, the Afrikaans institutions will not be much affected by any concept of Africanization. That is to say, RAU has a clear

image of itself and its destiny as an Afrikaans university which precludes any Africanization.

The effect of Africanization at the English-medium universities is more problematic. Already there have been changes in the patterns of enrollment at those universities. Yet the faculties will remain overwhelmingly white, and the curriculum, research, and public service agendas will not change substantially just because more black students attend them.

CHAPTER 6

UNIVERSITIES AND NATIONAL DEVELOPMENT

6.1 PROFESSIONAL TRAINING AND RESEARCH CAPABILITY

6.1.1 Meeting manpower needs

Tertiary level institutions are expected to produce a significant number of graduates to meet the country's medium- and high-level manpower requirements. One of the issues that the Team considered was whether there were too many students enrolled in higher education in South Africa. The conclusion was that there were not. Rather, there are too few students enrolled in technikons, and too many students enrolled in arts and humanities in universities.

The percentage of university students majoring in the sciences, math, and engineering has been decreasing in recent years: engineering from 8 percent 10 years ago to 4 percent today, the physical sciences from 15 to 10 percent, and medicine from 8 to 5 percent. In looking toward its future as an advanced, technological nation, South Africa has a need to develop more students in math, engineering, and the various sciences. Improving the teaching of science and math at the primary and secondary levels, especially at the DET schools, will greatly assist this effort. Upgraded instruction in these fields at the black universities will also be essential.

As well as failing to train sufficient numbers of scientists and engineers, South Africa is also short of qualified managers. According to a report in *Business Day*, "by the turn of the century South Africa will need between 100,000 and 120,000 new managers" (26 November, 1991). The two main business schools, Wits and UCT, have the capacity to provide a maximum of 400 MBA graduates a year. UNISA also makes an important contribution, functioning in liaison with a number of private colleges which use its syllabi in part-time programs. UDW and RAU also maintain graduate business schools, but even when their programs are taken into account, there is still an acute shortage of advanced managerial training facilities. The situation is all the more alarming when one considers the racial composition of the professions. At present, only 4 percent of South African managerial positions are held by blacks. As companies begin to Africanize their hierarchies, the volume of demand for executive training will expand very rapidly.

6.1.2 Shortage of African graduates in professional fields

As described in the last chapter, black students encounter a number of barriers to participating in higher education. In the case of professional fields, the barriers are even higher. Many of these fields require higher scores on the matric exam, a solid background in math and science, and a good grasp of English. Due to Bantu Education, many Africans and Coloureds do not have the background to complete a program of specialized studies without considerable assistance. Few Africans complete courses of study in such areas as engineering, computer science, natural sciences, health sciences, and commerce.

In 1987, less than 2 percent of the 1,544 graduates in engineering and engineering technology in all of South Africa were Africans—approximately 20 students. Only 4 percent of the graduates in business were Africans, and there were only 13 computer science graduates. The situation has not improved dramatically since then. For example, the Wits Business School enrolled 6 Blacks in its 1991 full-time MBA class of 176 students.

As the table below shows, few graduates of the black universities earn degrees in science and mathematics.

Table 6.1.—*Graduates in science and math at selected historically black universities*

University	Number	% of total diploma, certificate, and degree recipients
Bophuthatswana	3	-
Durban-Westville	105	9
North	48	4
Western Cape	36	2
Zululand	18	2

Source: Compiled from annual reports of institutions

Thirty-five percent of the majors at Bophuthatswana were in education, with another 27 percent in business or law. Durban-Westville, a university designated for Indians in 1960, graduated 9 percent of its students in the sciences and math, a percentage comparable to the traditional white universities. But this institution also had a typically large percentage of its majors in the social sciences and education.

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The same situation exists on the graduate level. In 1989, only 5 percent of master's and doctoral students were African. In that year, Africans received 367 master's degrees and 63 doctorates from 18 South African universities. Of these, only 63 of the master's and 16 of the doctorates were in the areas of agriculture, business, computer science, engineering, health sciences, life and physical sciences, and mathematics. None of the doctorates was in agriculture, business, or computer science.

The situation in the health field is better for Blacks than in other specialized areas because of the existence of Medunsa, the Medical School of South Africa. Medunsa was established to train black health practitioners. As shown below, except in nursing it educates the vast majority of black students enrolled in the health practitioner area.

Table 6.2.—Medical school enrollment: black students, 1988

University	Medicine /surgery	DDS	Nursing	Vet	Pharmacy	Other
UCT	39		2		7	10
Durban		3		4		15
Westville						
Medunsa	650	166	162	53		164
Natal	242		32		1	19
North			73		126	17
OFS			1			
UPE			19		2	
POTCHE			10			
Pretoria					2	1
RAU			4			
Rhodes					27	
UNISA			3,093			
UWC		28	2		36	11
Wits	134	15	35		17	82
Zululand			164			
Total	1,065	212	3,597	57	218	319

Source: National Ministry of Education

Sixty-one percent of Blacks in medicine, 78 percent in dentistry, 93 percent in veterinarian medicine, and over half of the others were enrolled at Medunsa in 1988.

Aside from Medunsa, most of the opportunities for study in professional fields are at the traditionally white universities. But just at the point when many more Africans are applying to these

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institutions, all of them are raising their minimum requirements for admission, particularly in the science faculties. The case of the University of Cape Town is instructive. In 1990, the science faculty's concern for "too many marginal students . . . being admitted" led to more demanding admissions standards (Faculty of Science Annual Report to the Senate, 1990). Relatively few Africans had gained admission to the faculty of science even before these new admissions criteria were adopted. It should be noted, however, that the increase in applications by Africans has been substantial over the past few years. The table below shows applications by race to the faculty of science in 1990 and 1991.

Table 6.3.—Applications to UCT faculty of science

	Black	Coloured	Indian	White	Total
Applications 1991	808	361	294	582	2,045
Applications 1990	571	306	270	483	1,630
% of all applications 1991	40%	18%	14%	28%	
1990	35%	19%	17%	30%	
Offers 1991	115	156	151	355	777
Offers 1990	131	115	150	284	680
% of all offers 1991	15%	20%	19%	46%	
1990	19%	17%	22%	42%	
Offers as a % of applications 1991	14%	43%	51%	61%	38%
1990	23%	38%	56%	59%	42%
Registrations 1991	44	101	22	174	341
Registrations 1990	52	73	24	168	317
% of all registrations 1991	13%	30%	6%	51%	
1990	16%	23%	8%	53%	
Registrations as a % of offers 1991	38%	65%	15%	49%	44%
1990	40%	63%	16%	59%	47%
Registrations as a % of applications 1991	5%	28%	7%	30%	17%
1990	9%	24%	9%	35%	19%

Source: Faculty of Science Annual Report to the Senate, 1991

Note that applications from Africans increased 41 percent in this period to 808, the largest group of applications. White applicants also showed a healthy increase. Thirty of the African students

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qualified for regular admissions, 4 percent of those who applied in 1991. Overall, only 14 percent of the Africans were offered any kind of admissions compared to 43 percent for Coloureds, 51 percent for Indians, and 61 percent for Whites. Finally, 44 of the 115 Africans with offers (38 percent) accepted enrollment in the science faculty in 1991. Overall, 44 percent of those with offers ended up registering for classes.

South Africa has an acute need to develop manpower in the areas of math, science, engineering, and management. To this end, the government in the new South Africa will have a strong interest in the education of Africans. Comprising 70-75 percent of the population, this group represents an untapped resource in helping the country meet its future needs.

6.1.3 Research

Several South African universities have developed impressive research capacities which place them in the forefront of African institutions generally. In fact a large proportion of the continent's scientific, technical, and medical research is concentrated in South Africa. Continuing support of this research will be essential to the country's future economic growth.

The argument that the research facilities at certain universities constitute vital national resources deserves to be taken seriously. It should not, though, be understood as an excuse to delay making these institutions more accessible and more democratic. Nor should it imply that other universities should not develop their own research programs. Such development must be a key ingredient in the effort to redress the inequalities between the historically white and black universities.

Even at the leading institutions, research is unevenly concentrated in certain faculties and disciplines. The relatively small numbers of postgraduate students producing research dissertations in the humanities and social sciences has serious implications for the future staffing of all universities, and particularly for any future efforts to improve the quality of teaching at the HBU's. The main research centers are avowedly committed to boosting their postgraduate enrollment. It would be a pity if resources allocated to achieve such a goal were used to reproduce the current racial inequalities in postgraduate registration.

The country's political isolation has broken virtually all linkages between South African universities and those elsewhere on the continent. A few disciplines have made pioneering efforts to construct professional associations which bring together South African academics and those of neighboring countries: the Association of Sociologists of Southern Africa is one of these. With the progressive loosening of the academic boycott, personal contacts between institutions across South African borders are

beginning to open. These contacts will be essential to the future of the country's university research.

6.2 DISTANCE EDUCATION

Though it is often not a first choice, distance education has been a convenient source of higher education for many South Africans. The two distance institutions, the University of South Africa (UNISA) and VISTA, offer degrees mostly in education, the social sciences, the humanities, and law. In 1990, 43 percent of the overall population of university students and 64 percent of Africans in higher education were enrolled at these two institutions.

6.2.1 The University of South Africa

More African students are registered at UNISA than at any other university. By 1989, with 39,935 African students, 215 Chinese, 5,019 coloured, 9,678 Indian, and 53,525 white enrollments, UNISA had become a predominantly black institution with respect to its student population. This development represented a rapid shift in the composition of its student demography. In 1974, of its 34,000 students, 27,000 were white, and 4,000 were African.

In terms of its staff and governance, on the other hand, UNISA remains an essentially white university. In 1991, 19 of the 22 members of its all-white council were Afrikaners. Of its nine most senior officers, seven held degrees from the University of Pretoria. DNE figures indicate that of its 1,160 permanent staff, 1,115 were white and 38 African. In 1991, its 6 deans were all trained at Afrikaans-medium universities, as were 57 out of 68 department heads. Though the majority of its students are instructed in English and many of its teaching staff are English speaking, in many ways UNISA is an Afrikaner institution.

UNISA was founded in 1873 as the University of Good Hope. It only assumed its role as a correspondence university in 1946. It is headquartered in Pretoria, which is where all the teaching staff are located. There are branch libraries and, in some cases, study centers in Johannesburg, Cape Town, Durban, Pietermaritzburg, and Windhoek. UNISA's main library is one of the largest in South Africa, with holdings of 1,100,000 volumes and 9,000 periodicals.

Study is in English or Afrikaans; students may opt for either. Most of the teaching is undertaken through correspondence. Students receive a study guide for each module of their chosen courses, a bound set of short essays written by UNISA staff that introduce the literature and themes of the module. In the first year, a course contains two modules; in the second year, three; and in the third, four. The study guides are published in the two official languages and revised at least once every three years;

they are serviceable, but hardly attractive. Students complete assignments which are marked and returned. They write examinations in regional centers. Most departments also offer a limited amount of contact teaching through two week-long "practical courses." These are not compulsory, but students are encouraged to attend them. The practicals are held twice a year in the regional centers. Departments also send out "tutorial letters" about twelve times a year. The letters supply guidance for completing assignments and examination preparation, general comments, reading notes, and so forth. In addition, students can obtain additional advice and instruction from their tutors through correspondence and telephone calls. There are prescribed and recommended books for each course. Students must purchase the prescribed books; they may borrow the recommended titles from the library.

UNISA is cheap and accessible compared to the residential universities. The only admission requirement is a matriculation exemption. In 1991, a complete B.A. degree (ten courses) cost R3,600—less than a third of the tuition costs at most white universities. Prescribed books add another R1,000 to this sum, in addition to the postal costs of returning library books.

In comparison with distance institutions elsewhere, notably the British Open University, UNISA teaching makes very little use of audiovisual material and does not enjoy the support of a public TV network. For the last two years, though, it has broadcast lectures on the radio, and certain departments also distribute audiocassette tapes. But in general UNISA has to use materials and methods that can reach students living in poor communities without access to television.

As might be expected, UNISA completion rates are much lower than those of residential universities. A significant proportion of its students drop out before the end of the year. In the department of political science, for example, out of a first-year enrollment of 800, only 500 took the year-end examinations. Overall, the pass rate was 35 percent.

As one of the largest correspondence universities in the world, UNISA represents a remarkable achievement. For a long time it has been a major point of access for Africans to higher education, not just in South Africa, but throughout the region. Indeed, one member of the TESA team, the Dean of Education at the University of Zimbabwe, was himself once a UNISA student and spoke warmly about the quality of the instruction he received. Among its distinguished African alumni, UNISA can count several generations of political prisoners whom it has taught during their terms of confinement.

On the other hand, UNISA must bear some of the historical responsibility for the inferiority of the teaching at the HBU's. UNISA was the examining body for the ethnic universities and

determined their syllabi for the first decade of their existence. After that UNISA study guides were one of the staple sources of instructional material.

Recent events suggest that changes may be forthcoming in UNISA's hitherto conservative and autocratic administration. In 1990, UNISA recruited to its security department a former employee of the Johannesburg City Council who had resigned after it was revealed that he had been employed to spy on black trade unions and political bodies. UNISA's academic staff association (which has never received formal recognition from the university), in conjunction with the local representatives of NEHAWU (National Education and Health Workers' Union), organized a series of well-attended public meetings in protest. After an extensive series of negotiations, the UNISA council agreed to rescind the decision to employ the former JCC informer.

6.2.2 VISTA University

VISTA is the only specifically African university established outside the homelands. It was founded in 1981 as a nonresidential and decentralized institution whose mission was (and still is) almost exclusively to serve urban Africans, mainly in the Transvaal. It consists of a network of campuses located in the urban African townships: Soweto, Mamelodi (Pretoria), Sebokeng (Vaal Triangle), Batho (Bloemfontein), and Zwile (Port Elizabeth). Prior to 1986 it was not allowed to admit non-African students without the minister's written permission. Most students at VISTA are registered for the part-time secondary teacher's diploma and some are involved in correspondence courses.

6.2.3 Future expansion

There is general agreement that distance instruction is likely to remain an outstanding feature of the South African university system for the foreseeable future. It is widely felt, though, that because of its significant contribution to the process of democratizing access to tertiary education, distance education should be an activity undertaken by a larger number of universities, for example through regional consortiums. Distance education is too important to be monopolized by one or two institutions.

6.3 FINANCE

6.3.1 Inequalities in institutional resources

A few regional comparisons may illustrate the inequality in the resources available to South African universities. In the Western Cape, for instance, UWC's enrollment in 1985 was 62 percent of

UCT's, but its total resources were only 29 percent of those available to UCT. In 1989 the UWC enrollment had increased proportionally to 88 percent, but its funds increased to only 36 percent. As Table 6.4 shows, a similar situation exists with respect to UWC and Stellenbosch.

Table 6.4.—*University funds and enrollments: some regional comparisons*

	Enrollments		Funds	
	1985	1989	1985	1989
Western Cape				
UWC (as a proportion of UCT's)	62	88	29	36
UWC (as a proportion of Stellenbosch)	55	86	86	37
Natal				
Zululand (as a proportion of Natal's)	21	43	25	24
Zululand (as a proportion of UDW's)	37	75	70	55
UDW (as a proportion of Natal's)	57	57	35	44
Northern Transvaal				
North (as a proportion of Pretoria's)	30	32	27	25

Source: Computed from Bunting, 1991

In Natal, Zululand's student enrollment as a proportion of Natal's increased from 21 to 43 percent between 1985 and 1989, but its available funds declined from 25 to 24 percent. Zululand fares even worse against UDW, which, in turn, compares favorably against Natal in terms of the proportional growth of enrollment and funds. Finally, in the Northern Transvaal, the University of the North's enrollment growth (as a proportion of Pretoria's) increased by 2 percent, but its available resources fell by a corresponding 2 percent.

6.3.2 Sources of income

Universities have six sources of funds: government subsidies; tuition fees; government grants and contracts; private gifts and contracts; investments; and auxiliary enterprises such as residences and canteens. Major differences are apparent in various

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institutions' capacity to generate revenue from each of these fund categories. Except as noted, the figures in the following paragraphs all relate to 1989.

Medunsa (67 percent), Zululand (65 percent), and VISTA (63 percent) derived a large proportion of their funds through the government subsidy compared to Cape Town (39 percent), Durban-Westville (41 percent), Rhodes (45 percent), and Stellenbosch (42 percent). The mean figures for English historically white (EHW), Afrikaans historically white (AHW), and historically African (HA) universities were 46 percent, 52 percent, and 63 percent respectively. The University of the Western Cape received 53 percent of its funds from the government subsidy.

Three institutions, UNISA (23 percent), Western Cape (23 percent), and North (20 percent), derived a relatively large proportion of their revenue through fees. In 1990, fees generated about a quarter of Wits' revenue, R52m. UCT's income from fees was about the same, R51m in 1990, representing 26.5 percent of the operating budget, 7.5 percent more than in 1985. At the other end of the spectrum, in 1989 Medunsa received only 5 percent of its funds in this way. The mean proportion for EHW, AHW, and HA universities, excluding Medunsa, was 15 percent, 14 percent and 17 percent respectively.

Government grants and contracts include funds received for work undertaken on behalf of the government or government-sponsored agencies such as the CSIR and the HSRC. The University of Durban-Westville received an unusually large proportion of its income from grants and contracts in both 1988 (22 percent) and 1989 (36 percent). At the low end of the spectrum were the Universities of the Western Cape and VISTA (both 1 percent), and the Universities of the North, South Africa, Zululand, and Medunsa (all zero percent). The mean proportions for EHW, AHW, and HA universities were 5 percent, 4 percent, and 0.25 percent respectively.

The EHW universities, especially Cape Town (15 percent), Natal (19 percent), and Wits (18 percent), as well as Stellenbosch, obtained a relatively large proportion of their income through private gifts and research contracts. The lowest figures in this category were for UDW (1 percent) and the North (3 percent). The mean percentage for EHW, AHW, and HA universities were 16 percent, 10 percent, and 8 percent respectively.

VISTA (17 percent), Stellenbosch (15 percent), and Cape Town (15 percent) were at the upper end of those receiving income from investments, while Medunsa (4 percent), Zululand (2 percent), and Potchefstroom (1 percent) were at the bottom. The means for the EHW, AHW, and HA were 9 percent, 9 percent, and 8 percent respectively.

Rhodes University (12 percent) and the University of the North (10 percent) were the largest beneficiaries from their auxiliary enterprises, while UNISA (1 percent) and UDW (2 percent) derived relatively little from this source. The mean proportions for EHW, AHW and HA universities were 7 percent, 5 percent, and 6 percent respectively.

6.3.3 State subsidies

Being public institutions, South African universities depend on government funding for a major part of their operating costs. Since 1984 the state has employed a subsidy formula (SAPSE 110) theoretically intended to reward universities for postgraduate recruitment, stricter selection of undergraduates, better pass rates, and high levels of research output. In fact the formula is complicated and calculated upon a number of factors that include enrollment numbers, mixture of disciplines (with scientific and technical disciplines receiving higher levels of subsidy), new capital requirements (buildings, equipment, and maintenance) linked to increases in enrollment, and so forth. The proportion of funding resulting from incentives within the formula to encourage research and excellence is relatively small. Finally, the formula does not include any provision for financial aid to students.

In 1987 the Minister of Education and Culture announced that future subsidies would be linked to restrictions on the number of full-time students. In other words, increases in undergraduate enrollments would no longer qualify universities for increases in state subsidies. The minister justified this decision with reference to high failure and drop-out rates as well as the underutilization of the technikons. Universities were expanding too swiftly and admitting insufficiently qualified students. In 1988 this ruling was amended after negotiations with the Committee of University Principals. The new formula would allow the universities to expand their student numbers but not more than 2 percent per annum.

Different perceptions exist about the merits of the formula. In 1990, the Deputy Vice Chancellor for Financial Affairs at Wits was quoted as saying that South Africa was "at the forefront of devising subsidy systems for universities" (FM, July 6). Other commentators have been more critical, pointing to "the effect it will have once applied to predominantly black universities with relatively high failure rates, low research output, and few graduate students" (File, 1985, p. 15). At least in theory, the subsidy discourages the enrollment of black students at white universities, since many of these students fall into what government officials see as high risk categories. This is why many analysts view the subsidy formula as one of a series of measures introduced by the state in the 1980's to try to influence and control university programs and bring them into line with the government's priorities. Universities would retain formal autonomy

over how they spent their revenues, but they would risk being penalized through subsidy reductions if they ignored government recommendations.

Whatever its supposed merits or flaws, from its inception the subsidy formula has never been properly applied. In 1984 the government announced that subsidies to universities would be cut by 2.4 percent over the previous year. In 1987 all universities received 17 percent less than their entitlement under the subsidy. In 1988 these reductions were applied unevenly across the universities, ranging from 20 percent to 29 percent. The differentials became even greater in 1989, severely affecting (as they were clearly intended to) the institutions with rapidly expanding student enrollments. That year the UWC subsidy was 50 percent less than its allocation according to the formula. The same trend continued into the 1990's. In 1991, according to its own calculations, UWC received 46 percent of the amount specified by the formula, in comparison to UCT's 71 percent and Rhodes's 69 percent.

In money terms, UWC's 1991 subsidy of R55m was under half that of UCT (R119m), despite both institutions having comparable student enrollments (13,800 and 14,398). In effect, state expenditure per student at UCT is about what it is at UWC, a reversal of the pattern that prevailed in the early 1980's, when per capita state expenditure tended to be higher in the black universities than in the white ones. This was a reflection of their smaller size and their larger capital expenditure requirements at the time. In 1982, for instance, the state's expenditure per student at UCT was R4,583 and at UWC, R6,619.

Homeland universities were promised special consideration when the subsidy was introduced in 1984. Zululand, for example, was told that it would continue to receive additional support from the DET to "remove the backlog in facilities and library stock"; and that it would only have to raise 5 percent of its capital costs (Unizulu, 1. 1990, pp. 3-4). Accordingly, its initial subsidy was 40 percent higher than the formula allocation. This swiftly dropped to 87 percent of the formula allocation in 1988; in money terms the allocation has remained almost static since then.

The TBVC universities have their own financial arrangements. The University of the Transkei depends for 84 percent of its income on a government grant, which by 1987 (the latest statistics available) was barely keeping pace with inflation. This grant is made on the basis of annual budget estimates submitted to the university rather than on a fixed formula, which makes planning difficult. Nevertheless government funding through much of the 1980's was comparatively generous, enabling the establishment of a medical faculty, the extension of science laboratories, and the construction of a second campus. By 1987, however, expenditure on

library books was sharply reduced from the previous year, a telling sign of financial stress.

6.3.4 Student fees

Since the early 1950's when the expansion of white enrollment in higher education began, the state has provided a substantial subsidy to members of the white middle and upper classes who wanted higher education for their children. These parents could have paid a reasonable amount for the education of their sons and daughters, but they were not required to do so. In fact student fees were kept extremely low in the European university tradition. The alternative would have been to set fees at a reasonable level and then institute a national or institutional program of financial assistance for those students who could not afford them.

The fact is, though, that higher education in South Africa has historically been an inexpensive commodity for the student. Until 1987, student fees at a typical university accounted for only 7 percent of its operating budget. Now, however, because of fee increases and reductions in government subsidies over the past four years, student fees account for 15 to 20 percent of operating costs at most universities. This rising level has caused much consternation in South Africa, despite the fact that as a percentage of costs, it falls in the same range as students attending public universities in the United States pay: 15 to 33 percent. At many private U.S. universities, in fact, student fees cover as much as 60 to 75 percent of operating expenses.

Nevertheless, rising fees present a particular problem to historically black South African institutions. In the face of subsidy cuts, some black universities have had no alternative but to increase their reliance on fee income. From 1985 to 1989, the maximum increase in the proportion of funds derived from fees for all the white universities was 3 percent. In the same period both the University of Zululand and the North had to double the proportion of funds received from fees, and UWC increased its proportion from 16 to 23 percent.

These increased percentages have been based on a combination of fee increases and expanding enrollments. As the growth rate in student numbers slows (as it has to because of limited resources for infrastructure development), we can expect to see even larger increases in student fees at these institutions. Whereas white universities are planning fee increases for the 1990's of between 15 and 25 percent, the historically black institutions are contemplating much larger rises, both in tuition and residence fees. UWC, for example, is planning an increase of 45 percent. In some instances this new fee structure may lessen the comparative advantages these universities hold for black applicants.

As discussed earlier, rising student fees are hitting African students particularly hard since they have fewer financial resources than their white counterparts and they already acquire most of the available bursaries. Thus the burden of diminishing public resources for university education is being transferred disproportionately to students in institutions which cater largely to the socioeconomically disadvantaged sectors of the population. The established universities, with their low growth rates, higher research capability and output, and alternative sources of income, are better equipped to deal with the financial crisis.

6.3.5 Fundraising

Fundraising programs are not limited to white universities, but they are at a considerable advantage in mounting them given their location, skills, social linkages, and international reputations. The EHW universities, for instance, as well as Stellenbosch, derive a healthy proportion of their funds through private gifts and research contracts as well as through investments. This has meant that, although they have had to increase fees substantially in recent years, fund income through fees has remained relatively constant or grown only slightly between 1985 and 1989.

Nevertheless, even universities like Wits and UCT, which are located in wealthy communities and have strong institutional links with big business, derive a much smaller proportion of their budget from private sources than they do from the government. In 1990, grants and donations to Wits contributed R3.1m of its operating revenue—about 1.5 percent. Investment income generated another R8m. Of course this does not represent the total of private sector donations to Wits. In 1989, for example, its foundation raised R37m for projects that included new buildings and endowed chairs.

6.3.5 Expenditure

In 1989, total expenditure was R2,186.5m by residential universities, R220.4m by UNISA, and R2,406.9m by all universities. For residential universities, this represented an average annual increase of 17.3 percent since 1985; for UNISA, 18.5 percent. Expenditure by most universities was thus in line with the official rate of inflation for this period.

Expenditure on educational programs by residential universities amounted to R1,594.1m or 73 percent of total expenditure, having increased at an average annual rate of slightly under 17 percent. Expenditure per pupil in 1989 was R9,088 for the residential universities, R1,775 for UNISA, and R6,295 for all universities.

Table 6.5 shows expenditure per pupil for the individual universities for 1985 and 1989. With one exception (UWC), there has been negative growth in real terms for all the institutions, with the Universities of Zululand and VISTA showing especially

large decreases in growth of expenditure per pupil. The UWC figure should be treated with some caution because this institution has certainly not been blessed with abundant resources. Because of rising student numbers and high student-staff ratios, UWC has had to divert a relatively large proportion of its resources to its educational programs. Thus it has had to give up funds allocated for building facilities and purchasing equipment in the face of diminishing public resources.

Table 6.5.—Expenditure per student, 1985 and 1989 (rands)

University	Expenditure per student		Annual av. growth rate	1985-1989 (%)
	1985	1989	Nominal	Real
UCT	9,037	13,424	10	- 7
UDW	4,297	6,944	13	- 4
Medunsa	16,450	28,066	15	- 2
Natal	7,730	13,025	15	- 2
North	4,221	6,373	11	- 6
OFS	7,165	11,340	12	- 5
PE	6,403	9,463	10	- 7
Potch	6,484	10,913	14	- 3
Pretoria	5,153	8,486	13	- 4
RAU	5,754	8,369	10	- 7
Rhodes	7,246	12,122	14	- 3
Stellenbosch	6,776	12,373	16	- 1
VISTA	1,481	1,608	2	- 15
UWC	2,304	5,488	24	+ 7
Wits	6,970	11,643	13	- 4
Zululand	8,694	7,523	- 3	- 20
Res. Univers.	6,157	9,088	10	- 7
UNISA	1,292	1,775	8	- 9
All	4,445	6,295	9	- 8

Notes: 1. Expenditure per student refers to educational programs only, not total expenditure per pupil. 2. Average annual rate of inflation for the period 1985-89 was 17 percent.

Source: Computed from Bunting, 1991

A comparison of expenditure per student (educational programs only) and total expenditure per student shows that the percentage difference between these two measures is greatest in the historically black institutions. This implies that these universities have been unable to contain capital expenditure, primarily because of their general underdevelopment and rapid student growth.

Table 6.6 shows that of the 7 institutions with the greatest discrepancy (more than 40 percent) between educational expenditure per student and total expenditure per student, 6 were black. UDW shows a phenomenal 100 percent increase of total expenditure over educational expenditure per student.

Table 6.6.—Educational and total expenditure per student, 1989
(rands)

	(1) Educational expenditure per student	(2) Total exp. per student	% Increase of (2) over (1)
UCT	13,424	17,694	32
UDW	6,944	13,902	100
Medunsa	28,066	36,519	30
Natal	13,025	16,644	28
North	6,373	9,462	48
OFS	11,340	14,441	27
PE	9,463	12,625	33
Potchefstroom	10,913	14,354	32
Pretoria	8,486	12,663	49
RAU	8,369	11,390	32
Rhodes	12,122	16,967	40
Stellenbosch	12,378	16,948	37
VISTA	1,608	2,336	45
UWC	5,488	7,776	42
Wits	11,643	14,708	26
Zululand	7,523	10,637	41
Res. Univers.	9,088	12,465	37
UNISA	1,775	2,034	15
All	6,295	8,482	35

Note: Total expenditure includes expenditure on educational programs, auxiliary enterprises, and fixed asset and debt servicing.

Source: Computed from Bunting, 1991

Because of their established infrastructure, the historically white universities have been more effective in ensuring that a large proportion of their resources is devoted to educational programs. Most of these institutions have been able to spend in excess of three-quarters of their resources on educational programs, with relatively little expenditure on auxiliary enterprises such as residences and fixed asset and debt service. The historically black universities, on the other hand, have had to use a large proportion of their resources to purchase equipment and build residences and other infrastructure.

6.4 COST EFFECTIVENESS

Given their shrinking budgets and the disproportionate share of government resources represented by expenditure, it is reasonable to ask how cost effectively universities are run. One crude measure is to compare the expense of producing qualified graduates across similar faculties in a range of institutions. Such an exercise is described further in the next section. But even without comprehensive data, it is obvious that there are wide disparities in cost effectiveness between different universities. At Durban-Westville, for example, only five students graduated in 1989 from its engineering faculty. Given a faculty environment of 269, either large numbers of students must be failing to complete their studies or they are taking a very long time to do so. Clearly the maintenance of an engineering faculty at UDW does not represent an efficient allocation of resources.

6.4.1 Unit costs

Table 6.7 provides a comparison of unit costs for weighted FTE enrolled students and degree credit students. The last column of this table shows the ratio of the degree credit unit cost to the enrolled unit cost. This crude measure may provide some indication of drop-out rates in the sense that a high ratio implies a higher cost involved in obtaining a degree credit. UDW, Potchefstroom, VISTA, UWC, Zululand, and UNISA have particularly high ratios, with Pretoria, RAU, and the OFS only slightly less so.

These findings are confirmed for UDW, VISTA, UWC, and Zululand by the relatively high failure rates at these institutions (Table 6.8, Column 1). The figures of Tables 6.8, Column 1 and Table 6.7, Column 3 do not correlate for the Afrikaans universities. An analysis of what constitutes success at the first-year level may throw some light on this issue. Furthermore, the relatively low first-year pass rates at Medunsa and the North are not reflected in the ratios computed in Table 6.7.

Table 6.7.—Comparison of total costs per weighted FTE enrolled student and per weighted degree credit student, 1989 (rands)

University	Enrolled unit cost (1)	Degree credit unit cost (2)	2 : 1 (3)
UCT	14,980	18,500	1.23
UDW	13,980	21,140	1.51
Medunsa	27,130	36,200	1.33
Natal	14,610	17,890	1.22
North	6,030	7,910	1.31
OFS	12,180	16,760	1.38
UPE	11,740	15,210	1.30
Potch	12,640	17,860	1.41
Pretoria	10,690	14,760	1.38
RAU	9,500	13,130	1.38
Rhodes	14,160	17,930	1.27
Stellenbosch	14,250	17,710	1.24
VISTA	3,900	6,120	1.57
UWC	6,950	10,690	1.53
Wits	13,040	16,930	1.30
Zululand	9,410	14,480	1.54
Res. univers.	11,540	15,830	1.37
UNISA	3,780	8,210	2.17
All	9,630	14,410	1.50

Source: Bunting, 1991

Table 6.8.—Undergraduate success rates in universities, 1989
(percent)

University	First time entering under-graduates	Other under-graduates	Total under-graduates
UCT	78	85	83
UDW	45	71	62
Medunsa	48	73	71
Natal	77	84	82
North	50	65	60
OFS	69	78	76
UPE	66	80	76
Potch	78	80	79
Pretoria	76	81	79
RAU	72	81	79
Rhodes	71	83	79
Stellenbosch	77	85	83
VISTA	59	66	64
IJWC	59	70	67
Wits	72	82	80
Zululand	62	71	68
Res. univers.	67	78	75
UNISA	35	47	46
All	63	68	67

Source: Bunting, 1991

The measures of unit costs and success rates are usually regarded as indicators of the internal efficiency of an education system. Although they may be of relevance in the South African context, they should be viewed with a degree of caution because of the heterogeneity of the system. The high failure rates and the high ratio of degree credit unit costs to enrolled unit costs at the historically black universities is undoubtedly due to, *inter alia*, the poorer quality of student intake and the relative lack of staff and facilities.

6.4.2 Unit costs by field of study

A further measure of internal efficiency may be obtained through an analysis of the unit cost of the output according to field of study. Again this is a crude measure of efficiency because it measures the total allocation of resources to a faculty against the number of graduates and diplomates emerging from that faculty. Furthermore it includes only the direct allocation to the faculties and therefore ignores overhead costs and expenditure on buildings, debt servicing, and auxiliary enterprises. Therefore such measures are not comparable to the figures in Table 6.7. See Appendix K for

a series of tables illustrating the cost per output unit for various fields of study and institutions. As these tables show, the cost per unit of output varies considerably between institutions. It is highly costly to produce graduates in certain faculties of the black institutions, namely agriculture (North), commerce (North and VISTA), computers (UWC), engineering (UDW) and life sciences (Zululand and North). On the other hand, it is relatively cheap to produce graduates in law, languages, social sciences, and public administration at these institutions.

On the basis of these findings, Table 6.9 compares the cost effectiveness of these institutions by field of study. The categorization is made on the basis of comparison with the lowest cost per unit institution within a particular field of study.

Table 6.9.—Cost effectiveness by institution and field of study

Field of study	Moderate cost effectiveness	Low cost effectiveness
Agriculture Commerce	- UDW Potch Rhodes UWC Zululand	North VISTA
Computers	UDW Natal North P.E.	UWC
Engineering	RAU -	UDW Potch
Languages	UDW	-
Life & physical sciences	UDW	Zululand North
Public administration	North UWC	- -
Social sciences	- -	VISTA Zululand

Source: Analysis in Appendix K

The measures of cost effectiveness may not necessarily mean that these institutions are internally inefficient. The HW universities, because of their established infrastructure and higher student enrollment in the technical faculties, are reaping the benefits of economies of scale which enable them to achieve lower average unit costs. The scientific and technical faculties in most of the HB institutions are in their infancy and are often characterized by low student enrollment and inadequate staffing.

However in the light of the great discrepancies between institutions with respect to certain faculties, serious consideration must be given either to abandoning the high-cost faculties or to improving their cost effectiveness.

6.5 RATIONALIZATION AND COORDINATION

6.5.1 Duplication of programs

The requirements of apartheid and the historical competition between white English and Afrikaans speakers have led to distortions in planning for the higher education needs of the country and to considerable duplication of institutions and programs, particularly in the urban areas. There is at least one English and Afrikaans university in most of the major urban areas of the country, with another not very far away. Beyond this waste, the Extension of University Education Act of 1959 created a whole new class of higher education institutions for Africans, Indians, and Coloureds because these groups were then prohibited from enrolling in schools not reserved for them.

Specialized degree programs are particularly redundant. Eight universities offer degrees in engineering: three English, four Afrikaans, and one Indian. Nine offer degrees in medicine: three English, three Afrikaans, one Indian, and two African. In dentistry, there is one program for the English, two for Afrikaners, and one each for Indians, Africans, and Coloureds. Eighteen of the universities in South Africa offer degrees in law. Table 6.10 summarizes this situation.

Table 6.10.—Institutions offering specialized degree programs

Institution	Engnr.	Medicine	Vet. med.	Law	Pharm.	Agri.	Dent.
UCT	X	X		X			
Natal	X	X		X	X	X	
Wits	X	X		X			X
POTCHE	X			X	X		
Pretoria	X	X	X	X	X	X	X
RAU	X			X			
Stellenbosch	X	X		X		X	X
Durban	X	X		X	X		X
OFS		X		X		X	
Medunsa		X	X				X
Transkei		X		X			
Rhodes				X	X		
UPE				X			
UNISA				X	X		
Fort Hare						X	
Zululand				X			
BOP				X			
North				X		X	
Venda							
Vista				X			
Western Cape				X			X

Source: University catalogs and *The World of Learning*

Given the value placed on autonomy and the absence of any central control, traditional white universities have aimed to be as comprehensive as possible. As a consequence, all the HWU's are to some extent doctorate-granting, research-oriented institutions, and all offer programs across a great number of areas.

Interviews by the Team revealed that the traditionally black universities also believe that they should be comprehensive institutions, but that state control and a lack of financial resources have prevented them from realizing this dream. Even though the University of Transkei has just graduated its first medical doctor, for the most part the black universities are still undergraduate institutions.

6.5.2 Lack of national standards

Universities set their own criteria for measuring academic achievement, and there are no common mechanisms to ensure uniform standards of evaluation. The difficulties begin with admission policies. DET matriculation results are demonstrably inadequate in measuring potential, developed ability, and achievement. But historically black universities have had no choice but to use them as the basis for admission. The HBU's do not have the resources to establish the alternative selection procedures employed by some of the mainly white institutions.

Impressionistic and anecdotal evidence also suggests that considerable unevenness and inconsistency exist in the criteria used to evaluate student performance at different universities. Most institutions use external examiners to regulate standards, but, increasingly, these are not employed for undergraduate assessment. In any case, the choice of external examiners is usually left to the discretion of heads of departments, and there are no clear guidelines to promote consistency among examiners throughout the system.

Cultural and political distinctions among South African universities also inhibit the emergence of uniform levels of assessment. Afrikaans-medium universities, for example, do not appoint non-Afrikaans speaking examiners for obvious reasons. The universities in the TBVC territories are completely autonomous. The historically black universities were for a long time isolated from the English-medium HWU's, and even today contacts between them are superficial.

CHAPTER 7

RECOMMENDATIONS FOR THE UNIVERSITY SUBSECTOR

7.1. ESTABLISH ONE NATIONAL MATRICULATION EXAMINATION

As mentioned in the last chapter, the matriculation examination taken by most African students is not a reliable indicator of their performance in higher education. The exams taken by white, Indian, and coloured school children have varying degrees of utility as predictors. Some universities compensate for the lack of dependable indicators by devising their own selection procedures for black students who do not meet automatic enrollment requirements. Such procedures vary from institution to institution. However, judging from the continuing high failure rates among black students at the institutions in which they are used, these new procedures are themselves imperfect in identifying potential.

The prerequisite for a more rational admission procedure would be an entrance examination which is uniformly set and evaluated. Affirmative action policies and merit scholarships could then be based on a reliable set of performance indicators. In the short term, though, it might be too ambitious to expect that a national matriculation examination could fairly measure past and future performance in such a sharply differentiated schooling system. As an interim step, universities might collaborate in designing and administering a uniform set of tests, either specifically for disadvantaged students or as a general university entrance requirement. The design of such tests should probably be based on the expertise generated by the special selection procedures of the English-medium HWU's. In exploring appropriate evaluation methods, machine-scorable objective tests should also be investigated.

7.2 STRENGTHEN ACADEMIC SUPPORT PROGRAMS

The admission of larger numbers of black students is insufficient by itself to correct historical inequalities in university education. Until secondary education is reorganized, large numbers of African students with the potential to perform well at university will arrive at such institutions underprepared. Academic support programs provide special assistance to these educationally disadvantaged students.

The experience at English-medium HWU's suggests that with careful alternative selection procedures and academic support which is well integrated into the mainstream curricula, learning difficulties can be effectively alleviated within the first year. Enriched and

intensively taught first-year credit courses stretched over two years also seem to be effective in enabling African students to progress in scientific and technical subjects. Academic support programs consume relatively modest proportions of university budgets. Their extension will be a necessary accompaniment of expanding black enrollments, and they should be a crucial element in the state subsidy formula. At present the existence of such programs does not qualify universities for extra funding.

An implication of this argument is that the disproportionate instructional burden undertaken by the HBU's should be properly recognized. One way to do this would be to alter the allocation made to teaching in the funding formula. Institutions that enroll large numbers of students from disadvantaged backgrounds could be financially rewarded in acknowledgement of the more intense forms of teaching they require.

More formal systems of teaching evaluation and expanded staff development programs might encourage greater sensitivity among university instructors to the needs and perceptions of disadvantaged students. At the moment there are few incentives to experiment with forms of instruction other than the lecture or the seminar, both of which too frequently involve recital rather than discussion.

7.3 EXPAND FACULTY NUMBERS

Through the 1980's, the student population almost doubled while the number of university lecturers remained nearly static. As a consequence teaching duties have become increasingly burdensome. Moreover, with the growing number of admissions of underprepared students, the task of teaching has become more complex and difficult. Even the most imaginative academic support programs cannot solve the problem of too few teachers instructing too many students in the large classes that predominate in the humanities and social sciences. The creation of additional faculty positions has become an urgent necessity.

Measures must be taken to provide an adequate pool of scholars for faculty positions. An assertive program of affirmative action will be needed to identify, recruit, and employ Africans. Scholarship support should be provided, including tuition and living expenses for as long as three to five years. In addition, inducements should be created to attract expatriate scholars to return to South Africa. A substantial group of black South Africans hold senior positions at American and European universities. To return, many might reasonably expect salaries and benefits competitive with their present levels of remuneration. Assembling appropriate compensation packages for the exiles would require some ingenuity.

7.4 STRENGTHEN THE HISTORICALLY BLACK UNIVERSITIES

7.4.1 Institutional, staff, and program development

See Chapter 4 for specific recommendations regarding institutional, staff, and program development in the historically black universities. Financial support is particularly needed to assist faculty already employed at the universities to earn Ph.D. degrees. One way to help HBU faculty obtain terminal degrees without loosening their institutional affiliations would be a program that encouraged them to register for a Ph.D. at their own university, supported a year of course work and project design at a U.S. or other institution, and provided funds for teaching replacements to enable a further two years of data collection and analysis in South Africa.

7.4.2 Facilities development

Support is needed for construction and renovation of library facilities, as well as the acquisition of books and journals. Journals in scientific areas are a necessity. In universities where most students live on campus, additional residential space is needed to accommodate expanded enrollments. Lecture halls and more classroom space will also be necessary, and there is a pressing need for laboratory facilities and equipment.

7.4.3 Expansion of fundraising capability

Most South African universities have established charitable foundations, but these function with varying degrees of sophistication. It is the larger and richer institutions that are best organized to reach potential foreign donors. Expanding the black universities' fundraising capability would be more useful than one-time donations for the construction of particular facilities.

7.5 DEVELOP PROFESSIONAL TRAINING AND RESEARCH CAPABILITY

7.5.1 Transfer opportunities and dual degree programs

Transfer opportunities need to be fully explored if Africans are to have access to a broader range of professional programs. At present it is difficult for a student to transfer from a technikon to a university without losing substantial academic credit. It is somewhat easier for a student to transfer from a university to a technikon. Steps should be taken to encourage transfer opportunities between universities and technikons—particularly in those areas where both offer the same professional program, for example, engineering or nursing.

Most of the specialized programs of study exist only at the white universities. Since in all likelihood full-time black students will continue to enroll first in the black institutions, they should be given the opportunity to transfer to the white universities to complete their studies in these specialized areas. This could be accomplished in two ways: by establishing formal dual degree programs in specific areas such as engineering, medicine, and agriculture, or by making it easier to transfer. There are many examples of dual degree programs among U.S. universities. Students in these programs spend three years at one institution meeting certain course and performance requirements, and then they transfer to the second institution, spending their last one or two years there. In the end they earn two bachelor's degrees, for example, one in mathematics and the second in engineering. In a straight transfer program, on the other hand, students would begin their studies at one institution and then transfer to another to complete their work for a single degree.

7.5.2 Upgrading academic programs at black universities

With the introduction of dual degree and transfer options, black universities will require considerable upgrading of facilities and human resources to provide the basic science instruction that is the foundation of specialized technical and vocational disciplines. Consideration should be given to developing specialized professional degree and master's programs at one or more of the black universities. Special emphasis should be placed on the life sciences, physical sciences, computer science, and mathematics. In addition, black universities could develop specialized degree programs in fields (a) for which they are comparatively advantaged, (b) which do not require expensive facilities, and (c) which are currently underdeveloped in terms of national needs. Examples are agricultural extension, small business development, and community health programs.

7.5.3 Research programs

Only a small proportion of current government expenditure on research goes to universities. A much greater share flows directly to government controlled research councils. In terms of both cost effectiveness and quality, there is a strong case to be made for changing the ratio of government research expenditure in favor of the universities. Many of the applied research programs undertaken by bodies such as the HSRC could be relocated to campus facilities.

The HBU's, in particular, might be appropriate places to focus on community issues and social problems. These institutions have a comparative advantage in such areas of applied research as public health, street law, and rural sociology. Programs targeting disadvantaged students for postgraduate training at the HWU's would

help maintain their research capacity while at the same time reducing inequities.

Political barriers still inhibit the development of formal institutional ties, but it is not too early to begin exploring the possibilities of cooperative research initiatives between South African and other African universities. African agencies such as the Dakar-based CODESRIA could play a decisive role in this respect.

7.6 REFORM UNIVERSITY FINANCING

7.6.1 Differential funding

Until now South African universities have existed as essentially state-funded institutions with varying degrees of autonomy to conduct their own affairs. Since the government no longer has the resources to continue such a financial arrangement, both the state and the institutions will have to determine their future relationship. Given their individual histories and constituencies, the universities have varying capacities to raise the funds needed to carry out their missions. At the same time, the state will continue to have an interest in what the universities are doing.

A few institutions may wish to march to the beat of a different drummer. They should be allowed to do so provided they have the funds and provided they are committed to national policies of affirmative action, access, Africanization, democratization, and compensatory education. Others will have no other source of funding except the state. Having to depend on government funding to carry out their missions, these institutions should be required to live with a larger state input into their affairs than the former group.

Thus three general funding options seem possible, each calling for a different set of relationships to the government:

1. Quasi-private institutions
2. Publicly aided institutions
3. Publicly controlled institutions

An appropriate national body would decide each institution's relationship to the state. The assumption is that no additional government subsidized universities would be established in the near future.

7.6.1.1 Option one

Under the first option, the state would provide a small to medium percentage of the university's education and general expense budget through a subsidy. The university would take sole responsibility for capital expenditures through bond issues, fundraising, and internal funding. In turn, the government would appoint a third of the university's council of 30 members.

7.6.1.2 Option two

Under this option, the government would provide a medium percentage of the university's educational and general expenses through a subsidy. As in Option 1, the university would be responsible for its own capital expenditures. The government would appoint half of the institution's council of 30 members.

7.6.1.3 Option three

Under the third option, the state would provide a high percentage of the institution's educational and general expenses, again through a subsidy. Financed by bonds and fundraising, capital expenditures would be a joint responsibility of the government and institution. The state would appoint two-thirds of the membership of a 30-member university council. There would be a single council for all publicly controlled universities.

7.6.1.4 Advantages and disadvantages

Due to the differing amounts of the government subsidy, tuition levels would be highest at the Option 1 universities and lowest at those of Option 3. Overall, the adoption of these funding options would result in a lower state subsidy for this subsector. Part of this savings could be reallocated to a national bursary program targeted to the neediest students.

A criticism of this model of differentiated funding is that it could increase the government's control over university councils and might infringe on the autonomy of the institutions. Admittedly this might be a threat, but the Team does not feel that it is a major one. The belief is that the government of the new South Africa will be democratic in all of its dealings. It stands to reason that the state should have some input into institutional policy development if it is being called upon to contribute the major share of funding. The suggestion is that this input should occur at the council level.

Another criticism concerns the elimination of university councils at the institutions falling under state control. A single council is suggested for this set of institutions in order to provide effective planning, coordination, and resource allocation.

7.6.2 Capital financing

Capital projects at universities currently depend heavily on state funding. For approved projects, the state provides 85 percent of the funding for academic and administrative buildings and 50 percent of the funding for other capital improvements. Although the Team did not have access to extensive data on this matter, it appears that only limited use is currently made of long-term (20-30 year) bonds to finance capital projects. For example, in the fiscal year 1990-91, state authorization was granted to universities for private loans for approved capital projects of R29m, an average of R1.3m for the 21 universities. Given the government's reduced financial commitment to the tertiary sector, universities should increasingly consider debt financing for capital projects. It is also assumed that gifts to higher education by individuals and businesses would qualify for a certain amount of tax relief.

7.7 STANDARDIZE INSTITUTIONAL EVALUATION AND ACCREDITATION

Expected levels of performance vary widely within the subsectors of the tertiary education system. Within disciplines, too, no consensus exists concerning curricular goals. While there is merit in intellectual variety, sharp differences in academic expectations place many students at an acute disadvantage when they enter the employment market or wish to transfer from one institution to another.

Consideration should be given to the establishment of a accreditation program to systematically evaluate the quality of teacher instruction and student performance in all universities. Such a program would help set minimum goals and ensure uniform standards of performance and evaluation. Among other tasks would be the monitoring of examination criteria to ensure their consistency among institutions. The Committee of University Principals could appoint the members of the accreditation board, including representatives of each of the universities and professional associations.

CHAPTER 8

TECHNIKONS

8.1 INTRODUCTION

Technikons are fully fledged educational institutions at the tertiary level. They were instituted to provide advanced technical education as well as to train certain categories of teachers for secondary schools and technical colleges. According to DNE NATED 02-150, "Technikons must prepare students for a specific profession or career and must be aimed at the practice, promotion, and transfer of technology." Admission to a technikon requires a minimum of a senior certificate or equivalent qualification. Technikons offer the following hierarchy of diplomas and certificates:

<i>Entry qualification</i>	<i>Program</i>
Senior Certificate	National Certificate
National Certificate	National Higher Certificate
National Higher Certificate	National Diploma
National Diploma	National Higher Diploma
National Higher Diploma	Master's Diploma in Technology
Master's Diploma	Laureatus in Technology

While this is the hierarchy described in DNE documents, very few technikons still offer the National Certificate and National Higher Certificate courses. The minimum duration of the technikon program is three years, with a maximum of six years for the Laureatus in Technology.

8.2 GOVERNMENT OVERSIGHT

Technikons and technical colleges are accountable to one of the following ministers:

- The ministers of education in the three houses within the tricameral system (for Whites, Coloureds and Indians)
- The Minister of Education and Development in the Cabinet (for Africans)
- The ministers in the self-governing territories
- The ministers of education of the independent homelands

Apart from acts governing general affairs education, each racial group of technikons has a specific Own Affairs act:

- Whites: Technikons (National Education) Amendment Act, 1988 [Act 33 of 1988]
- Indians: Advanced Technical Education for Indians, 1968 [Act 12 of 1968]
- Africans: Technikons (Education & Training), 1981 [Act 27 of 1981]
- Coloureds: Peninsula Technikon Act, 1982 [Act 52 of 1982]

These acts govern the administration of the institutions and give the minister final approval of the introduction of programs and courses. This is primarily because of the cost implications of new or changed programs.

Several statutory and nonstatutory bodies also oversee the technikons. The University and Technikon Advisory Council (AUT) advises the minister on the following matters pertaining to universities and technikons:

1. The provision of any laws pertaining to administration
2. The establishment, development, and extension of institutions
3. Academic fields of study
4. Courses offered
5. Criteria for the granting of subsidies
6. Any matter referred to it by the minister

The Certification Council for Technikon Education, generally referred to as SERTEC, is responsible for setting norms and ensuring that academic standards are maintained at technikons. SERTEC evaluation teams are made up of people from industry, the SERTEC council, and technikon staff members. All technikon diplomas are issued by SERTEC and signed by a SERTEC official and the rector of the particular institution. SERTEC is moving toward becoming an accreditation body.

Finally, the rectors of all the technikons, excluding the TBVC technikons, form the Committee of Technikon Principals (CTP). This committee is constituted in terms of articles in each of the Own Affairs acts.

8.3 ENROLLMENTS

8.3.1 Racial disparities

Of the 84,364 technikon students registered in 1990, 21 percent were African, 8 percent Coloured, and 7 percent Indian. As the following table shows, the racial composition of enrollments is also significantly imbalanced considering the numbers of technikon students per thousand of population.

Table 8.1.—Number of students per thousand of population studying at universities and technikons, 1989

Population group	Number per thousand	
	Universities	Technikons
White	31	10
Indian	20	6
Coloured	6	2
African	4	0.5

Source: *Educational Realities in South Africa*

According to the Human Sciences Research Council, African student enrollment in technikons grew by 45.5 percent between 1980 and 1990 (*Fingertip Facts*, 1991). Monica Bot, on the other hand, puts the increase of African student numbers at technikons between 1989 and 1990 at 74 percent (Bot, 1991, p. 10).

As the table below shows, the predominant racial group among students at each of the technikons still reflects clearly the racial group for which the institution was established.

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Table 8.2.—Percentage distribution of technikon students by race, 1990

Technikon	% of total students			
	African	Coloured	Indian	White
Cape	1.2	9.6	0.7	88.5
Northern Transvaal	99.0	0	1.0	0
Mangosuthu	100.0	0	0	0
M.L. Sultan	18.7	3.9	72.3	5.1
Natal	5.8	2.8	4.0	87.4
OFS	1.6	1.0	0	97.4
Peninsula	22.3	73.4	2.7	1.6
Port Elizabeth	10.0	11.2	2.4	76.4
Pretoria	1.5	0.6	0.3	97.6
RSA	30.7	7.2	5.0	57.0
Vaal Triangle	5.4	0.2	1.5	92.9
Witwatersrand	10.9	1.6	3.3	84.2
Ciskei	100.0	0	0	0
Transkei	97.6	2.4	0	0
Setlegelo	100.0	0	0	0

Sources: *Educational Realities in South Africa* and personal communication, Nov. 1991

In 1990 the student bodies of the predominantly white institutions had the following racial composition.

Table 8.3.—Racial composition of selected technikons, 1990

	Africans	Coloureds	Indians	Whites
Cape	82	658	47	6,083
Natal	322	154	221	4,831
OFS	49	29	0	2,927
Port Elizabeth	400	448	96	3,031
Pretoria	151	63	33	9,595
Wits	898	133	274	6,880
Vaal	238	13	69	4,071
Total	2,140	1,490	740	37,418

Source: *Educational Realities In South Africa*

This table clearly shows that students of color are seriously under-represented in the white technikons. The situation is exacerbated by the fact that the school system continues to produce

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African students without the required subject combinations and grades to enter these institutions. In the absence of nationwide intervention programs, Africans will continue to be shut out by present admission criteria.

8.3.2 Gender disparities

Women and men have unequal access to technical education. By the end of 1989, 50,806 men and 24,991 women were registered in technikons. Table 8.4 shows the distribution of students by gender and race in selected institutions.

TABLE 8.4.—*Distribution of students in selected technikons by race and gender, 1989*

	Africans		Coloureds		Asians		Whites	
	M	F	M	F	M	F	M	F
Cape	53	28	410	164	23	16	3,556	2,168
TNT	1,830	86?	2	0	0	0	7	17
Peninsula	196	76	2,430	1,269	85	51	64	22
M.L. Sultan	495	315	123	104	2,966	1,656	126	114
Mangosu.	1,235	336	0	0	0	0	0	0

Source: Personal communication, November 1991

As set out in Table 8.5 below, the statistics for 1990 show that 32 percent of technikon students were women. The majority of female students were in programs such as secretarial, business, education, and health.

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Table 8.5.—Headcount of enrolled students according to population group, qualification, and sex, 1990

Population group	Qualification and sex						Total		
	Prediploma			Postdiploma					
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Whites	32,145	17,634	49,779	3,090	926	4,016	35,235	18,560	53,795
Indians	3,652	1,905	5,557	212	95	307	3,864	2,000	5,864
Coloureds	4,586	2,000	6,586	204	152	356	4,790	2,152	6,942
Africans*	12,185	4,036	16,221	275	325	602	12,460	4,363	17,763
Nat. States	991	306	1,297	4	68	72	995	374	1,369
RSA	11,194	3,730	14,924	271	259	530	11,465	3,989	15,454
TBVC									940
Total									84,364

* Only the final total in this line is all-inclusive since data for the TBVC institutions is not broken down by category.
Source: DNE statistics

Of the 84,364 technikon students registered in 1990, white females constituted 22 percent; Indian females, 2.4 percent; coloured females, 2.6 percent; and African females (not counting female students in the TBVC institutions), 5.2 percent.

8.4 ACADEMIC SUPPORT PROGRAMS

The accessibility of technikon education to Africans is hampered by the poor quality of their secondary education throughout the country. Their high failure rate has given rise to preparatory, bridging, and academic support programs whose form and content vary among the institutions. In general they are meant to expose students to math, science, and communication so they can cope with the demands of the technikon courses. The duration of the programs ranges from one semester to a year. In a few technikons they are run and evaluated by departments and individual staff members who have an interest in providing basic skills to students.

While programs of this kind would seem to be of tremendous benefit to students, they do have some drawbacks. The majority of the technikon students interviewed by the Team were not in favor of such programs because they had to pay for them themselves and they

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felt their time was being wasted in repeating what they had done at Standard 10.

8.5 FACULTY

8.5.1 Racial and gender inequity

Generally speaking, up to about 1985 institutions were not allowed to appoint staff members belonging to races other than that for which the institution was established. Only white staff could be appointed to positions at white institutions, but the converse was not true. Black institutions were permitted to appoint both black and white staff members. Table 8.6 below enumerates the permanent staff at technikons by race for 1990. Of the seven traditionally white technikons, only two have black staff members.

Table 8.6.—Number of technikon educators with permanent appointments according to institution and population group, 1990

Technikons	White	Indian	Coloured	African	Total
Cape	271	0	1	0	272
N. Transvaal	102	0	0	21	123
Mangosuthu	74	2	0	6	82
M.L. Sultan	48	105	0	0	153
Natal	260	3	0	0	263
OFS	90	0	0	0	90
Peninsula	52	13	91	0	156
Port Elizabeth	156	0	0	0	156
Pretoria	348	0	0	0	348
RSA *	92	0	1	1	94
Vaal Triangle	158	0	0	0	158
Witwatersrand	325	0	0	0	325
Transkei	7	3	0	6	16
Setlegelo (Bop)	5	4	1	24	34
Ciskei	17	1	0	1	19
Total	2,005	131	94	59	2,289

* Offers only distance tuition

Sources: *Educational Realities in South Africa*; DNE, NATED 02-300, 91/06

Table 8.7 below gives a historical perspective for the period 1988-1991. Although the growth rate for African staff was 126 percent for 1989-90 and 17 percent for 1990-91, the increase brought the African component only to a level of 3.3 percent of all technikon educators. The excuse given by people in authority for the lack of Africans on the staff is that there are few qualified Africans who can be employed as lecturers.

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Table 8.7.—Number of technikon educators with permanent appointments by racial group, 1988-91

Racial group	1988 (excludes TBVC)	1989	1990	1991 * provisional
Other (undefined)	1	1		
White	1,879	1,954	2,005	2,072
Indian	121	120	131	143
Coloured	92	92	94	91
African	12	26	59	69
Total	2,105	2,193	2,289	2,375

* This assumes the same racial composition for Setlegelo Technikon as in 1990.
Sources: *Educational Realities in South Africa*; NATED 02-214 (91/08); NATED 02-215 (91/01); personal communication

The same gender disparities found among students enrolled at technikons also exist among the teaching staff. For instance in 1991 there were 1,516 men compared to 736 women on the faculty. Table 8.8 shows gender disparities among staff in selected technikons.

Table 8.8.—Teaching staff by race and gender, 1991

	Africans	Coloureds	Asians	Whites	Total	
					M	F
Cape	0	1	0	241	176	85
TNT	23	0	0	102	78	45
Peninsula	1	89	13	56	131	28
M.L. Sultan	0	1	102	40	113	31
Mangosuthu	5	0	2	64	58	13

Source: *Educational Realities in South Africa*

Women of color teaching in technikons are concentrated in the secretarial, health, and personnel programs. Few women teach in the engineering sciences. When asked about this, rectors and vice rectors said that it was due to "tradition."

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8.5.2 Qualifications

The designations of rank used for technikon educators are lecturer, senior lecturer, associate director or department head, director, vice rector, and rector. Interestingly, it is the number of students in the subsidy formula that specifies the distribution of posts according to level and sets the ratio between these levels. This budgeting procedure determines how many lecturers, senior lecturers, and so on each institution may have. The minimum qualification needed for appointment at a technikon is an M+3 (Matric plus a 3-year qualification, for example, a degree). However to pass the salary "bar" in the salary scales, a lecturer needs an M+4 qualification, that is, an honors degree.

Most technikons require applicants to have at least two years of relevant industrial experience plus the necessary academic qualifications. As the number of qualified people has increased, so have the minimum requirements of the institutions. Nevertheless technikon staff are still in need of improving their qualifications. As the table below shows, only 49.8 percent of the teaching staff have a qualification equivalent to M+4.

Table 8.9.—Percentage of technikon educators by qualification level, 1991

Level of qualification	<M+3	M+3	M+4	M+5	>M+5
% of total staff	2.7	20.5	49.8	24.7	2.3

Source: Calculated from data in DNE, NATED 02-218 (91/01)

8.6 ADMINISTRATION

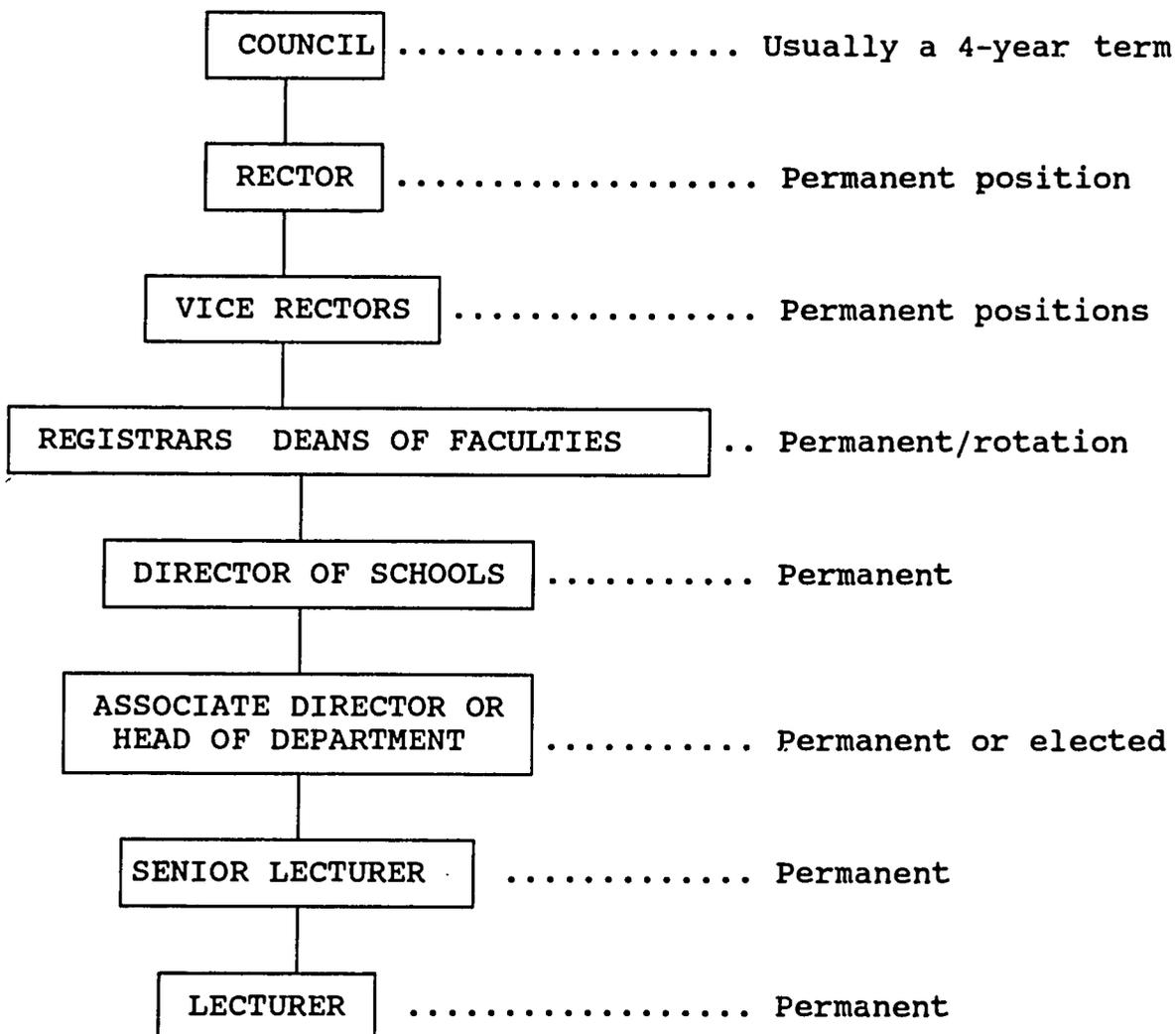
8.6.1 Administrative structure

Technikons generally enjoy the same level of autonomy as universities in that their councils have governing and executive authority. All technikons that are autonomous are governed by two statutory bodies, a council and an academic board. The council is accountable to the relevant minister on matters defined in the specific technikon act. Appointed with the approval of the minister, its members include representatives of donor companies, local authorities, commerce and industry, other state departments, and the alumni. This body is responsible for administering the affairs of the institution.

The academic board deals with all matters pertaining to instruction and discipline of students, academic programs, and any other item referred to it by the council, of which it is a statutory subcommittee. The rector is the chief executive officer of the institution and is accountable to the council. Depending on his or her leadership style, the rector may make use of the rectorate (the rector and vice rectors) and/or a committee system. Most technikons use both the rectorate and a system of committees as advisory bodies, the power to make decisions being vested in the rector. The council, rector, and rectorate are therefore powerful units within any technikon.

The most commonly used organogram for technikons is set out below. Note that not all technikons have deans or associate directors.

FIGURE 8.1.—Common organogram used at technikons



8.6.2 Racial inequity in leadership

The overwhelming majority of technikon are controlled by white councils and management. As the table below shows, only those established for Blacks have councils that are racially mixed.

Table 8.10.—Racial composition of technikon councils

Technikon	Council members
7 white institutions	All white
RSA (correspondence)	All white
Setlegelo (BopS)	6 white, 3 African
Northern Transvaal	13 white, 7 African
Mangosuthu	11 white, 4 African, 1 Indian
M.L. Sultan	5 white, 1 Coloured, 13 Indian
Peninsula	10 white, 10 Coloured, 3 African
Ciskei	Details not available
Transkei	Details not available

Source: Personal communication, November 1991

As indicated by the data below, the positions of authority at technikons are still almost exclusively in the hands of Whites.

Table 8.11.—Racial composition of technikon senior management

Position	Total no.	White	Indian	Coloured	African
Rector	15	13	1	1	0
Vice rector	28*	24	1	2	1
Total	43	37	2	3	1

* The number of vice rectors per technikon varies from 1 to 4.

Source: Annual reports

8.6.3 Staff associations and unions

Technikon lecturing staff are generally organized in staff associations at each institution. These associations have a national body that meets with the Committee of Technikon Principals (CTP) from time to time to discuss matters affecting their membership. At some institutions the local staff association is represented on the technikon council.

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More recent developments include the establishment of academic unions to renegotiate service conditions for their members. The Union of Democratic University Staff Associations (UDUSA) also wishes to extend its membership to technikons.

8.6.4 Student councils

Students on technikon campuses are represented by democratically elected student representative councils (SRC). The constitutions governing these SRC's are institution specific and there is no formal national body representing all the councils. SRC's do not play a prominent role in the predominantly white institutions. On the other hand, SRC's are extremely active in policy formulation and implementation at the predominantly African or black institutions. At one technikon, the SRC actually heads and coordinates the Transformation Committee, which is responsible for preparing the institution to deal with the demands of the new South Africa.

SRC's on black campuses are more directly tied to extraparliamentary liberation movements than their white counterparts, and many of their activities are often regarded as political. These students have been at the forefront of protests against injustices in South Africa, both on and off campus. As a result, the interaction between the institutional administration and the SRC is intense and direct at black institutions. Confrontations between students and the police, while having decreased dramatically in 1991, are not unusual. In contrast, such confrontations have never occurred on the campuses of historically white institutions.

Student representation on decision-making bodies or in consultation meetings varies greatly between the technikons. A majority of institutions, however, confine their SRC's to such activities as caring for the social well-being of the student body and ceremonial functions.

8.7 CURRICULUM

Courses offered by technikons cover most specialized occupations from applied engineering and the biological, chemical, and physical sciences to the commercial sciences, the humanities, and art. Table 8.12 shows the distribution of courses according to certificates.

Table 8.12.—*Distribution of courses at technikons, 1991*

Type of diploma	Technology	Humanities
National Certificate	7	15
National Higher Certificate	1	10
National Diploma	93	58
National Higher Diploma	59	33
Master's Diploma	41	20
Laureatus	22	5
Other	38	11

Source: Program details, CTP 1991

As indicated in Table 8.12, the heaviest concentration of courses is at the National Diploma and National Higher Diploma levels. The demand at the National Diploma Level is high because with this certification students can attain employment almost immediately. The National Higher Diploma further increases chances for promotion.

Technikons also offer courses leading to the National Higher Education Diploma, Higher Education Diploma, Further Education Diploma, and Further Diploma in Advanced Education. Courses leading to association with and membership in various institutes are also offered by a number of technikons. In general, however, research activities are limited due to time and financial constraints.

Experiential training, which includes on-the-job training for a period of six to eighteen months, is compulsory in the following disciplines: science, engineering, health and community nursing science, and education. Science and engineering programs require a student to complete four semesters of academic study at the technikon and two semesters of experiential training. In all disciplines, the experiential training takes place in a work situation and is governed by a prescribed program aimed at integrating theory and practice. In a few well-organized technikons, this activity is the responsibility of a placement officer with the support of the academic staff. However many institutions require students to find their own experiential training opportunities.

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The process of curriculum change and development is conducted democratically in the technikons. One institution becomes a convener in a specific program area. Any change requires input from industry and all the other technikons offering or interested in offering that program. Once a majority agreement has been reached, the proposal is channelled via the CTP to the DNE and the AUT. Once the change has been approved, DNE informs all technikons that they may now offer the revised program.

8.7.2 Preponderance of humanities programs

Students (including Blacks) generally feel that they are being well prepared in the technikons in terms of the acquisition of basic skills. However, based on Team interviews with a sampling of technikon students, Whites in institutions such as PE and Natal appear to be better prepared to cope with a fast-changing South African environment.

While technikons were established in order to increase South Africa's middle- and high-level technological human resources, the majority of students are choosing programs in business, education, art, and management. One reason is that in the country's declining economy, employers are no longer offering training positions requiring technikon preparation. The table below shows that the average enrollment for white, Coloured, and Indian students is 15 percent in engineering compared to 60 percent in the humanities. African students have a more even spread across the disciplines: 39 percent in humanities, 35 percent in sciences, and 26 percent in engineering. It should be noted that the number of African students is very low compared to the total student body.

Table 8.13.—*FTE students by discipline and gender, 1988*

Education department and gender	Humanities	Science	Eng/building	Total
% of total	64%	22%	14%	
Assembly (Whites) Total	24,676	8,633	5,333	38,642
Male	14,455	5,232	4,616	24,303
Female	10,221	3,401	717	14,339
% of total	58%	27%	15%	
Delegates (Indian) Total	2,042	957	503	3,502
Male	805	555	471	1,831
Female	1,237	402	32	1,671
% of total	57%	28%	15%	
Represent (Coloured) Total	1,823	874	476	3,173
Male	1,019	565	446	2,030
Female	804	309	30	1,143
% of total	39%	35%	26%	
DET & self governing Total	1,084	955	718	2,757
Male	636	683	682	2,001
Female	448	272	36	756
% Total	62%	24%	14%	
	29,625	11,419	7,030	48,074

Source: DNE, NATED 02-215 (91/01)

Overall, African students are over-represented in the humanities and health sciences, while females of all races are over-represented in secretarial courses.

8.7.3 Limited course offerings at black institutions

Partly because they were established earlier, white technikons offer a much wider spread of courses than the traditionally black institutions. Many of these courses are highly specialized, for example rubber technology, explosives technology, and radar technology.

As the table below indicates, the predominantly African technikons generally have fewer courses than the white institutions at the National Higher Diploma level.

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Table 8.14.—Distribution of courses at the national higher diploma, master's, and laureatus levels, 1991

	NHD	Master's	Laureatus
Cape	24	16	8
Mangosuthu	0	0	0
M L Sultan	17	8	3
T N T	4	0	0
Natal	24	12	6
O F S	8	6	0
Peninsula	12	8	3
R S A	0	0	0
Witwatersrand	27	21	15
Vaal	20	13	6
Setlegelo	1	0	0
Ciskei	1	0	0
Port Elizabeth	16	9	7
Pretoria	30	26	13

Source: Committee of Technikon Principals, 1991

The distribution of high-level courses at the predominantly African technikons is insignificant in terms of training Africans who can compete with other races in the job market.

8.8 FACILITIES

The physical facilities at the technikons vary in quality. Workshops are adequate in all the predominantly white technikons. The Team visited engineering workshops in particular and used these as a basis to compare the facilities at each of the technikons visited. Even though many of the buildings are new, student growth has outpaced the rate of construction. Many of the libraries, for example, are already proving to be too small.

While most technikons complain of having inadequate facilities, the utilization of existing facilities is far from optimal. The extension of the academic day could be one way of improving this situation. The predominantly white technikons in particular have sufficient facilities to accommodate many more students.

African technikons will clearly need a massive infusion of funds to help them improve the quality of their facilities and workshop equipment. The newly established institutions, Ciskei and Setlegelo, still have to develop their laboratories and workshops. For instance one chemistry laboratory at Setlegelo, which is poorly

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equipped to begin with, is also used for physics and biology classes.

By virtue of their location, technikons for Blacks cannot rely on the local community for student accommodation. Students are unable to find suitable places to live in the overcrowded areas and shanty towns. Technikons for Whites also expect many of their students to live off campus. Student residences will be essential on all campuses if technikons are to increase their enrollments. The admission of Blacks to historically white technikons will necessitate additional on-campus accommodation.

8.9 FINANCE

Technikons have the same six major sources of funding as the universities. They are also facing a reduction in their state subsidy, although, up to 1989, the impact had not been as severe as on the universities. The inequalities in the capacity to generate alternative sources of funding also appear to be narrower between white and black institutions. While the Cape, Natal, and Vaal Triangle Technikons (all mainly white) and the Peninsula Technikon derive a significant proportion of their nonsubsidy resources from government and private research contracts and private donations, the Northern Transvaal and Mangosuthu Technikons (both black) derive a significant proportion of their resources from auxiliary enterprises. (Of course this may mean higher student residence costs.) Northern Transvaal also derives a significant proportion of its revenue from investment income. Nevertheless, although the black technikons have the capacity to generate some resources through alternative means, the absolute amounts generated are not of the magnitude derived by the mainly white institutions.

While the overall impact of the subsidy reduction has been neutral, some institutions have been more seriously affected than others. As Table 8.15 shows, Northern Transvaal, Wits, and Peninsula fared the worst, while the Vaal Triangle, RSA, OFS, Natal, M.L. Sultan, and Mangosuthu all received a real increase in their subsidy between 1988 and 1989. The budget for 1989 was allocated by the Committee of Technikon Principals, and it is not clear on what basis these funds were distributed.

Table 8.15.—Growth of government subsidy and enrollment, 1988-1989 (%)

Technikon	Subsidy real growth	Enrollment
Cape	- 2	14
N.T.	- 34	49
Mangosuthu	10	53
M.L. Sultan	9	34
Natal	15	10
OFS	36	2
Peninsula	- 16	9
P.E.	2	31
Pretoria	- 2	7
RSA	39	81
Vaal Triangle	12	37
Wits	- 17	40
All	0	33

Source: Computed from Bunting, 1991

As with the universities, the inequality in the distribution of resources is stark. M.L. Sultan (Durban), which has a student enrollment 16 percent in excess of Natal's, has a total revenue of only 57 percent of the latter's. As Table 8.16 shows, similar inequalities are also evident between the Peninsula and Cape technikons.

Table 8.16.—Technikon funds: some regional comparisons, 1989 (%)

	Enrolment	Revenue
Natal		
M.L. Sultan (as a proportion of Natal's)	116	57
Mangosuthu (as a proportion of Natal's)	31	22
Cape		
Peninsula (as a proportion of Cape's)	70	53

Source: Computed from Bunting, 1991

Tuition and residence fees differ significantly among technikons. The reasons for these differences include the following:

1. The shift from a heavily subsidized system toward a greater level of cost recovery is new to some technikons.
2. Fee increases may be interpreted as a political move to exclude the disadvantaged.
3. At some institutions fee increases are negotiated with student leaders, impeding their implementation.
4. Particular communities served by certain technikons cannot afford dramatic fee increases.

In general the financing of technical education is becoming a serious problem. Few African students can afford the high fees charged by technikons that are predominantly white. The predominantly African technikons continue to increase their enrollments, partly because their admission policies are progressive. Faced with this growth, they cannot go on charging low tuition and boarding fees. The student body at Peninsula Technikon is presently resisting efforts to raise residential fees. Unitra was faced with a demonstration while the Team was visiting because the technikon was barring students who had not paid their examination fees.

8.10 COST EFFECTIVENESS

Total expenditure by technikons increased from R337.8m in 1988 to R434.1m in 1989, a 29 percent nominal growth and 14 percent real growth. The smallest nominal increase in expenditure was by the Peninsula Technikon (4.3 percent or -10.7 percent in real terms). The largest increases were by the RSA Technikon (54 percent) and the Vaal Triangle (65 percent). As Table 8.17 shows, this wide distribution in expenditure patterns is reflected in the expenditure per student for the various institutions.

Table 8.17.—Expenditure per student, 1989 (rands)

Technikon	Educ. programs	Total expenditure
Cape	5,547	8,118
N.T.	5,334	7,910
Mangosuthu	6,493	8,020
M.L. Sultan	3,068	3,831
Natal	7,005	10,322
OFS	4,459	4,641
Peninsula	5,726	6,500
P.E.	5,078	7,204
Pretoria	5,360	7,913
RSA	1,050	1,437
Vaal Triangle	3,028	5,504
Wits	4,926	8,001
All	4,010	5,765

Source: Computed from Bunting, 1991

8.10.1 Unit costs

Table 8.18 provides a comparison of unit costs for weighted FTE students and credit students.

Table 8.18.—Comparison of unit costs per weighted FTE enrolled and per weighted credit student, 1989 (rands)

Technikon	Enrolled unit cost (1)	Credit unit cost (2)	2 : 1 (3)
Cape	8,720	11,450	1.31
N.T.	7,000	57,860	8.26
Mangosuthu	7,010	10,460	1.49
M.L. Sultan	5,480	9,270	1.69
Natal	10,280	13,800	1.34
OFS	3,890	5,830	1.50
Peninsula	7,730	13,010	1.68
P.E.	8,460	12,870	1.52
Pretoria	8,160	11,210	1.37
RSA	3,370	7,900	2.34
Vaal Triangle	7,750	12,560	1.62
Wits	10,400	17,260	1.66
All	6,970	12,150	1.74

Source: Bunting, 1991

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From Column (3) of this table, it is evident that the ratio of credit unit cost is high in most institutions but especially so at Northern Transvaal, M.L. Sultan, Peninsula, RSA, Vaal Triangle, and Wits. At Northern Transvaal, the unit cost of a credit student is eight times greater than that for a FTE student. This is undoubtedly related to the high failure rates at this institution. M.L. Sultan, Peninsula, and the RSA are also characterized by exceptionally high first-year failure rates.

See Appendix M for tables illustrating the cost per output unit for various fields of study. As with the universities, this cost varies considerably between technikons. It is extremely costly to produce diplomates in commerce at Northern Transvaal and Mangosuthu, in computer science at Wits and Vaal Triangle, and in the life sciences at Northern Transvaal. The differences in cost effectiveness, however, are less accentuated between the HW and the HB technikons than is the case for universities. The cost structures of M.L. Sultan and Peninsula compare favorably with those of the HW technikons in several faculties.

On the basis of these findings, the cost effectiveness of the technikons is rated by field of study in Table 8.19. This division is made on the basis of comparison with the lowest-cost-per-unit institution within a particular field of study.

Table 8.19.—Cost effectiveness by institution and field of study

Field of study	Moderate cost effectiveness	Low cost effectiveness
Architecture	Peninsula	
Commerce	Wits Peninsula	Mangosuthu N.Transvaal
Computers	- -	Vaal Triangle Wits
Engineering	Mangosuthu M.L. Sultan Peninsula	- - -
Health	M.L. Sultan	N.Transvaal
Life & Physical Sciences	P.E.	Wits N.Transvaal

Source: Derived from tables in Appendix M

8.10.3 Conclusion

The interviews and site visits indicated that most technikons are not being fully utilized. On the other hand, discussions with stakeholders in industries and within the institutions indicated

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that the technikons were preparing students adequately for the job market. Rationalization and articulation can improve both the internal and external efficiency of the technical training subsector. There is a great deal of duplication of courses, and many technikons have more staff than they need for present enrollment levels.

8.11 RATIONALIZATION

Under apartheid, technikons have been duplicated and have proliferated to serve the needs of different racial groups; hence the close proximity of technikons in some regions. A good example of this is in Durban where the campus of M.L. Sultan abuts that of Natal Technikon. Throughout the country, duplicate programs are conducted at considerable additional cost.

The consequences of the multiplicity of authorities responsible for technikons and technical colleges are varied. The most significant is the differential financing mechanism used for institutions in the RSA as opposed to those in the homelands and self-governing territories. Since financing of technikons in the RSA is based on a standard formula, they should receive equitable funding. This is not true for technical colleges. The location of institutions within a geographically defined group area has meant that black institutions are generally located outside of urban central business districts and, in most cases, quite a distance from the industrial and commercial centers.

Increasing costs and decreasing subsidies to technikons are beginning to make rationalization a necessity. Nevertheless, although apartheid is deplored in all its facets, the separate institutions that have been created theoretically provide mechanisms for people of color to enter technological fields in larger numbers. Rationalization, therefore, must be accompanied by a policy and a system that will ensure equity of access to all races.

8.13 EXEMPLARY PRACTICES

Port Elizabeth, Peninsula, Natal, M.L. Sultan, and Witwatersrand are making exceptional progress in admitting more students of color. In addition, Port Elizabeth seems to have made noteworthy strides in assisting black students who are unprepared in science and language. Its academic development programs are more attractive and more acceptable to students than the other programs the Team studied.

Even though its rector is white, Unitra seems to have made significant progress in Africanizing its leadership. Peninsula appears to be ahead of most other technikons in its willingness to share the decision-making process with students. However all technikons have committee systems that enable various constituencies and stakeholders to participate in discussions leading to important decisions.

The Swinton Road Technical College has taken the lead over other technical colleges in terms of its cooperation with local industry. It has managed to equip nearly all its workshops with donations from Toyota and other companies in the area.

Finally, the successful articulation program negotiated between the Technikon Orange Free State, the University of the Orange Free State, and the local technical college is also worthy of attention.

CHAPTER 9

TECHNICAL COLLEGES

9.1 INTRODUCTION

In their information brochure on "The Role of Technical Colleges," the Federation of Technical College Councils explains that the main aim of these institutions is "to serve the needs of the community for which they have been established." To achieve this aim, technical colleges provide education and training to meet the requirements of their commercial, industrial, and residential communities.

Technical colleges offer National Technical Certificate courses (usually abbreviated as NTC or N-courses) at levels 1 through 6. Levels 1, 2, and 3 are regarded as pretertiary, while levels 4, 5, and 6 are tertiary. The minimum admission to NTC 1 is a Standard 7 certificate with a minimum age of 16 years. Of the 72,174 students registered in 1990, 54,667 (76%) were studying at the secondary level. Some technical colleges offer skills training and upgrading programs to candidates with very little basic education, either to make them more employable or to bring them to a level of competency where they may enter the formal NTC 1 program.

Students take four courses at each of the six levels. The study period for each level is approximately 13 weeks, except for commercial programs that are offered on a semester basis. Course offerings range from building, artisan training, and electronics on the one hand to commercial programs and hair care on the other. The examinations at each level are set and marked centrally for the whole country; 40 percent is the subject pass mark.

9.2 GOVERNMENT OVERSIGHT

Technical colleges are regarded as postsecondary institutions and, as such, are subject to Own Affairs legislation. The National Education Act (Act 70 of 1955) gave the state control over all technical colleges. This act has been amended to provide for institutions for other race groups.

Curriculum change and development is a long and tedious process largely controlled by the Department of Education, House of Assembly. Because technical colleges have no link with the Department of National Education, curriculum changes must be channeled through each Own Affairs minister.

9.3 ENROLLMENTS

Historically, technical colleges were not empowered to determine their own admission criteria. The Technical College Act of 1981 entitled the Director General in the House of Assembly to determine the conditions and criteria for admissions. Since that time technical colleges have been viewed as part of the school subsector. Government policy has been that this subsector should remain segregated; thus in 1990 only 2 percent of the students at white colleges were black. It was only in 1991 that all technical colleges were allowed to determine their own admissions criteria.

As the following tables show, coloured and African students are grossly under-represented at technical colleges even though the school population has shown tremendous growth.

TABLE 9.1.—Enrollment of technical college students by race, 1987-1990

Year	White	Indian	Coloured	African	Total	Growth
1987	41,670		3,362	11,014	54,076	
1988	42,397	3,682	4,014	12,716	58,795	8.7%
1989	45,694	5,882	4,160	13,798	65,374	11.2%
1990	48,852	5,976	4,625	12,721	72,174	10.0%

Sources: Du Preez, 1989 and *Educational Realities in South Africa*

Table 9.2.—Number of students per thousand of population studying at universities, technikons, and technical colleges

Population group	Number per thousand population		
	Universities	Technikons	Tech.colleges*
White	31	10	10
Indian	20	6	6.2
Coloured	6	2	1.45
African	4	0.5	0.45

* Based on population stats which include the TBVC.

Sources: Du Preez, 1989 and *Educational Realities in South Africa*

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Students at technical colleges are still predominantly male, with women constituting 38 percent of the total student population for 1990. Of the 72,174 students registered in 1990, 26 percent were white females, 4 percent were Indian females, 2.3 percent were coloured females, and 5.5 percent were African females.

As the following table shows, the largest gender disparity within racial groups appears among Africans, while Indian students are almost equally represented by gender.

Table 9.3.—Student enrollment by race and gender, 1990

Race	Enrollment	Gender %	
		Male	Female
White	48,852	60.8	29.2
Indian	5,976	52	48
Coloured	4,625	63.7	36.3
African	12,721	69	31
Total	72,174	61.7	38.3

Source: DNE, NATED 02-214 (90/08)

9.4 FACULTY

General norms are prescribed for the number of posts to which an institution is entitled as well as the ratio between the various types or levels of posts. Technical colleges require applicants to have an M+3 qualification and a minimum of five years of industrial or commercial experience. The autonomous colleges can make appointments up to a particular level, usually senior lecturer. All the other colleges make recommendations to the minister who often exercises his right to make the final decision.

As Table 10.4 below indicates, the majority of the staff employed have either an M+3 or M+4 qualification. Thus they satisfy the minimum academic requirement for appointment. Listings of the qualifications of staff members in the college brochures suggest that, while technically qualified, they do not have sufficient academic underpinning in the field of education. Yet they are required to use special skills in curriculum development, instructional material design, and instructional methodologies. Staff development in this important area of technical education could lead to improved teaching effectiveness.

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Table 9.4.--Staff qualification by department and gender, 1988

Department		<M+3	M+3	M+4	>M+4	Total
Assembly (White)	M	22	348	423	302	1,095
	F	17	187	389	94	687
Delegates (Indian)	M	0	48	34	19	101
	F	2	13	18	6	39
Represent. (Coloured)	M	2	134	89	54	279
	F	4	37	40	6	87
DET (African)	M	20	178	98	57	353
	F	14	35	91	24	164
Nat.states	M	73	284	41	19	417
	F	9	16	22	5	52
Total		163	1,280	1,245	586	3,274
% of total		5	39	38	18	

Source: DNE, NATED 02-215 (91/01)

There are no black staff members lecturing at traditionally white technical colleges. As with technicians, however, there are many white staff at black institutions. Whereas about 50 percent of the institutions are traditionally white, Table 9.5 shows that whites constitute about 80 percent of the total staff at all the technical colleges in the country.

Table 9.5.—Number of technical college educators with permanent appointments by race group, 1991

Race group	Personnel by gender			% females	% of total by race
	Female	Male	Total		
White	946	1,621	2,567	37	79
Indian	35	98	133	26.3	4.1
Coloured	40	227	267	15	8.2
African *	28	242	270	10.4	8.3
Total	1,049	2,188	3,237	32.4	

* Excludes TBVC

Source: DNE, NATED 02-214 (91/08)

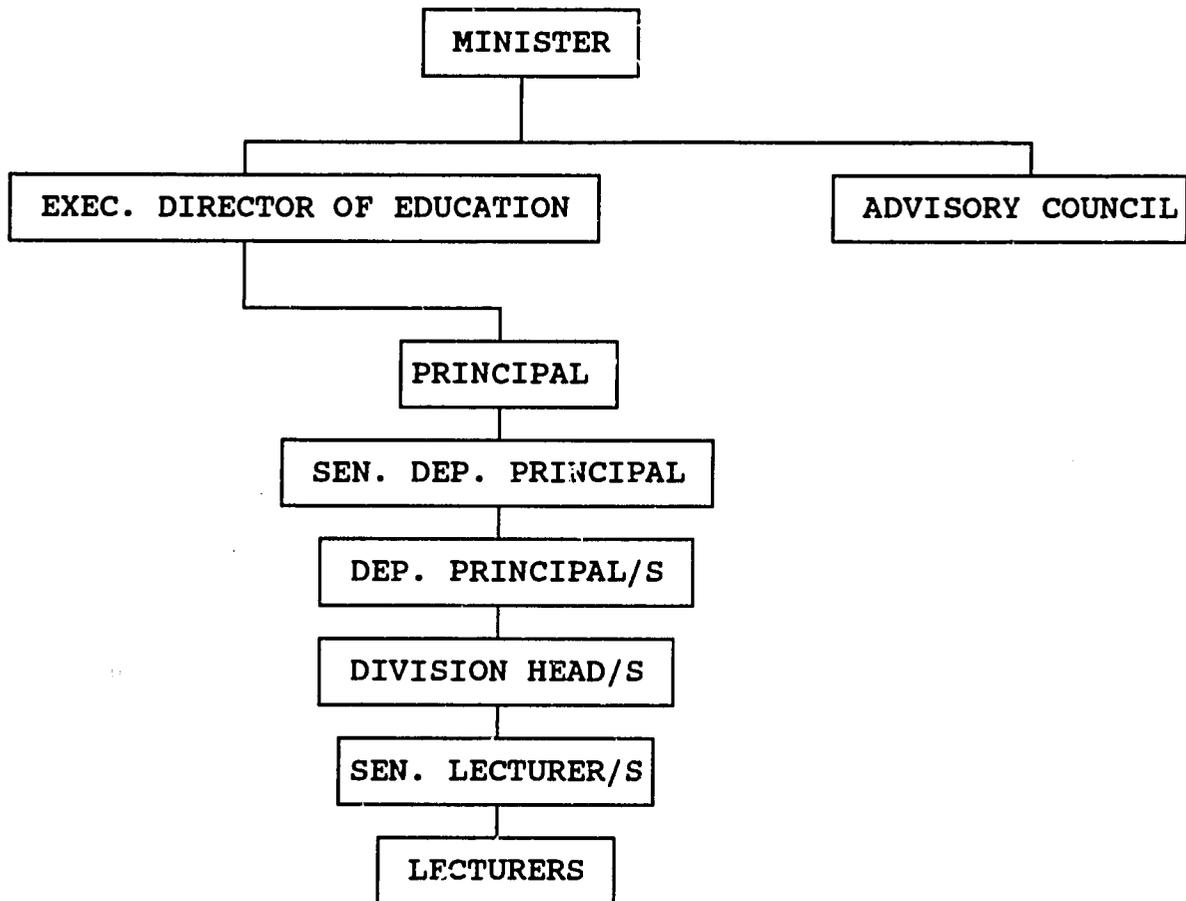
9.5 ADMINISTRATION

As mentioned above, technical colleges have traditionally been grouped within the school sector and are therefore subject to significant central control by the departments of education. They do have advisory councils, generally made up of between 7 and 15 members drawn from local authorities, business and industry, departmental officials, and people who have a particular interest in or knowledge of technical education. Advisory councils have no authority over the budget, the staff, or the administration of the institution. Their role is primarily to assist in curriculum and course design and to advise the minister on a range of issues. Since 1985, some technical college councils in the House of Assembly have been granted greater decision-making authority. Technical colleges in the House of Delegates are still directly accountable to the Executive Director of Education, and they are only now starting to establish advisory councils.

The management of the institution is the responsibility of a principal who reports to the executive director of education of the appropriate education department or to his or her nominee. The most common lines of authority and responsibility are as follows:

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Figure 9.1.—Technical college organogram



Thus authority over and control of technical colleges is vested in senior departmental officials and the principal, with a strong influence from the advisory committee.

Table 9.6 below shows that, with the notable exception of the coloured institutions, all the power positions in technical colleges are in the hands of Whites.

Table 9.6.—Racial composition of the senior staff and advisory councils of technical colleges, 1991

Government department	Number of collg.	Distribution of positions by race				
		Position	White	Indian	Colrd	Afrcn
Assembly (White)	69	Principal V. Princ. Council	69 all all	0 0 0	0 0 0	0 0 0
Delegates (Indian)	3	Principal V. Princ. Council	2 0	1 0	0 0	0 0
			No councils yet			
Representatives (Coloured)	14	Principal V. Princ. Council	5 4 47	0 0	9 2 55	0 0*
DET (African)	22	Principal V. Princ. Council	22 50%	0 No data	0	0 50%†
Homelands and self-gov. states	28	Principal V. Princ. Council	No information			

* Only 6 posts exist, 4 institutes have no councils.

† Estimated by DET

Source: Personal communication 21/11/91

While some of the larger technical colleges have SRC's, student governance is generally underdeveloped at technical colleges. Only at the white institutions are staff organized into a unique staff association. At the black colleges, black staff members belong to different associations such as the Public Service League, while white staff members are organized separately. None of these formal or informal staff associations has a very strong lobby with the education departments or with the Association of Technical College Heads.

9.6 RELEVANCE OF CURRICULUM

Programs offered at technical colleges and technikons must prepare students to work in a country that is both developed and underdeveloped. On the one hand, South Africa is highly industrialized by African standards; on the other hand, a large

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percentage of its urban population lives in shanty towns. South Africa also has a large rural population, especially in the homelands and independent states. A province such as Natal has a substantial rural population with needs that are very different from those of the people in urban areas such as Durban. Hence courses must be relevant and responsive to the needs of different populations.

9.7 FACILITIES

While it was not possible to determine the appropriateness and adequacy of physical facilities at all technical colleges, a general impression is presented based on the sampling of colleges that were visited. The quality of the facilities generally follows the funding pattern for education within the various departments. The white technical colleges have the best facilities, while some of the most under-resourced institutions are in the self-governing states. The wide range of resourcing (both capital and current) between and within education departments is a matter of concern. The high-quality institution provided by the DET in Durban is an exception to this generalization.

In general, however, technical colleges are poorly or inappropriately equipped. Some of them, like the ones in Umlazi and Gugulethu, look like underfunded high schools: they do not have any equipment at all. Of all the technical colleges visited, only one was well equipped. After visiting this institution, it became clear to the Team that a technical college's leadership is critical to its quality and even survival. In this particular case, the principal is a man of vision who has been able to convince industry to assist him in equipping his institution. Contrast this to another technical college we visited where the principal was dismantling his equipment and offering only theoretical courses in the hope that his students would gain their practical experience in industry.

9.8 FINANCE

Other than the technical colleges that have gained autonomy in the House of Assembly, the majority of colleges operate on a budget system that is strictly enforced. Institutions submit a budget for current and capital expenditure to the relevant education department. This budget is approved, with or without adjustment, and the college is then entitled to incur the expenditure through the finance division of the department, which places the orders and administers the payments.

The college may establish a fund that can be administered by the principal and the advisory council. However this fund is subject to regulations set by the education department as well as to departmental audits. Colleges are permitted to augment the fund by retaining student registration fees. Tuition fees are collected by the college and then paid to the education department.

Total expenditure on technical colleges for 1989 was R298.1m, of which R245.6m (82%) was recurrent expenditure and R52.5m (18%) was capital expenditure. Although tertiary enrollment comprised approximately 23 percent of total enrollment in 1989, it is impossible to separate tertiary education expenditure from total expenditure. Capital expenditure of significant amounts occurred in the white, coloured, urban African (DET), and QwaQwa education systems.

Expenditure by education department and expenditure per student by race are provided in Tables 10.8 and 10.9. The white education department with 66 percent of total enrollment receives 36 percent of the funds, the coloured department with 6 percent of the students receives 17 percent, the Indian department with 8 percent of enrollment spends 4 percent of the funds, and the African education systems with 20 percent of enrollment get 43 percent of the allocated resources.

Table 9.7.—Expenditure by education department, 1989 (Rm)

Education department	Expenditure		
	Current	Capital	Total
House of Assembly	98.7	10.1	108.8
House of Delegates	10.2	0.4	10.6
House of Representatives	39.3	12.2	51.5
DET	59.3	20.1	79.4
Self-governing homelands	38.1	9.7	47.8
Total	245.6	52.5	298.1

Source: Computed from DNE (1990)

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Table 9.8.—Expenditure per student by race, 1989

Race	Enrollment	Current exp. per student (R)	Total exp. per student (R)
African	13,798 (20%)	10,053	13,128
Coloured	4,160 (6%)	8,956	11,736
Indian	5,882 (8%)	1,365	1,419
White	45,694 (66%)	1,888	2,081
Total	69,534 (100)	3,532	4,287

Note: Excludes TBVC

Source: Computed from DNE (1990)

In summary, unequal racial distribution of resources by student enrollment has led to disproportionate expenditure per student in the African and coloured systems. This is due to the segregated education structure and to the geographic dispersion of the technical colleges for these two groups. As a result, these institutions are not cost effective.

9.9 ARTICULATION

Students can move relatively easily from schools to technical colleges because both institutions belong to the same subsector of the education system. However articulation between technical colleges and tertiary institutions is virtually impossible without a significant loss of time for the student. Such transfers are confined to specific institutional negotiations.

Students who qualify at a technical college with an NTC III (four subjects) and pass the two official languages at the Senior Certificate level are regarded as having the equivalent of a Senior Certificate. Therefore they are technically eligible for admission to any tertiary program that does not have matriculation exemption as a minimum requirement. In practice, however, few technikons will admit such students, either because they give preference to enrollees from an academic school stream or because they have increased their admission criteria beyond this limit. Given the reluctance of the technikons to grant them access, these students continue with the NTC IV to VI certificates rather than trying to transfer to a technikon.

In a 1991 policy statement, the Committee of Technikon Principals recommended that the "role and position of the technical college be re-established as a natural precursor for technikon education." This statement should be translated into a system that will

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facilitate the process. Articulation between the training programs run by industry and the formal programs at the technical colleges should also be examined in a more detailed study.

9.10 RECOMMENDATIONS FOR TECHNIKONS AND TECHNICAL COLLEGES

9.10.1 Equity for African students

9.10.1.1 Enrollments

The number of African students in technical training institutions should be increased by the following measures:

1. Improving the quality of African primary and secondary education
2. Encouraging formerly white technikons to increase their intake of African students
3. Discouraging former white technikons from raising their admission standards

Mechanisms should be developed to ensure that African applicants for admission (especially females) are well informed about the technikons and technical colleges, and are encouraged to enroll in programs from which they have traditionally been excluded. Technikons could institute a quota system to ensure that a certain number of African students are admitted each year.

Students from disadvantaged backgrounds should be given various forms of financial assistance including the following:

- Grants, scholarships, and bursaries
- Bonded scholarships or bursaries
- Sponsorship by public or private employers
- Subsidized services such as meals and housing
- Tax concessions for private educational expenditure
- Subsidized and unsubsidized student loans at bank market rates

9.10.1.2 Staff reorientation

Staff should be assisted in overcoming the social and educational problems that are likely to emerge along with the new racial and political environment in tertiary institutions. A unit should be

established at each institution to mentor individual staff members.

9.10.1.3 Academic support programs

Intervention aimed at improving retention is an important way to address equity issues. Institutions should be funded to develop teaching and learning strategies to improve the pass rates of black students. This funding could be linked to the institution's commitment to improve the retention rate by a predetermined number of percentage points.

9.10.1.4 Equal access to specialized programs

Africans must be given access to courses that have been monopolized by Whites, especially at the National Higher Diploma, master's, and laureatus levels. Programs where Blacks are currently under-represented include engineering, science, dental and plastics technology, and radar sciences. This imbalance could be addressed by making bursaries available to black students discipline-specific.

9.10.2 Equity in staffing and leadership

Many more Africans need to be employed in both teaching and senior management and administrative positions. As indicated earlier, there were 2,005 Whites, 94 coloureds, 131 Indians and 59 Africans teaching in technikons in 1990. This situation did not change drastically in 1991. Massive staff development programs are clearly needed to increase the number of black lecturers. One possibility is to have technikons and technical colleges identify their most competent senior black students with the potential of becoming faculty members. Scholarships would be provided so that these students could obtain the qualifications and industrial experience leading to a faculty appointment. Students could be sent overseas or to local institutions on scholarships provided by individual institutions, industries, the state, and donor agencies. Black women should constitute at least 50 percent of the students selected for this program.

Existing black staff members at technikons and technical colleges should also be assisted to improve their qualifications so they are able to compete for senior posts that become available. In addition, Africans in industry should be encouraged to take up teaching in technikons by offering them attractive packages. Rectors must make an effort to look for Africans and encourage them to apply for teaching positions. A recruitment policy should be established that involves a broad talent search as opposed to simply advertising for "qualified people."

Finally, no Africans are rectors of technikons and technical colleges. People of color need to be represented at this level.

Africans must take part in the choice of leaders and in the budgeting process. Moreover African students and parents should have an opportunity to contribute fully to the activities of technical institutions, and staff should play a significant role in policy formulation and implementation. Both the system as a whole and the locus of decision-making in individual technikons and technical colleges need to be decentralized.

9.10.3 Development of instructional materials

Units should be established throughout the subsector for the design and development of instructional materials. Units for different disciplines could be located at different institutions with the proviso that they service the entire subsector. This program could help to lessen the resource cost for students by reducing their dependence on expensive imported publications.

9.10.4 Research

Institutional policies should be formulated to allow staff to engage in contract research activities, both individually and in collaboration with industry. To motivate staff to participate, such research activities should count toward their promotion within the institution. Research should be problem-specific and directed to alleviating problems affecting local communities in areas such as health and housing. Collaborative research should also be encouraged between technikons and universities.

9.10.5 Community service programs

Policies should be developed to encourage students to participate in the new South African society. Qualified students should work in rural and economically underdeveloped communities in areas such as public health and electrification both during and after their formal educational program.

9.10.6 Facilities

Academic and residential facilities in some of the black institutions need to be upgraded. An indepth needs analysis is required.

9.10.7 Rationalization

Compared to university students, the ratio of technical college and technikon students per thousand of population is very low. While the capacity of technical colleges needs to be expanded in order to prepare more technically trained people, there could also be a degree of rationalization between the technikons and the technical colleges at the more advanced levels (NTC IV and higher). Only 24 percent of total technical college enrollments are located at these levels.

Of the 137 technical colleges, many are small institutions that do not operate effectively and attract few students. Therefore it may be advantageous to combine institutions for administrative purposes while using facilities more efficiently in order to increase student intake.

CHAPTER 10

COLLEGES OF EDUCATION

10.1 OVERVIEW

Teachers are trained in colleges of education, in universities, and in technikons. Most primary and some secondary teachers are trained in the colleges. Universities educate most of the secondary teachers and a small number of the primary. Nearly all secondary teachers of vocational subjects are trained in technikons, and a small and diminishing number of colleges are devoted to the training of black technical teachers.

The government has prescribed a comprehensive set of criteria for the nationwide recognition of teachers' qualifications. These criteria set forth the subjects to be taken and the minimum admission requirements for the various curricula. For example, a curriculum for the one-year postgraduate higher diploma in education (training teachers for secondary school) must follow an approved degree and must include education (history, philosophy, psychology and sociology of education, didactic, school guidance and counseling, and the organization and administration of education), computer education science, Bible education, teaching aids, methods in two secondary school subjects, a language competence certificate, and at least six weeks of practice teaching.

10.2 OVERSIGHT OF TEACHER EDUCATION INSTITUTIONS

Table 10.1 outlines the various oversight arrangements for South Africa's teacher education institutions.

Table 10.1.—*Academic supervision of teacher education institutions*

	Auton	Affil. to univ	DET	House of Rep/DEC	House of Delg/DEC
University faculties of education	X				
Giyani College of Education		X			
Other colleges in self-governing states			X		
Colleges in Transkei and Bophuthatswana		X			
Colleges in Ciskei and Venda			X		
Black colleges			X		
Coloured colleges				X	
Indian colleges					X
White Colleges		X			
Promat College of Education		X			
Technikon schools of education		arrangements differ according to administering authority			

With a single exception, each of the colleges is owned by one of the government departments of education. The exception is the Promat College, owned by the Promat Trust, with no racial restrictions on admissions, but with a de facto African enrollment.

Of the state-owned colleges of education, the largest group comprises those run by the governments of the self-governing states. With the exception of the Giyani College of Education in Gazankulu, which is affiliated with the University of the Witwatersrand, these colleges follow the curricula and examinations of the national Department of Education and Training (DET). This

arrangement also is applicable to another 15 colleges owned by the DET outside the homeland areas, and to the colleges of two of the independent states, Ciskei and Venda. Those in Transkei and Bophuthatswana are affiliated with those states' respective universities.

The colleges set up for Indian and coloured students are academically controlled, as well as owned, by the respective racially specific ministries of education.

All of the 12 white colleges are now permitted to accept black students, but in some cases under restrictive conditions. Admissions criteria are determined by the councils of the individual institutions. Owned by the House of Assembly, each of the white colleges of education is affiliated with a university. The university participates in the decision-making bodies of the college, the appointment of at least the senior staff, the approval of curricula and syllabi, and the moderation or external review of examinations.

Most teachers of technical and commercial subjects are trained in the schools of education of the technikons. The Johannesburg College of Education also includes provision for the training of vocational teachers.

In white colleges and at Promat College of Education, the basic teacher education program is four years. In the government-owned black colleges, it is four years for secondary teachers and three years for primary. Certain colleges also have postbasic curricula for the upgrading of teachers.

In addition to the colleges of education, all the universities other than Medunsa offer their own teacher training programs. Within the national criteria, the universities' curricula for teacher education vary considerably in content, emphasis and teaching strategies. Common programs include postgraduate diplomas in education and four-year composite degrees for secondary (and in a few cases primary) teachers. VISTA University also offers a certificate and diploma in secondary education as well as a primary education certificate.

10.3 STUDENTS

10.3.1 Patterns of enrollment

Fourteen of every 100 students currently enrolled in the tertiary sector are in colleges of education. Students are admitted with a Standard 10 School Leavers Certificate. With a few exceptions, enrollments in teacher education institutions are confined to the racial group for which they were established. The exceptions are among the English-medium white universities, where there are

increasing numbers of black teacher trainees, and certain of the English-medium white colleges whose provincial government owners are in the process of diminishing or removing racial restrictions for entry.

Student data for individual colleges either owned or controlled by the DET are not available. Data are available for the DET system as a whole, however. Table 10.2 below indicates the racial composition, sex, and number of students enrolled in the two major qualification groups, diploma and postdiploma. The data are based on preliminary education statistics for 1991.

Table 10.2.-Number and percent of students enrolled for diploma and postdiploma by racial group and sex, 1991

Race group		Diploma	Percent	Postdip.	Percent	Totals	M/F percent
African *							
DET RSA	F	6,524	96	305	4	6,829	69
	M	3,014	96	122	4	3,136	31
	Total	9,538	96	427	4	9,965	
Self-gov.	F	16,158	100	0	0	16,158	63
	M	9,672	100	0	0	9,672	37
	Total	25,830	100	0	0	25,830	
Whites	F	419	6	6,157	94	6,576	75
	M	83	4	2,107	96	2,190	25
	Total	502	6	8,264	94	8,766	
Indians	F	22	2	990	98	1,012	59
	M	8	1	706	99	714	41
	Total	30	2	1,696	98	1,726	
Coloureds	F	3,417	71	1,367	29	4,784	61
	M	1,925	63	1,146	37	3,071	39
	Total	5,342	68	2,513	32	7,855	
All Grps	F	26,540	75	8,819	25	35,359	65
	M	14,702	78	4,081	22	18,783	35
	Total	41,242	76	12,900	24	54,142	

* TBVC not included

Source: DNE, Preliminary Education Statistics for 1991

At present only 4 percent of the African students are enrolled in postdiploma programs. This is because historically the African

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colleges offered only diploma courses. Recently, however, some have begun offering postdiploma programs and some of the colleges in the other racial groups have begun admitting African students.

All white colleges affiliated with white universities and the two Indian colleges offer postdiploma courses. Ninety-eight percent of the Indian and 94 percent of the white students are enrolled in these programs.

Women lead men in enrollments in all racial groups and comprise 65 percent of the student population in the colleges. The white colleges have the highest proportion of women (75 percent), and the Indian colleges the lowest (59 percent).

Table 10.3 provides a comparative analysis of staff-student ratios.

Table 10.3.—*Ratios of lecturers to students, administrative staff to students, and service staff to students by race, 1989*

Race	Lecturer-student ratio	Admin. staff-student ratio	Service staff-student ratio
African	1:10	1:31	1:30
Coloured	1:17	1:35	1:36
Indian	1:11	1:13	1:88
White	1: 9	1:15	1: 9

Source: Computed from DNE statistics, 1990

This table suggests that financial and human resources are inequitably distributed between African and coloured colleges on the one hand and white and Indian colleges on the other. In the case of white colleges, this is probably due to low and declining enrollments and overstaffing. Several of these institutions have been closed because they had too few students. Indian colleges are characterized by low lecturer-to-student and administrative-staff-to-student ratios but by the highest service-staff-to-student ratios.

Many campuses, even relatively new ones, are overcrowded. There are several reasons for this. More black students are attending colleges of education. The repeat rate of students who fail or who return after dropping out (usually after the first year) places a burden on the system. Some estimates suggest that over 50 percent of students take more than 3 years to complete a diploma. The number of students fulfilling the requirements for a diploma is summarized in Table 10.4 below.

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Table 10.4.—Number of students enrolled and completing requirements in diploma courses, 1989

Race	Number enrolled	Number completing
African *		
RSA	29,670	5,481
Homelands	20,181	4,025
White	875	394
Indian	-	-
Coloured	6,676	1,258
TOTAL	56,529	10,764

* TBVC not included

Source: Personal communication from DNE, EduSource, 1991

The low completion percentages of African and coloured students suggest that a large number of them were either repeaters or drop-outs.

10.3.2 Student governance

Each college of education has a democratically elected student representative council (SRC) which represents students in dealings with the administration and the system. One notices a marked difference in the concerns and sophistication of the SRC's among the colleges. Urban African students and, to a lesser degree, rural Blacks have been actively involved in protests against apartheid. These students are politically aware and willing to act against perceived injustices.

10.4 FACULTY

10.4.1 Distribution by race and gender

Colleges were not permitted to appoint staff members from other races until 1984. The exception was that white staff could be appointed to black colleges. Of course the reverse was not permitted. With the lowering of this restriction, there is still little mixing of races in colleges except in the black ones. The following table presents data on the race and gender of faculty throughout the subsector.

Table 10.5.—Teaching staff of all colleges of education by sex and race, 1988-89

Teachers		Schools						
		White	Asian	Coloured	DET	SGT	Total	% of tot
White	M	535	8	9	330	161	1,043	
	F	495	2	51	419	312	1,279	
Total		1,030	10	60	749	473	2,322	51
Coloured	M	0	0	283	0	1	284	
	F	0	0	158	0	0	158	
Total		0	0	441	0	1	442	10
Asian	M	0	74	5	0	16	95	
	F	0	27	4	0	14	45	
Total		0	101	9	0	30	140	3
African	M	0	0	0	165	842	1,007	
	F	0	0	0	169	460	629	
Total		0	0	0	334	1,302	1,636	36
TOTAL	M	535	82	297	495	1,020	2,429	53
	F	495	29	213	588	786	2,111	47
Total		1,030	111	510	1,083	1,806	4,540	

Source: DNE, Preliminary Education Statistics for 1989 and personal communication with DNE

Fifty-one percent of all lecturers in colleges of education are white. African lecturers represent 36 percent of the total, and coloureds and Indians the other 13 percent. All the lecturers in white colleges of education are white. The staff of the other colleges is racially mixed to some extent. Forty-three percent of the lecturers in African colleges are white, and 60 percent of that group are women. Overall, 47 percent of college staffs are women and 53 percent are men. DET-owned colleges in the nonhomelands have the highest percentage of women, 54 percent, and the Indian colleges have the lowest, 26 percent.

10.4.2 Qualifications

The designations of rank for colleges of education are: lecturer, senior lecturer, head of department, vice rector, and rector. The qualifications required for the posts vary with the racial orientation of the college and are set by them. All lecturers in white colleges must have a teaching qualification and a minimum of

five years teaching experience. In addition, senior lecturers must have an honors or master's degree, and department heads and rectors require a master's and three years teaching experience in college. The DET colleges are now using the same criteria for employment.

The requirements in the black colleges in the self-governing homelands vary according to their individual needs. At present all black colleges are moving toward the degree requirement, but some of the more isolated ones must take less qualified people. When colleges in the self-governing homelands are unable to find lecturers with even minimal qualifications, the DET will sometimes send in a lecturer until a qualified candidate can be located.

Table 10.6 below summarizes the number of lecturers grouped by race in each qualification category for all colleges of education. Definitions of relevant qualification categories are found below the table.

Table 10.6.—Qualifications of lecturers in colleges of education by race

Race	Qualification categories											
	a3	a2	a2m	a1	A	B	C	D	E	F	G	Not cat
African colleges: DET												
White	0	0	0	0	2	2	62	248	219	142	50	23
African	0	0	1	4	39	41	75	79	79	14	1	2
Total	-	-	1	4	41	43	137	327	298	156	51	25
African colleges: SG Homei.												
White	-	-	-	-	-	7	71	190	127	49	13	-
Coloured	-	-	-	-	-	-	-	1	-	-	-	-
Indian	-	-	-	-	-	-	-	4	5	4	2	-
African	1	2	5	7	20	40	208	533	407	55	12	12
Total	1	2	5	7	20	47	279	728	539	108	27	12
White colleges:												
White	-	-	-	-	1	2	17	218	240	323	201	28
Total	-	-	-	-	1	2	17	218	240	323	201	28
Indian colleges:												
White	-	-	-	-	-	-	1	3	3	1	-	2
Indian	-	-	-	-	-	-	2	8	24	51	7	9
Total	-	-	-	-	-	-	3	11	27	52	7	11
Coloured colleges:												
Whites	-	-	-	-	-	-	7	20	20	10	3	0
Coloured	-	-	-	1	2	10	31	101	170	95	14	17
Indian	-	-	-	-	-	-	1	3	3	2	-	-
Total	-	-	-	1	2	10	39	124	193	107	17	17

Note: C - Std 10 plus three years apposite training
D - Std 10 plus four years apposite training
E - Std 10 plus five years apposite training
F - Std 10 plus six years apposite training. Only professional qualified educators can be classified under category F, and only provided such persons are in possession of a recognized completed university degree.

Sources: DNE, Preliminary Education Statistics, 1989 and personal communication with DNE

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By combining the two highest category totals for each college, one can make an informal comparison of the qualifications of the lecturers. The majority of the lecturers in the African and coloured colleges fall in the D and E categories, that is, Standard 10 plus four or five years. The majority of the Indian and white lecturers are in the E and F categories, Standard 10 plus five or six years. Thus most of these lecturers have taken postdiploma programs, and those in category F have degrees. In summary, many of the lecturers in the African and coloured colleges are disadvantaged regarding educational qualifications. This reflects the lower requirements for employment noted above.

10.4.3 Faculty associations

All teachers employed by the white department, including college of education staff, must be registered with the Teacher's Federal Council. This professional organization is represented on all departmental advisory committees and is often quite influential. College teachers may also join local and regional organizations on a voluntary basis. Among other things, these organizations provide forums for teachers to discuss common interests and problems. Attempts have been made recently to set up national organizations as well. For example the South African Democratic Teachers Union and the National Professional Teachers Organization of South Africa were established in 1990-91.

10.5 FACILITIES

10.5.1 Campuses

Since 1980, many DET-owned or operated colleges of education have had new campuses built or old ones rebuilt or augmented. Older campuses are in good repair and attest to an active maintenance program. Agriculture classes in the colleges are often responsible for landscaping the campus, which often makes the difference between drab and pleasant surroundings.

10.5.2 Student housing

Table 10.7 below shows that 34 percent of the students presently enrolled in colleges of education live in college-provided housing. Of that group, 56 percent are students attending DET colleges in the self-governing homelands, most of which are in rural areas.

Table 10.7.—Number of students using college housing

Race	Male	Female	Total
African:			
RSA	1,311	1,982	3,293
Homelands	4,967	7,199	12,166
White	1,506	3,407	4,913
Indian	70	112	182
Coloured	533	723	1,306
Totals	8,437	13,423	21,860

Source: Personal communication from DNE, EduSource, 1991

Most students attending colleges of education in urban areas live at home or with relatives. Students in rural areas depend on college housing. Students interviewed at one rural institution where no housing is available had to find affordable accommodation in villages about 45 minutes from the campus by taxi. They were often late for class. As the other races begin to open their colleges to African students, housing will be a problem for them if campus residences are not provided. Many communities still will not rent to African students. Of course the demand for housing might abate if instruction were more efficient and the output of students increased.

10.5.3 Libraries

Most of the DET colleges visited had excellent library buildings, but they lacked even a basic collection relevant to the curriculum. Two of the libraries contained only children's books and a few works of adult fiction. Apparently the DET provides funds for buildings and equipment, but not for books. These must be paid for out of student fees, and they are unfortunately low on the list of priorities.

The libraries in the white colleges were good to excellent in terms of the quality and quantity of the collection. Some of the libraries also had video and audiocassette facilities for student and staff use.

10.5.4 Audiovisual equipment

All colleges visited had audiovisual equipment including overhead projectors, audiotape recorders and playback units, slide projectors, and at some colleges, a videocassette recorder and playback unit. This equipment was well maintained and operational on all campuses visited. A technician was in charge of maintenance and distribution.

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10.5.5 Microteaching facilities

All colleges visited had microteaching facilities. The DET institutions had one videocassette recorder and playback unit and one monitor. This was hardly adequate considering the number of students being served. In most colleges, students would be videotaped only once or twice during the year.

One DET college had a video projector in a large tiered lecture room where students could view and discuss videotapes of microteaching sessions. Unfortunately the room lacked drapes to make it sufficiently dark.

10.6 FINANCE

Because of the paucity of data on teacher training, the financial analysis is comparatively brief. No data at all were available for the TBVC regions. Information for other areas was only available for 1989, so a time trend analysis of expenditure is not possible. Finally, data are compiled only by education department and not by individual institution.

Total expenditure on colleges of education for 1989 was R678.3m, of which R523.3m (77%) was recurrent expenditure and R155.0m (23%) was capital expenditure. Spending by education department is provided in the table below. Catering to 20 percent of the students, the white education department receives 23 percent of the funds; the Indian department with 2 percent of the students spends an equivalent amount; and the coloured department with 18 percent of the students spends 24 percent of the budget. The African education departments have 60 percent of the students and receive 51 percent of the funds. Sixty-nine percent of capital expenditure, however, is in the African education departments, with most of these resources being used for building programs.

Table 10.8.—Expenditure by education department, 1989 (Rm)

Education department	Expenditure		
	Current	Capital	Total
House of Assembly	137.9	17.1	155.0
House of Delegates	13.1	0.5	13.6
House of Representatives	131.8	31.2	163.0
DET	113.6	22.9	136.5
Self-governing homelands	126.9	83.3	210.2
Total	523.3	155.0	678.3

Source: Computed from DNE (1990)

Table 10.9 below shows the expenditure per student by race.

Table 10.9.—Expenditure per student by race, 1989

Race	Enrollment	Current exp. per student (R)	Total exp. per student (R)
African	29,763	8,081	11,649
Coloured	8,781	15,010	18,563
Indian	1,235	10,607	11,012
White	10,125	13,620	15,309
Total	49,904	10,486	13,592

Note: Excludes TBVC

Source: Computed from DNE (1990)

10.7 THE DET-CONTROLLED COLLEGES

10.7.1 Curriculum and institutional ethos

The largest group of colleges (66 of the 101) are academically controlled by the Department of Education and Training. This group comprises those which are owned by the DET, those in the self-governing states, and those in Ciskei and Venda. The syllabi and prescribed approaches of the DET are particularly influential in the education of black students.

While the training offered by a number of teacher education institutions is consistent with the concerns and values of a

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post-apartheid South Africa, this is not true of the DET-controlled institutions. These colleges are permeated by values and strategies that are inconsistent with international developments in teacher training and antithetical to the democratic reconstruction of education in South Africa. Many of the syllabi embody a narrow educational philosophy; they focus on the material that the teacher-trainees will eventually teach rather than on the students' own education. The prescribed programs do not encourage trainees to develop critical abilities to apply to their own classroom situation.

The authoritarian spirit in the colleges permeates not only the curriculum but the institutional ethos as well. As noted by two staff members familiar with this group of institutions:

Most colleges function on an organizational pattern that emulates that of a secondary school, with an inflexible and full time-table marked by bells and lecturers moving in and out of isolated classrooms, and recreating discrete lessons to separate class-groups Given an allocation of 45 periods and up to 18 separate subjects . . . it becomes self-evident that students will find the curriculum fragmented, confusing, demoralizing and disempowering The consequence of this fragmentation and the absence of any real attempt to confront or model realistic alternatives is that students are . . . "cooled out," lose their idealistic aspirations, and give up hope of operating differently. (Kenyon, 1991)

This ethos derives from a school of thought called "Fundamental Pedagogics" that dominates the philosophy of education of all the Afrikaans-medium teacher education institutions, as well as most of the black ones. Fundamental Pedagogics incorporates all the racist notions embodied in the Christian National Education program (CNE) formulated in 1948. As a way of thinking about education, it inhibits critical scrutiny of the values inherent in the apartheid ideology as articulated in the CNE policy. Moreover its tenets permeate all aspects of teacher training, including disciplines such as the psychology of education, the sociology of education, and so on. According to Penny Enslin, Fundamental Pedagogics promotes the CNE ideology through practices like the following:

- "Students of education are provided, by means of the syllabuses, prescribed readings and examinations in Fundamental Pedagogics, with the ideology which suits the roles which they will have to fulfill as teachers, bureaucrats and professional ideologists.
- "The nature of research conducted in the institutions in question is determined by the ideology of CNE and

by the role of Fundamental Pedagogics in the reproduction of this ideology. Such research, which excludes issues and analyses which might threaten the official ideology, can at best make only a limited contribution to issues of theoretical relevance to education.

- "The structuring and staffing of departments of education is determined by the structuring of Pedagogics into its part-disciplines, which reflect, of course, the epistemological presuppositions of Fundamental Pedagogics." ("The Role of Fundamental Pedagogics in the Formulation of Educational Policy in South Africa," in Kallaway, 1984)

Far removed from this rigid, formalistic approach to education are the currents of liberal and radical thought that characterize the debates, discussions, and policies of most of the education faculties in the English-medium historically white universities. These latter attitudes also extend to increasing numbers of the younger personnel (particularly Blacks) in the historically black faculties of education. The outlook and orientation of these teacher trainers were reflected in the paper topics at the 1991 Kenton Education Conference, which included the following:

- Equity and Equality in Education: Research and Policy
- The Challenge to Teacher Education in the New South Africa
- Policy Options for a Future Post-Secondary Education System
- Shifting the Paradigm: An Exploration of the Culture of Learning of Education Students at the University of Durban-Westville

10.7.2 Administration

The leadership role played by rectors and other members of the administrations of the colleges of education varies with the character of their university affiliations. It also depends on the policies and outlook of the government education authority under which each college falls. Where the college has an effective, charismatic leader at its head and a responsive university administration as backup, the resources of the university can greatly enhance the academic program in the college.

In DET-owned and controlled colleges, on the other hand, the scope of local initiative is limited. All curriculum determinations and policy decisions emanate from Pretoria, personnel do not share in academic decision-making, and the syllabuses and final examinations are identical throughout the DET subsystem. Local community organizations, teachers, and student organizations are not

represented on college councils, and the colleges are not organically related to local communities. The general picture is one of authoritarian governance and of insulation from the world beyond government-controlled black education.

10.7.3 Faculty attitudes

Whatever their formal qualifications and experience, lecturers who are pedestrian in their teaching are obviously out of place in colleges of education, where stimulating and challenging approaches are particularly necessary. But DET-controlled colleges do not foster and retain people likely to stimulate teacher-trainees through a lively curiosity, an exploratory mode of teaching, and a concern for educational reform in a changing South Africa. Sixty percent of the white lecturers are women, and many of them are spouses of government officials or bureaucrats who live in nearby communities. These lecturers tend to congregate in staff offices or the staff lounge when they are not lecturing. They are often condescending about their students, making comments like "It is so hard for them to learn," or "They try so hard." One rarely observes students interacting with lecturers except in the formal class setting.

Exceptions to this generalization certainly do exist. A striking example is reflected in the paper presented by Alan and Viv Kenyon at the 1991 Kenton Conference which is quoted in Section 9.7.1 above. In general, however, staff members encountered by the TESA team in the DET colleges did not show any signs post-apartheid values or of the personal and professional attributes necessary for effective teacher training.

Another cause for concern is the apparent dilemma of black lecturers in at least some of the DET colleges under white leadership. In the course of a visit to one such college, two TESA team members were invited to meet personnel in the staff room during a coffee break. An inquiry from the visitors about the absence of black colleagues led to a hasty search, and two of them were finally brought in to be introduced. These black lecturers left as soon as they could do so without being impolite; they were clearly not used to a comfortable collegial relationship in the staff room. One can imagine how much academic and professional potential might be uncovered if such black lecturers had the benefit of a stimulating and supportive institutional ethos.

The personnel situation in other colleges under the race-based education authorities (beyond DET's ambit) is more varied. State-controlled teacher education institutions within these structures obviously do not have policies favoring Africanization or democratization, but some personnel within certain of the colleges support such an orientation. Such people include coloured and Indian lecturers and leaders in colleges designed to serve their respective groups, as well as many of the lecturers in the

English-medium white colleges. In this last subgroup, institutional leaders have been active in pressing state authorities to admit black students to their campuses with some signs of success.

10.8 ADVANTAGES OF UNIVERSITY AFFILIATION

As mentioned above, all the white colleges of education are academically affiliated with universities. This arrangement allows the universities to participate in the colleges' curriculum construction, examinations, personnel selection, and governance. Such an affiliation exists for only two institutions other than the white group, namely the de facto black colleges related to the University of the Witwatersrand. A nonracial admissions policy was made a condition of this affiliation.

Colleges of education that are affiliated with universities are likely to have philosophical approaches consistent with those of their institutional partners. While all teacher training institutions must observe the pattern of subjects required by the national criteria, the universities differ among themselves in their approach to education. Educational studies in the Afrikaans and black universities have been carried out within a framework consistent with policies of separate development. (However that perspective has been challenged in recent years in the latter group of institutions.) English-medium universities, on the other hand, reflect more liberal and radical perspectives; they do not hesitate to confront the current politically related controversies in education.

Emerging in Zimbabwe and elsewhere in Africa, university affiliation offers considerable potential for institutional development when the relevant university faculty of education is sufficiently nonauthoritarian to stimulate initiative on the part of college personnel. Not only does such a relationship foster the professional development of many college lecturers, but it is also a factor in attracting enterprising personnel to the colleges. At the Giyani College of Education in Gazankulu, for example, affiliation with a university with a proven track record enabled the college to recruit an unusually high-calibre staff. Working in conjunction with the university, this staff has moved ahead rapidly to develop a new curriculum and to draft suitable examinations. Contrast this experience with that of other institutions. For a majority of the colleges of education, it is the DET that determines the curriculum and sets the uniform final examinations.

10.9 RECOMMENDATIONS

10.9.1 Institutional development

Consultations should be undertaken to reconceptualize the role and orientation of the colleges of education, targeting such matters as the following:

1. Student-centered curriculum development
2. Integration of theory and practice within a democratic perspective
3. Articulation between the various colleges and with the universities
4. Services to local primary and secondary schools and their teachers

10.9.2 Training of science and math teachers

Black students will not have access to professional fields of study until the teaching of science and mathematics at the school level is greatly improved. Few Blacks take math and science courses in school, and of those who do, only 7 percent pass the mathematics matric examination. Upgrading the training and qualifications received by African teacher-trainees is one strategy for improving the teaching of science and math.

10.9.3 Staff development

Inservice training is urgently needed for college of education staff. Exchanges with appropriate institutions in other countries would enrich the process. Resources are also needed for the production of new teaching material. Finally, increased links between colleges and educationally progressive university faculties of education would stimulate institutional development and help college personnel to improve curricula, teaching strategies, and assessment.

10.9.4 Basic and applied research

Applied research projects should grow out of curriculum development workshops. Many questions will arise that can only be answered through action research in the classroom. Teachers must learn that curriculum and instruction plans cannot be handed down from an authority or be developed by a few experts. Applied research may also lead to the development of adult and community education programs.

10.9.5 Community service programs

Discussion could begin by involving community leaders and interested parents in dialogues about the kind of schools the community wants for its children. This discussion could then branch out to include services that other members of the community need and that the college can provide. Out of these dialogues will grow long-term initiatives to address adult education and community needs.

10.9.6 Inservice programs

Colleges of Education for all racial groups do not have a tradition of formal inservice programs for primary or secondary schools or other community outreach activities. Teachers in community schools have generally looked to the universities for upgrading courses to meet their needs. The only formal contact that college of education lecturers normally have with school staffs is in the supervision of teaching practice.

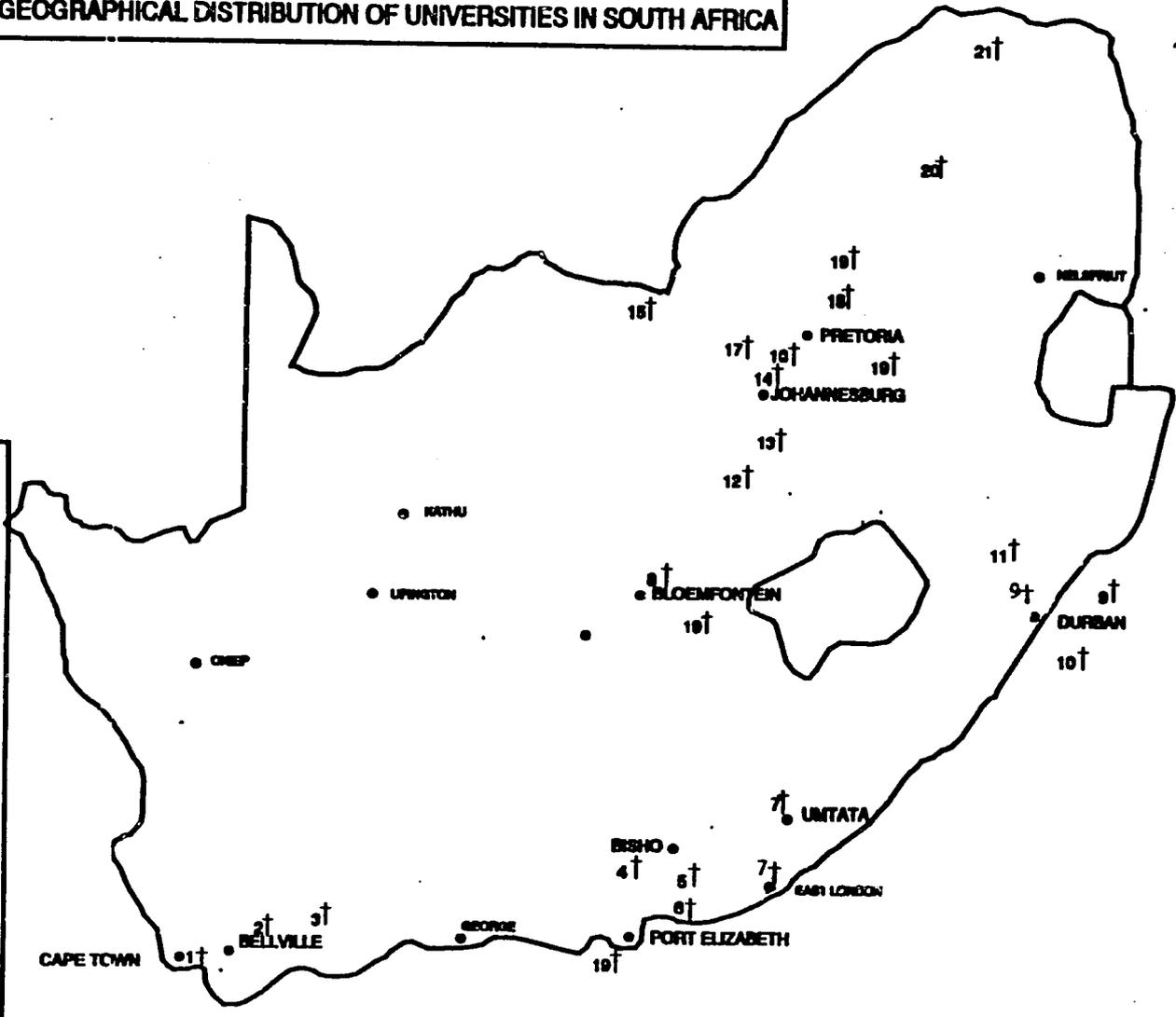
Breaking with this tradition, the Soweto College of Education recently employed a language consultant provided by the United States Information Service. The consultant worked initially with the college lecturers who taught language skills. Later a group of local primary teachers were invited to the college to meet with the consultant and lecturers to discuss problems they were having in teaching language skills. Strategies were suggested and some ideas tested. Then the lecturers and the consultant visited the teachers in their schools and observed them. All teachers and lecturers ultimately met with the consultant at the college to discuss results and subsequent action. More programs of this kind are sorely needed for the new South Africa.

APPENDICES

Figure A.1

GEOGRAPHICAL DISTRIBUTION OF UNIVERSITIES IN SOUTH AFRICA

- † UNIVERSITIES
- 1 CAPE TOWN
 - 2 WESTERN CAPE
 - 3 STELLENBOSCH
 - 4 FORT HARE
 - 5 RHODES
 - 6 PRt ELIZABETH
 - 7 TRANSKEI
 - 8 ORANGE FREE STATE
 - 9 NATAL
 - 10 DURBAN
 - WESTVILLE
 - 11 ZULULAND
 - 12 POTCHEFSTRM
 - 13 BAND AFRIK
 - 14 WITWATERSR
 - 15 BOPHUTASW.
 - 16 UNISA
 - 17 PRETORIA
 - 18 MEDUNSA
 - 19 VISTA
 - 20 NORTH
 - 21 VENDA



GEOGRAPHICAL DISTRIBUTION OF TECHNIKONS IN SOUTH AFRICA

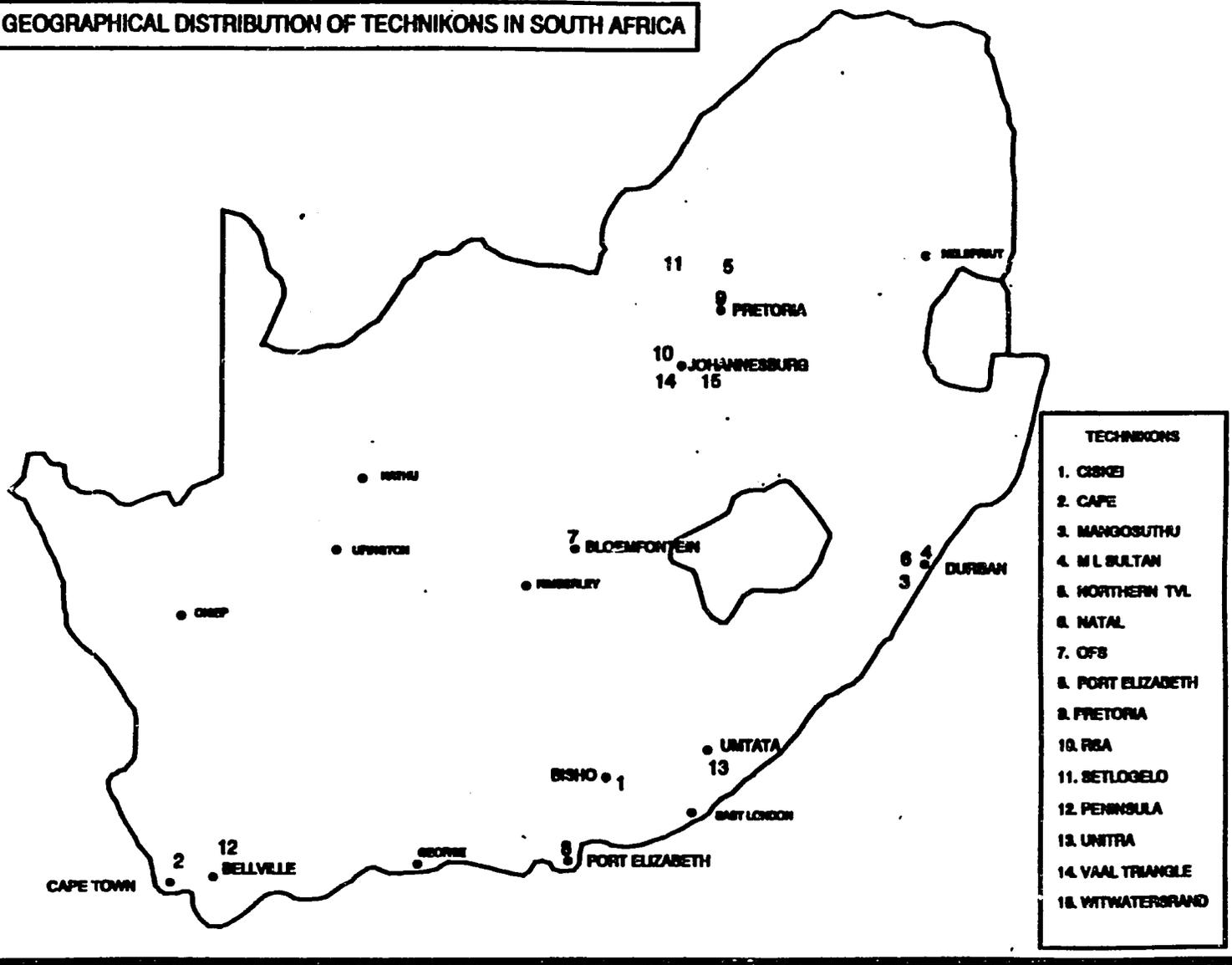


Figure A.2

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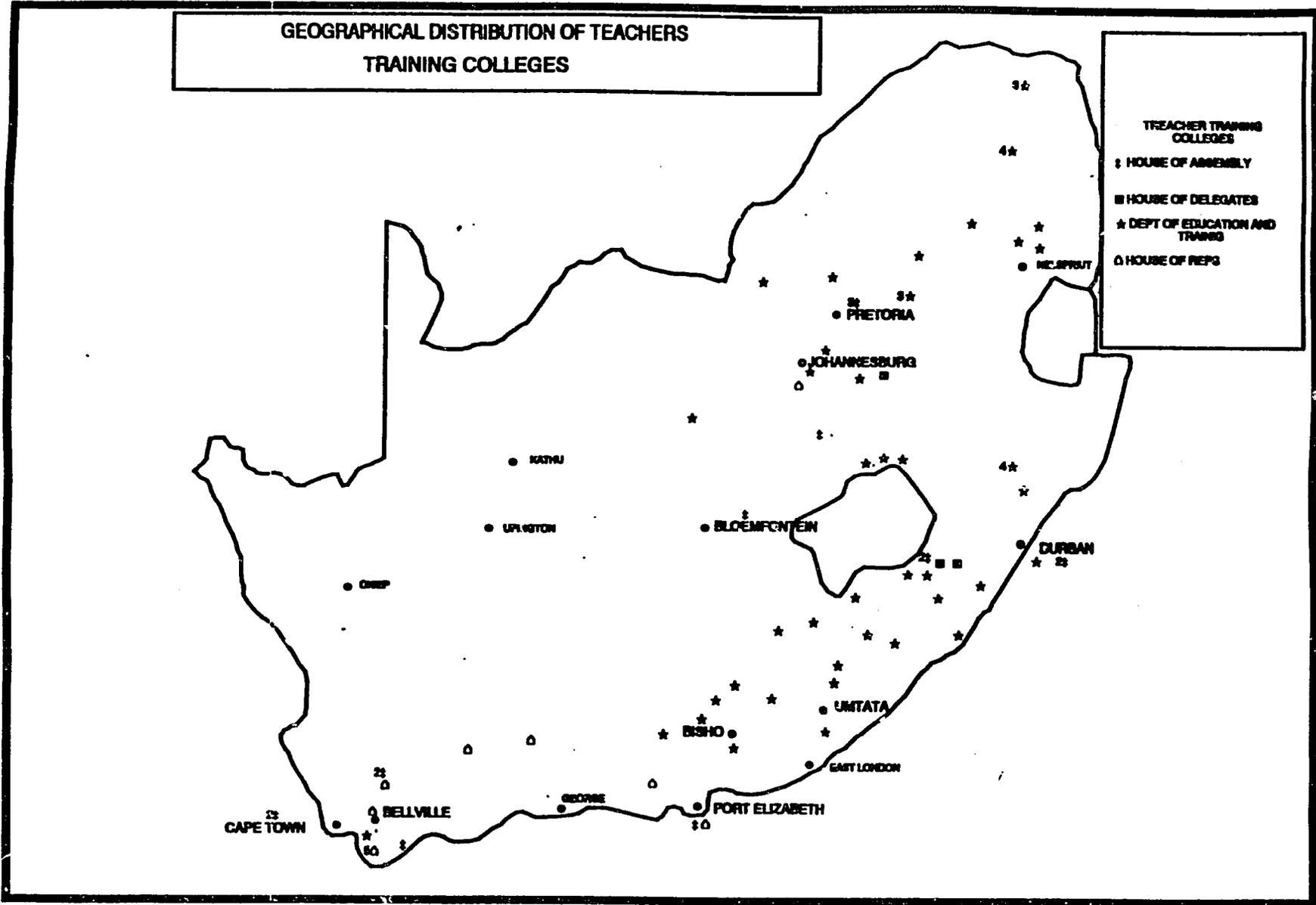


Figure A.3

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GEOGRAPHICAL DISTRIBUTION OF TECHNICAL COLLEGES IN SOUTH AFRICA

- ▲ HOUSE OF ASSEMBLY (WHITE)
- HOUSE OF DELEGATES (INDIAN)
- HOUSE OF REPRESENTATIVES (COLOURED)
- ✳ DEPT EDUC AND TRAIN (AFRICAN)
- HOMELANDS AND SELF GOV STATES

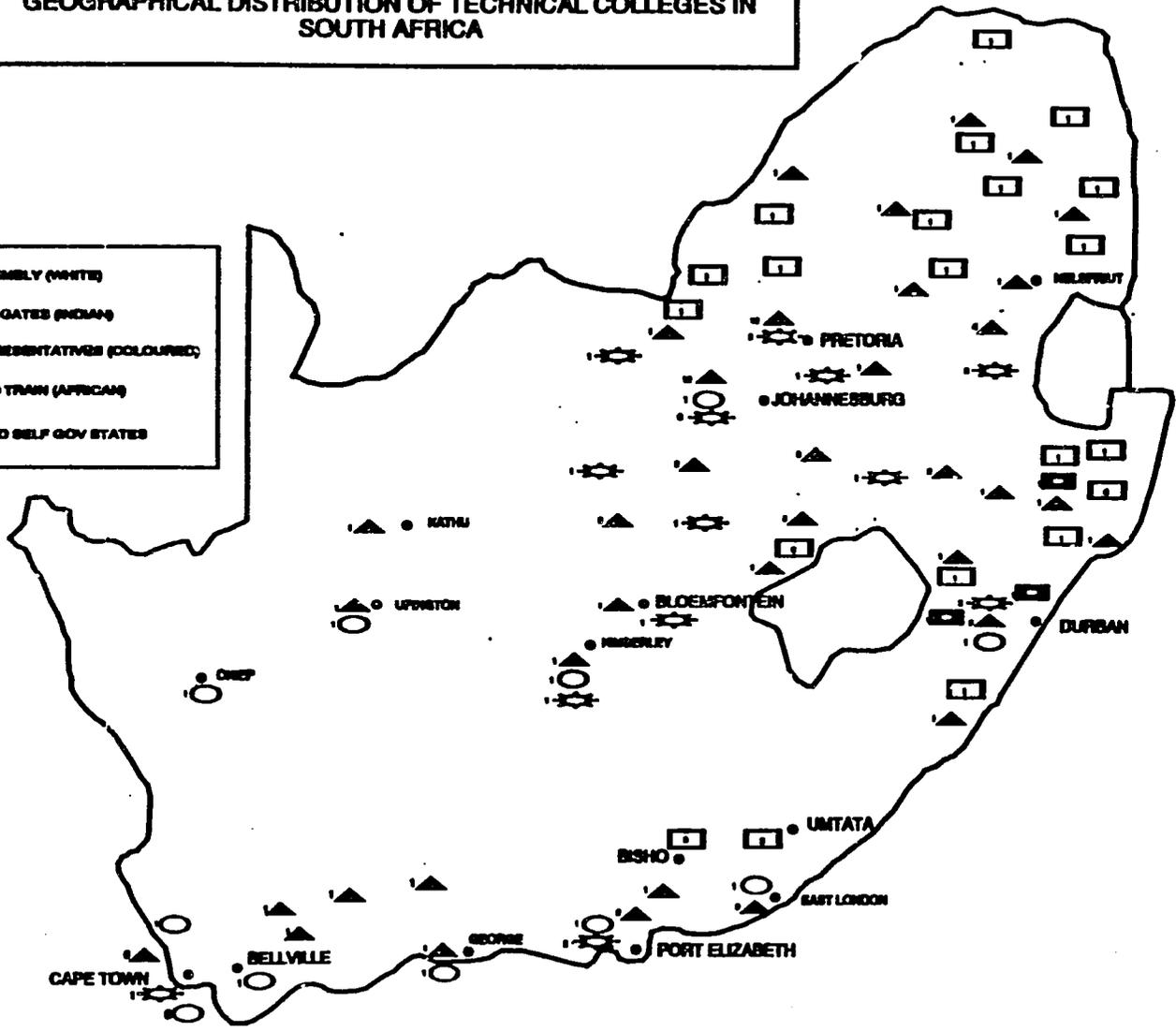


Figure A.4

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**GEOGRAPHICAL DISTRIBUTION OF TECHNICAL COLLEGES,
TEACHERS TRAINING COLLEGES, TECHNIKONS AND
UNIVERSITIES IN SOUTH AFRICA.**

- ▲ HOUSE OF ASSEMBLY (WHITE)
- HOUSE OF DELEGATES (BLACK)
- HOUSE OF REPRESENTATIVES (COLOURED)
- ⚡ DEPT. OF EDUCATION AND TRAINING
- HOMELANDS AND SELF GOV STATES

- TEACHER TRAINING COLLEGES**
- ⚡ HOUSE OF ASSEMBLY
 - HOUSE OF DELEGATES
 - ★ DEPT. OF EDUCATION AND TRAINING
 - HOUSE OF REPS

- ↑ UNIVERSITIES
- 1 CAPE TOWN
 - 2 WESTERN CAPE
 - 3 STELLENBOSCH
 - 4 FORT HARE
 - 5 RHODES
 - 6 PRIT ELIZABETH
 - 7 TRANSKEI
 - 8 ORANGE FREE STATE
 - 9 NATAL
 - 10 DURBAN
 - WESTVILLE
 - 11 ZULULAND
 - 12 POTCHEFSTRM
 - 13 RAND AFRIK
 - 14 WITWATERSR
 - 15 BOPHUTASW.
 - 16 UNISA
 - 17 PRETORIA
 - 18 MEDUNSA
 - 19 VISTA
 - 20 NORTH
 - 21 VENDA

- TECHNIKONS**
1. GISKE
 2. CAPE
 3. MANGOSUTHU
 4. M. L. SULTAN
 5. NORTHERN TVL
 6. NATAL
 7. OFS
 8. PORT ELIZABETH
 9. PRETORIA
 10. RSA
 11. SETLOGELO
 12. PENINSULA
 13. UNITRA
 14. VAAL TRIANGLE
 15. WITWATERSRAND

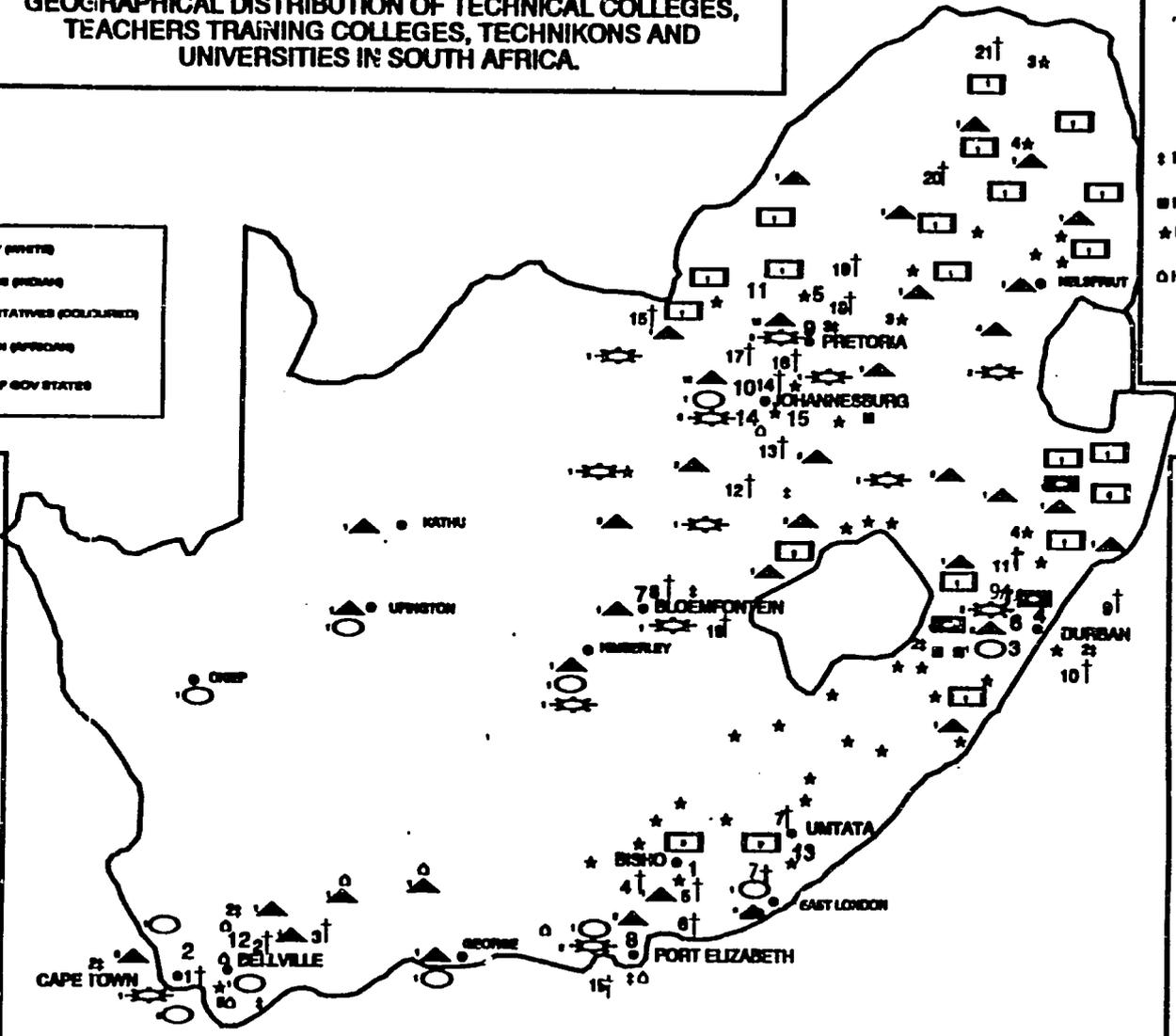


Figure A.5

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APPENDIX B

HISTORY OF TERTIARY EDUCATION IN SOUTH AFRICA

B.1 TEACHER EDUCATION

Teacher education has historically been segregated. Following 1948, the new government proceeded to nationalize control of teacher training colleges for Blacks in accordance with the Bantu Education Act of 1953.

B.2 TECHNICAL EDUCATION

Like the other subsectors, technical and vocational education developed primarily along racially segregated lines. Historically, technical colleges catered almost exclusively to Whites. It was only in 1924 and 1929 that classes were run for coloured and Indian students in Cape Town and Durban respectively by the local technical colleges that served the white community.

In 1948, trade institutions were established for Africans in the homelands. According to Monica Bot (1988, p.4), the first African apprentices were indentured in 1980. Some of the technical colleges for Whites were upgraded to Colleges for Advanced Technical Education (CATE's) under Act 40 of 1967. This act granted these CATE's more responsibility and managerial autonomy. M.L. Sultan Technical College for Indians and Peninsula Technical College for Coloureds became CATE's in 1968 and 1972 respectively. These institutions did not enjoy the same level of autonomy as that afforded the so-called Act 40 CATE's.

With time, these CATE's became increasingly autonomous, yet they still could not admit students of other races without ministerial permission. These institutions continued to press for improved status until the government finally announced that they would be developed as tertiary institutions parallel to universities. In 1979 the CATE's were renamed technikons and their pretertiary courses were transferred to technical colleges.

In 1983, technikons were allowed to admit students of other races subject to a quota. This was a complicated attempt to give them a degree of freedom and yet ensure that the majority of the students (90%) belonged to the racial group for which the institution was established. The government insisted that the applications from people of color for admission to white technical colleges would be approved only in exceptional cases.

Although most technical colleges never challenged this governmental position, a few technikons did resist or choose to ignore the state-imposed quota. Between 1983 and 1989, restrictive admissions policies at technikons were eroded to the extent that all technikons are now free to make their own decisions about admission. Technical colleges were granted the same authority in March 1991.

B.3 UNIVERSITIES

The university subsector was developed in an era when it seemed inconceivable to white South Africans that any people other than themselves could undertake the tasks of government. As a minister of education put it in 1946, "We have institutions for a European population of two million, but those institutions have to train persons to serve a population of ten million" (van der Merwe and Welsh, 135). The system's development has been heavily influenced by political and ideological requirements; those relating to social and economic needs have played a secondary role.

B.3.1 Establishment and development of the white universities

Most white universities were formed as tertiary institutions in the reconstruction period after the Anglo-Boer War. Their purpose was as much philosophical as practical. In the words of a Rhodes Trustee in 1904, their purpose was "to extend and strengthen the Imperial Idea in South Africa." Until 1916, eight university colleges were administered by the University of the Cape of Good Hope, founded in 1873 as an examining body modeled on the University of London. The 1916 University Act of South Africa incorporated into a new federal institution, UNISA, the University of Good Hope, and all the colleges, including Rhodes in Grahamstown, Greys in Bloemfontein, Natal, and the Transvaal University College of Pretoria. Two other former constituents of the Good Hope University, Victoria College and South African College, became the Universities of Stellenbosch and Cape Town respectively. Potchefstroom was brought under the UNISA umbrella in 1921. UNISA established an "external studies" correspondence department in 1945. Distance education became the main function of UNISA from 1951, when all its former colleges had received full university status. Two newer institutions, the bilingual University of Port Elizabeth and Rand Afrikaans University, were formed in 1964 and 1966 to provide Afrikaans education in cities politically and economically dominated by English speakers.

These federal arrangements supplied a facade of uniformity which obscured significant cultural differences separating these institutions. Potchefstroom and Stellenbosch were founded with the specific purpose of training people for the Dutch Reformed priesthood. In the case of Stellenbosch, its transition from high

school to Victoria College in the 1880's was accompanied by a switch in the medium of instruction from High Dutch to English, though its students, staff, and council remained mainly Afrikaner. Under the University of Good Hope, Stellenbosch received less funding than the colleges attended by English speakers, despite better pass records. Threatened by the proposed merger of Victoria with South African College (later UCT), Afrikaner farmers and financiers raised a subscription fund which provided the financial basis for its autonomy as an Afrikaans-medium university in 1916.

Meanwhile the universities of Pretoria and the Orange Free State evolved in the north as English language institutions established under the British colonial policy of anglicization of the conquered Boer republics. As Grey University College, the University of Free Orange State (UOFS) became bilingual in 1938 after holding out against vigorous pressure from students and Afrikaner nationalist political organizations. Grey attained full autonomy as the Afrikaans University of Orange Free State in 1950. Pretoria University originated in the Transvaal University College (TUC) founded in Johannesburg in 1903. The TUC arts and sciences faculties were transferred from Johannesburg to Pretoria in 1907 at the insistence of the ex-guerilla general, J.C. Smuts, then prime minister of the Transvaal, despite objections from the English-speaking TUC council. The TUC rump became the School of Mines, later the University of the Witwatersrand. In Pretoria, the TUC became a battleground between pro-imperialist and republican factions. The latter emerged triumphant by 1932, when under a nationalist Rector, A.E. du Toit, its senate decided that "the university be instituted primarily to meet the needs of the Afrikaans speaking sector of the community."

By this time, Afrikaner nationalism had developed a full-fledged sense of ethnic identity derived partly from assiduously cultivated historical mythology and partly from European right-wing romanticism. In the 1930's and 1940's, Afrikaner nationalist intellectuals developed the notion of a "volkuniversiteit," in which the university should express the world view of the "volk" and its "ethnological necessities." Under this concept, the primary task of the university was to "manifest the spirit and character and nature of the Afrikaner people" (Degenaar in van der Merwe and Welsh, p.155). It was accepted that such a project might well infringe on the traditional ideal of the university as an autonomous community. Afrikaner university rectors believed that their goals should be more robust: loyalty to the state, education for citizenship, and service to the community. They recognized their role as constituents of a larger organism, a national community, defined by language, culture, and race. One implication of this role was a rigid policy of racial exclusion.

The English-medium universities, Cape Town, Witwatersrand, Natal (Durban and Pietermaritzburg), and Rhodes (Grahamstown) were constituted and shaped in the image of British universities,

recruiting their staff and deriving intellectual inspiration from them, and competing with each other to send students to Oxford and Cambridge after the completion of their local degrees. Though guided by a more liberal vision of the university's intellectual purpose, the English institutions echoed the social predispositions of the communities that nurtured them. Wits and Cape Town did not have any formal provision for racial discrimination, but only a tiny number of black students were reluctantly admitted into these institutions before World War II. The war made it impossible for Blacks to attend foreign universities, and, encouraged by a reformist government, Wits and UCT began to enroll modest numbers of black students, never allowing them, though, to exceed five percent of the undergraduate population. Most of these students were either Indian or coloured. From 1935, Natal allowed black students into segregated classes held over weekends and established, in 1951, a separate medical school for "all suitably qualified non Whites." Rhodes registered its first African undergraduate only in 1973. At all these institutions, black students were excluded from social facilities used by Whites, and, if accommodated at all, were housed in segregated residences. Certain departments at Wits and UCT refused black students altogether.

B.3.2 Fort Hare

Fort Hare, founded in 1916, was the main African university. From its inception as the South African Native College, it was multiracial, though its policy was that non-Africans should not number more than 15 percent of enrollment. It was established at a time when the government was increasingly alarmed by what it perceived to be the political threat of "ethiopianism." In particular, officials blamed "American negro colleges" for promoting irredentist philosophies among the black South Africans they trained. With the help of grants from the Carnegie Corporation and the Rockefeller Foundation, Fort Hare was established to supply a less subversive source of instruction. The institution was strongly influenced by the British missionary societies, which had developed most of the African school facilities in the Eastern Cape including the Lovedale mission, Fort Hare's parent institution. Separate hostels were built by the Anglicans, Presbyterians, and Methodists, who were also conspicuous among the faculty. Fort Hare's missionary ethos contributed to a heavily paternalistic regime, one which often evoked fierce protests from students, especially in the 1940's. Whatever its shortcomings, though, it did offer to black South Africans what was unavailable elsewhere, a comprehensive program of university education in an environment where racial distinctions were relatively unimportant. Moreover, Africans who attended Fort Hare did so with an increasing consciousness of being a leadership class in the making. Fort Hare played a vital role in producing black South Africa's first intelligentsia and most of its major political

leaders, including Oliver Tambo, Nelson Mandela, Robert Sobukwe, Mangosuthu Buthelezi, and Professor Z.K. Matthews.

B.3.3 Bantu Education

In 1948 there were four English-medium universities, four Afrikaans-medium universities, Fort Hare, and the University of South Africa, which, at that stage, provided examinations for external students and acted as the parent institution for university colleges, that is, those which had not yet attained degree-granting status. There were very few Blacks in the English universities and none in the Afrikaans universities.

The period since the Nationalist Government came to power in 1948 has been characterized by reinforcement of segregation, by an uneven allocation of resources among the racial groups, and by increasing state oppression. The national goals for higher education, from 1948 through the early 1980's, were dominated, like almost everything else in South Africa, by the overriding policy of apartheid.

The primary higher education goal during this period was to educate the white population at the highest possible levels in order to produce a skilled workforce and informed citizenry. During the 1950's, 1960's, and 1970's, the economy of the country continued to grow at a respectable level and continued to be dominated by mining and farming. The manufacturing sector, while growing, had not yet gained ascendancy and thus had little voice in political affairs. In the 1950's and 1960's, the ruling Nationalist Party concluded that business demand for skilled manpower could be met by white workers, whether native born or immigrants. South Africa, they felt, did not need Blacks in highly skilled, technological roles. Thus, most jobs in business and government were reserved for Whites. The other side of this policy was to systematically disenfranchise Africans, deprive them of a proper education, and relocate them for much of this period to areas "outside" South Africa.

In accordance with the educational facet of its apartheid policy, the government placed severe restrictions on the entrance of black students into the mainstream universities, turned Fort Hare into a state institution for the Xhosa ethnic group, and established two rural university institutions for other African ethnic groups as well as an urban university college each for Indians and coloureds. Those Blacks attending white universities had to obtain individual permits from the relevant racial ministry of education.

The cornerstone of the government's education policy was the Bantu Education Act of 1953, which placed black schools under racially separate national ministries and imposed an authoritarian pattern of control and a curricular orientation consistent with apartheid. This act transferred control of the schools for Africans from

provincial councils to the Department of Native (Bantu) Affairs. This was done in order to counter the liberal influences of the missionary schools and to better control the education of the African population.

The basic philosophy of the Bantu Education Act was that Africans should not be educated above their expected station in life. Reflecting an Afrikaaner Christian Nationalist bias, the act accomplished the following:

1. Deemphasized the training of Africans in academic subjects
2. Emphasized education in the mother tongue initially and then in Afrikaans
3. Deemphasized the teaching of science and mathematics
4. Withdrew government support from "liberal" church schools that did not adhere to the party line

In short, Bantu Education was an education for laborers, not for the highly skilled, well-trained workers that would be needed in a modern technological society.

Next the government sought to extend the concept of Bantu Education that had been applied at the primary and secondary education sectors to the tertiary sector, and to establish state control over the universities. This was done through a second major piece of legislation, the Extension of University Education Act (1959). This law reflected policy that insisted upon "the necessity of maintaining ethnic ties in university institutions [T]he future leader . . . must remain in close touch with the habits, ways of life, and views of his population group" (Oosthuizen, 1981, p.13).

The Extension of University Education Act forbade the historically white (English- and Afrikaans-medium) universities from admitting nonwhite students except by permission of the Minister of Education. Nor could they recruit black faculty. The penalty for the student who so enrolled was a fine of 100 Pounds or six months in prison (a criminal offence). This law exempted the University of South Africa and the Medical School of Natal.

It should be noted that even before this law was passed, there had been few African students at South African universities. For example, in 1957, the Universities of Natal, Cape Town, and Wits enrolled only 1,225 non-Whites out of a total of 25,000, or 4.9 percent. The Afrikaans universities enrolled virtually no African students.

Consistent with the National Party's plan to separate the races, a network of universities for Africans, Indians, and coloureds was

established around the country to cater to the various nonwhite "nationalities." These universities operated under strict government control. For the most part, universities for Africans were set up in rural areas, even though a majority of the African population lived in urban areas by this time. Universities for coloureds and Indians were established in urban areas since, ostensibly, neither group had a "homeland" to which to return.

The "Bantu" universities had two broad purposes. First they were intended to deflect African intellectuals away from the stormy course of African nationalism in the cities and encourage them to direct their aspirations toward the Bantustans or homelands. Second, they were intended to train civil servants for the embryonic homeland administrations.

Accordingly new institutions were established for black South Africans under the aegis of UNISA as the examining body: the University of the North for Sotho-Tsonga and Venda speakers, Western Cape for Coloureds, and the University College, Durban (later University of Durban-Westville) for Indians. Fort Hare became the third "Bantu" university designated for Xhosa speakers. Blacks retained the option of registering for correspondence courses at UNISA which became the main provider of Black tertiary instruction.

In the case of Fort Hare, a series of measures were taken to serve the purposes of Bantu education: senior staff were dismissed, African faculty were prohibited from political activity, and all staff were placed under the employing authority of the Department of Education (DET). This remained the case until 1969, when all ethnic colleges became autonomous universities. Until 1969, all research projects required approval from DET. At Fort Hare, a new rector was appointed and given extensive powers. Between 1960 and 1968, the incumbent was J.J. Ross, a former professor of law at the University of the Free State and a keen contributor to the Journal of Racial Affairs, the periodical published by the Apartheid think tank, SABRA. His successor was J.M. de Wet, a Potchefstroom statistician. During Ross's rectorate, the proportion of black faculty fell from 35 to 19 percent and a new corps of Afrikaans lecturers was recruited to replace them. The enduring success of this effort can be witnessed by reviewing the 1990 Fort Hare catalogue (thirty years after the "takeover"). In that year:

1. The Chancellor was an Afrikaner.
2. Deans of four of the seven schools, including the largest, were Afrikaners.
3. The majority of the university council of 14 was Afrikaner.
4. Of the 247 faculty members employed, 34 percent had been trained at Afrikaans universities.

5. The University Senate was dominated by Afrikaners.

In the 1960's, the curriculum at Fort Hare was brought into conformity with a pedagogic fundamentalist Christian bias, deemphasizing math and science, and emphasizing rote memory and recall instruction as opposed to debate and criticism. The standards were set in the UNISA syllabuses, which, at that time, were heavily positivist in the Afrikaner tradition and reflected government policies in a range of fields. For political science students, for example, native administration became a compulsory subject, which, according to Balintulo (Rex, 1981, p.150), was interpreted as "the white man's mission of spreading Western civilization and the necessity of discriminatory laws."

The changes at Fort Hare reflected the spirit that informed the construction of the other four ethnic universities. Paradoxically, despite the imperatives of stimulating ethnic identity that formed the main rationale for establishing these institutions, the government refused to allow Blacks to control them. In each case, the Minister of Education appointed entirely white councils. Blacks were represented only on advisory councils. Whites were placed in charge of most, if not all, departments and, during the 1960's, sharp differentials existed in the pay, conditions of service, and benefits awarded to white and black academic staff (Nkondo, 1976, 20-33).

For these reasons and others, by the 1970's, the ethnic universities were failures in terms of their declared objectives. Far from breeding quiescence, they became incubators of political insurgency. Springing from the campuses of Fort Hare and Turfloop, the Black Consciousness Movement was to inspire a generation of revolt in the 1970's. Nor did the universities fulfill their role of training Bantustan bureaucrats. In fact, most graduates became teachers, and a 1969 survey revealed that only a third of Fort Hare students intended to work in the Ciskei or the Transkei.

In 1971-1972, student unrest at the University of the North heralded a two-decade-long process in which rebellion from below helped to push through reforms. In response to the findings of the Wright Committee, advisory councils were abolished, and Blacks were admitted to the councils of these universities though they remained a minority within them. In the 1970's, university administrations adopted the rhetoric of Africanization. The University of the Western Cape was exceptional in the degree to which its leadership began to challenge official precepts of ethnic education. An enlightened coloured rector, Richard van der Ross, was appointed there in 1974. Elsewhere in the black universities, substantial changes in curricula, governance, and staffing had to wait until the 1980's. Meanwhile, despite an angry chorus of criticism from the English-medium universities, in 1976 and 1981 the government created two more segregated universities: the Medical University of

South Africa, Medunsa, situated in Pretoria; and the multicampus VISTA university established primarily to train African teachers.

B.3.4 White universities in the 1980's

By the time VISTA was established, skilled manpower was in short supply, and the permanent presence of substantial numbers of black South Africans in the major cities was being recognized. Thus it became increasingly easy for English-medium universities to obtain ministerial permission to enroll black South Africans, and local authorities turned a blind eye when these institutions began desegregating their residences. Through the 1980's, black enrollment at white universities expanded significantly. Black students became politically conspicuous on white campuses, and, with the burgeoning of organized popular politics, a nonracial student movement began to displace the moral hegemony previously enjoyed by the Black Consciousness Movement. Joint protests by students, staff, and administration prevented the administration of the 1983 "Quota Act." This legislation sought to institutionalize and regulate the increasing flow of black admissions into white universities by abolishing the requirement of ministerial permission and, instead, allowing universities to register Blacks within the limits of a prescribed proportion of the student population. The law was shelved in 1984, and later repealed. From 1984, Afrikaans-medium universities began hesitantly to register token numbers of black students. UWC and UDW, by now firmly committed to a nonracial ethos, started encouraging substantial African admissions.

In 1985, the government relaxed its ban on students of other races attending the universities not designed for them by allowing the universities to use their own discretion in making such decisions. But a quota system remained in effect, at least by law.

B.3.5 Black universities, 1976-1990

The third generation of black institutions were the creations of newly independent homeland governments anxious to demonstrate their legitimacy and the rewards of political autonomy. The University of the Transkei (Unitra) was the first of these, set up in February 1976 as a branch of the University of Fort Hare, but achieving full status the following year. Serving from 1976 to 1987, the first principal, Professor B. de V. van der Merwe, enjoined that the design of the curricula "should take cognizance of the cultural background of the Xhosa nation, its problems, its wishes and desires" (Ngubentombi, 1989, p.75). But the view which prevailed was that of Chief Minister (later President) Kaiser Mantanzima, who set three prerequisites for the university: "It had to be open, it had to be modern, and English had to be the medium of instruction" (1987 Annual Report).

In its efforts to meet this objective, the university did have some success in initially recruiting well-qualified faculty, and it pushed ahead in an ambitious program to become a national comprehensive university, opening faculties of engineering and medicine in 1985. The faculty of arts, from inception, was unusually vocationally oriented, offering degrees in social work, librarianship, and police science. However most Transkeian students, like their peers at Fort Hare, were to train as school teachers. Nevertheless, Transkei escaped the full brunt of Bantu Education as experienced at Fort Hare. Today its faculty is only 3.5 percent Afrikaans-university trained, and its governance structures are more representative of the community the university serves.

If Unitra was conceived rather conventionally as an institution geared "to the attainment of international standards," the establishment of the University of Bophuthatswana (Unibo) was along more adventurous lines. Philosophically, Unibo evolved from an oddly assorted planning body whose members included academic experts in constitutional law, a chairman of the Broederbond, local bureaucrats and politicians, Anglo-American executives, and a contingent of liberal educators from the University of the Witwatersrand. This body produced a "blue book," much of it written by Jacques Kriel, initially Bophuthatswana's Minister of Health and then the Unibo's first rector. Kriel was determined that the university should avoid "elitism, ivory towerism, and educational irrelevance to the process of development" (de V. Graaf, p.15). In conformity with this injunction, and unlike Unitra, Unibo did not immediately begin constructing an elaborate concrete campus. Rather than providing residency space, it insisted that students should lodge within "the community," that all students would take a compulsory course in development studies to inculcate values of "compassion and concern," and that "at least one third of the academic year be devoted to practical work related to the field in which the student [was] enrolled."

Kriel's idealistic agenda swiftly ran into problems. The government immediately detected politically objectionable content in the development studies syllabus, which was also unpopular within the university's school of management because of its supposedly "anti-capitalist bias." The students disliked development studies as well. Development studies did not relate to their career aspirations (which, unsurprisingly, tended to be elitist), and they were not taught at prestigious institutions like UCT and Wits (de V. Graaf, p.16). Despite these tensions, Unibo continued to be a center of curriculum experimentation, especially within the school of education.

In 1985, student political assertions provoked the government to shut down the university, an act which was undertaken personally by President Mangope, his cabinet, and 300 riot police. If the legality of this act was questionable, that was soon corrected. In

December, the young nation's eighth anniversary of independence was celebrated with an amendment to the Internal Security Act which gave the President the power to close down any educational institution he liked "in the interests of public safety." A few days later, ten Unibo staff were deported and 36 students were informed that the government would not allow them to register. During the same time, a similar sequence of events at the University of the Transkei provided further evidence of these institutions' vulnerability to arbitrary state interference.

Recently, though, the mercurial politics of independent homeland governments have afforded unexpected opportunities for the reassertion of academic autonomy. Coups d'etats in Transkei and Ciskei in 1988 and 1990 enabled Unitra and Fort Hare to install new leaderships. In the case of Fort Hare, the changes resulted from a rebellion by youthful members of the Democratic Staff Association, who, taking advantage of momentary sympathy from the new military rulers of Ciskei, obtained government assent to a rewritten university constitution. Five senior administrators were forced to resign, and the power of the "malign alliance of Broeders and (former president) Lennox Sebe's acolytes" (Sparks) was effectively broken. Instead, there now reigned a new council composed of ANC luminaries, Archbishop Tutu, and academic representatives of the old liberal missionary families who had helped to shape Fort Hare's early existence.

The changes at Fort Hare were especially dramatic, but during 1990 they were matched by events on other black campuses. Returning ANC exiles joined the administration of the University of Venda; a visionary principal took office at Turfloop, bringing to a close three years of student dissent and military occupation; and the struggles of the Combined Staff Association reached their triumphant conclusion at Durban-Westville with the appointment of a rector committed to democratizing the university's governance and curricula.

APPENDIX C

THE MACROECONOMIC ENVIRONMENT OF TERTIARY EDUCATION

C.1 POPULATION

The continent of Africa has a projected growth rate of 3 percent between 1990 and 1995. This is the highest regional rate in the world. The average fertility rate is 6 children per woman. At worst, the AIDS epidemic could infect 21 percent of the adult population by the year 2000. This would slow but not stop the population growth, limiting it to 1.8 percent rather than 3 percent.

South Africa is the fifth most populous country on the African continent. It had 35.3 million people in 1990 and is projected to have 65.4 million by the year 2025. The population of South Africa is increasingly African, youthful, and urbanized. Population figures by race are as follows:

1985	2010
73% African—24.5m	81% African—48.5m
15% white—4.9m	10% white—5.8m
8% coloured—3.0m	7% coloured—4.2m
3% Indian—0.9m	2% Indian—1.2m
Total—33.1m	Total—59.7m

The Urban Foundation notes that "the most important dynamic of projected demographic change [in South Africa] is Black population increase. In absolute numbers, there is an increase of black persons from 21.1 million in 1980 to 48.5 million in 2010 . . . a 130 percent increase over the 1980 black population" ("Our Crowded World," *The Star* (newspaper), November 15, 1991).

C.2 ECONOMY

The South African macroeconomic environment in the 1980's was characterized by low economic growth rates, high rates of inflation, chronic and rising levels of unemployment, declining exchange rates, and persistent government debt and budget deficits. On the other hand, the 1970's witnessed the beginning of a trend toward reduction of racial income inequality. This trend has continued during the 1980's, partly because of the elimination of statutory racial discrimination in the labor market.

One feature of the economy during the 1960's and 1970's was the relatively high growth rates achieved within the context of a rigidly racially stratified labor market. However, as Table C.1

shows, the average annual growth rate has been declining consistently since the 1960's. Between 1980 and 1985, it was just over 1 percent. During the next five years, it declined further to an average of 0.7 percent.

Table C.1.—Annualized growth rates of real GDP in South Africa, 1960-1990

Period	Growth Rate (%)
1960 - 1965	6.0
1965 - 1970	5.4
1970 - 1975	4.0
1975 - 1980	2.8
1980 - 1985	1.1
1985 - 1990	0.7

Source: South African Reserve Bank, *Quarterly Bulletin*, various issues

The combination of a declining economy and a population growth rate in excess of 2 percent per annum has meant a low growth of GNP per capita (or income per head of the population). Table C.2 shows how South Africa has fared in this respect in comparison with a range of middle income (in which group South Africa is classified), high income, and Southern African countries.

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Table C.2.—GNP per capita: selected countries

Country	GNP per capita, 1988, US \$	GNP per capita, avg. annual growth rate, 1965-1988
South Africa	2,290	0.8
Algeria	2,360	2.7
Hungary	2,460	5.1
Argentina	2,520	0.0
Yugoslavia	2,520	3.4
South Korea	3,600	6.8
Singapore	9,070	7.2
Hong Kong	9,220	6.3
U.K.	12,810	1.8
U.S.A.	19,840	1.6
Japan	21,020	4.3
Botswana	1,010	8.6
Zimbabwe	650	1.0
Lesotho	420	5.2
Zambia	290	-2.1
Mozambique	100	n.a.
Swaziland	810	2.2

Note: n.a. = not available

Source: World Bank Development Report, 1990

It is apparent from Table C.2 that in terms of growth of GNP per capita, South Africa has much in common with her southern African neighbors whose economies are also performing badly, namely, Zimbabwe, Zambia and Mozambique. (Note that "GNP per capita" while used internationally as a measure of the level of development, says little about the quality of life or income distribution within countries.)

Projections of the economic growth rate by economists at Econometrix, Standard Bank, and UWC suggest the following average growth rates for 1991-1995: -0.1% (1991), 2.3% (1992), 3.4% (1993), 3.8% (1994), and 4.0% (1995).

Coexisting with a sluggish economy has been inflation, which has been galloping at a double digit rate during the 1980's. The average annual increase in the consumer price index between 1985 and 1990 was 16.7 percent. Between 1965 and 1980, the average annual rate of inflation was around 10 percent, but between 1980 and 1990, it had increased to 15 percent.

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The economic situation has been further exacerbated by a rising level of unemployment. The most conservative estimates of unemployment by institutions such as the CSIR and the President's Council suggest that at least 30 percent of the work force is unemployed, although estimates by other researchers put the unemployment rate as high as 50 percent. An unemployment rate of 30 percent implies that between 3 and 4 million job seekers cannot find employment in the formal sector. The overwhelming majority of the unemployed are African, although there has been an increase among coloureds, Indians, and Whites in recent years as a result of the prolonged recession. The failure of the formal sector to create employment, especially manufacturing and services, has resulted in the burgeoning of informal sector activities as the unemployed seek strategies for survival.

The bleak picture of the South African economy is compounded by a declining exchange rate, a large government deficit, and substantial government debt. Between 1985 and 1990, the rand fell an average 11 percent per annum weighted against a basket of the major international currencies. Between 1985 and 1989, the government deficit averaged approximately 4 percent of GDP before borrowing and debt repayment, a full 1 percent above internationally recommended levels. Moreover government debt as a proportion of GDP averaged 33 percent between 1985 and 1990. Servicing this debt in 1990 cost 11 billion rand.

On the other hand, the South African political economy exhibited two positive features during the 1980's. One relates to the elimination of statutory racial discrimination in the labor market and the other to the pattern of racial income distribution.

Racial discrimination in the labor market has been a characteristic feature throughout this century. Beginning with the Land Acts of 1913 and 1936, a host of discriminatory laws hindered the free and full participation of Blacks in the labor market. Included among these were the Group Areas Act, Job Reservation, Wage Discrimination, and the ban on trade unions, as well as the provision of industrial training for Africans. The process of eliminating these laws began with the publication of the Wiehahn Commission report in 1980. Now, at the beginning of the 1990's, the labor market is virtually free of statutory discrimination.

In the post-World War II era up to 1970, distribution of income between Whites and Blacks was more or less in the ratio of 70:30. In other words, there was very little redistribution toward Blacks, even during the growth decade of the 1960's. Between 1970 and 1980, the ratio of income distribution changed to 60:40, and by 1987, it had changed further to 53:47. An income equalizing process that began in the 1970's is thus continuing. The most important cause has been the rise in African real wages for a number of reasons: increased wages in mining and subsequently in other sectors, the growth of an independent trade union movement,

the pressure on multinational companies in the 1970's to pay living wages, some occupational mobility by Blacks, and the growth of African bureaucracies in the self-governing and independent homelands.

However, in the virtual absence of employment creation during the 1980's, the beneficiaries of redistribution have been those in formal sector employment. Thus, income inequalities between Whites and Blacks have been reduced, but inequalities between those Blacks fortunate to find formal sector employment and those outside the formal sector either in unemployment or in the informal sector have been exacerbated.

The quantitative expansion of the education system in the 1980's, not only in terms of financial resources but also in enrollment levels, has resulted in a substantial increase in the number of matriculants emerging from the black education systems. However, because there has been little economic growth and employment creation, large numbers of matriculants have been unable to find work in the formal sector of the economy. Thus one consequence of education expansion without concomitant growth of the economy has been an increase in the level of "educated unemployment."

Future educational development will, to a large extent, depend on factors exogenous to the education system including economic factors like growth, inflation, and the exchange rate. Furthermore, it is vital that substantial employment creation and income generation occur and that racial income equalities continue to decline further. This will ensure that standards of living rise more equitably.

APPENDIX D

PROJECTIONS OF FUTURE RESOURCES FOR HIGHER EDUCATION

The following table illustrates four scenarios for the future of higher education financing in South Africa.

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Table D.1.—Alternative projection scenarios for higher education financing

	1990 Actual	1991 Pro- jected	1992 Pro- jected	1993 Pro- jected	1994 Pro- jected	1995 Pro- jected
SCENARIO I: Relatively Conservative						
Projection of real GDP: Average growth rate projected by Econometrix, Standard Bank, and Loots						
		-0.1%	2.3%	3.4%	3.8%	4.0%
Projected real GDP	262.7	262.4	268.4	277.5	288.0	299.5
Govt % of real GDP	27.3%	27.3%	27.3%	27.3%	27.3%	27.3%
Government budget	71.6	71.6	73.3	75.8	78.6	81.8
Education budget:						
% of govt. budget	20.3%	20.3%	20.3%	20.3%	20.3%	20.3%
% of real GDP	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Education budget	14.5	14.4	14.7	15.3	15.8	16.5
% change in educ. budget		-0.1	2.5	3.4	3.8	4.0
Projected % increase of students*		1.7	1.7	1.7	1.7	1.7
% change in education budget per student		-1.8%	0.6%	1.7%	2.1%	2.3%
SCENARIO II: Moderate change						
Same as Scenario I except shift 2% of govt. budget to educ. starting in 1992						
Education budget:						
% of govt. budget	20.3%	20.3%	22.3%	22.3%	22.3%	22.3%
% of real GDP	5.5%	5.5%	6.1%	6.1%	6.1%	6.1%
Education budget	14.5	14.4	16.3	16.9	17.5	18.2
% change in ed. budget	-	-0.1	13.2	3.6	3.6	4.0
Projected % increase of students		1.7	1.7	1.7	1.7	1.7
% change in education budget per student		-1.8%	11.5%	1.9%	1.9%	2.3%

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	1990 Actual	1991 Pro- jected	1992 Pro- jected	1993 Pro- jected	1994 Pro- jected	1995 Pro- jected
SCENARIO III: Moderate change						
Same as Scenario I except shift 0.5% of govt. budget to educ. for every year starting in 1992						
Education budget:						
% of govt. budget	20.3%	20.3%	20.8%	21.3%	21.8%	22.3%
% of real GDP	5.5%	5.5%	5.7%	5.8%	5.9%	6.1%
Education budget	14.5	14.4	15.2	16.1	17.1	18.2
% change in educ. budget		-0.1	5.6	5.9	6.2	6.4
Projected % increase of students		1.7	1.7	1.7	1.7	1.7
% Change in education budget per student		-1.8%	3.9%	4.2%	4.5%	4.7%
SCENARIO IV: Relatively optimistic						
Same as Scenario III except increase govt. share of GDP by 0.5% per year starting in 1992						
Real GDP (same as above)	262.7	262.4	268.4	277.5	288.0	299.5
Govt. % of real GDP	27.3%	27.3%	27.8%	28.3%	28.8%	29.3%
Government budget	71.6	71.6	74.6	78.5	82.9	87.7
Education budget:						
% of govt. budget	20.3%	20.3%	20.8%	21.3%	21.8%	22.3%
% of real GDP	5.5%	5.5%	5.8%	6.0%	6.3%	6.5%
Total educ. budget	14.5	14.4	15.5	16.7	18.1	19.6
% change in educ. budget		-0.1	7.6	7.7	8.4	8.5
Projected % increase of students		1.7	1.7	1.7	1.7	1.7
% change in education budget per student		-1.8%	5.9%	6.0%	6.7%	6.6%

* Derived from forecasts of pupil numbers in Dostal, 1988

The relatively conservative Scenario I and relatively optimistic Scenario IV can be used to illustrate some financial implications for higher education. But it should be emphasized that rather high

economic growth rates are used in these projections. Therefore the analysis below should be regarded as extremely optimistic. If average growth rates of the 1980's are used, the picture would change dramatically to an extremely gloomy one.

In Scenario I, government and education expenditure are kept at a constant proportion of GDP, as is the education budget as a proportion of total government expenditure. In Scenario IV, the percentage of the government budget allocated to education increases by 0.5 percent each year from 1992, as does the government's share of GDP. The resources available for tertiary education under these two scenarios are shown in Tables D.2 and D.3.

Table D.2.—*Projected resources for tertiary education:
Scenario I*

Year	% of educ. budget allocated to tertiary educ.(1)	(2) Rm	% of educ. budget allocated to tertiary educ.(3)	(4) Rm
1990	19.5	2.83	19.3	2.80
1991	19.5	2.81	19.1	2.75
1992	19.5	2.87	18.9	2.78
1993	19.5	2.98	18.7	2.86
1994	19.5	3.08	18.5	2.92
1995	19.5	3.22	18.3	3.02

Note: Column (3) shows a 2.4 percent p.a. decline in the percentage of the educational budget allocated to tertiary education. This was the 1980-89 trend.

Headings for Columns (2) and (4) for Tables D.2 and D.3:

- (2) Tertiary education budget (Rm)
- (4) Tertiary education budget (Rm)

Table D.3.—Projected resources for tertiary education:
Scenario IV

Year	% of educ. budget allocated to tertiary educ. (1)	(2) Rm	% of educ. budget allocated to tertiary educ. (3)	(4) Rm
1990	19.5	2.83	19.3	2.80
1991	19.5	2.81	19.1	2.75
1992	19.5	3.02	18.9	2.93
1993	19.5	3.26	18.7	3.12
1994	19.5	3.53	18.5	3.35
1995	19.5	3.82	18.3	3.59

Between 1985 and 1989, the education budget for higher education declined by 2.5 percent per annum in real terms. The average annual economic growth rate between 1985 and 1990 was 0.7 percent.

In the four projections of higher education resources shown in Tables D.2 and D.3 (Columns 2 and 4), the budget available for the tertiary sector (based on assumptions made in these projections) is expected to grow in real terms. In the worst scenario (Column 4, Table D.2), the higher education budget is expected to grow at 1.5 percent per annum in real terms. Under the best scenario (Column 2, Table D.3), the resources available to the tertiary sector are expected to grow at 5 percent per annum in real terms.

It should be noted that these projections are based on an average economic growth rate of approximately 3 percent per annum for 1990-1995. Even with such relatively high economic growth, the growth rate in the higher education budget is modest. The economic implications for a growth rate of less than 1 percent for the tertiary sector in the 1990's (as it was between 1985-1990) are thus obvious. These projections serve to reinforce the point that educational development is largely dependent on exogenous economic factors.

APPENDIX E

SOME EXAMPLES OF EDUCATIONAL PLANNING IN SOUTH AFRICA

In 1978-80, Professor J.P. De Lange chaired a Commission on Education in South Africa that made some fairly strong recommendations on the tertiary sector, including the following:

- Universities should relax their rigid admissions requirements.
- Universities should offer more vocationally oriented courses.
- Transferring between institutions should be facilitated.

The government generally ignored the report.

In the past few years, the ANC, the Urban Foundation, and many other organizations have arrived at proposals that are concerned with the following:

1. The establishment of one education department for all races
2. Compulsory education at primary and secondary levels
3. The role of the state and the private sector in financing education
4. Various strategies for assisting needy students
5. The future roles of black and white universities and the rationalization of tertiary education as a whole
6. The articulation of programs to ensure student mobility within the tertiary sector
7. The granting of greater managerial and financial autonomy to local communities
8. The training of more teachers to improve the pupil-teacher ratios in all schools

The DNE's Education Renewal Strategy includes the following goals:

1. The establishment of a central department of education, together with a decentralized system and greater autonomy at lower levels
2. Assurance that race will not be used as a basis for restructuring and financing the new education system

3. An emphasis on equity in terms of educational opportunities
4. The development of a national strategy for preprimary education
5. The introduction of free and compulsory primary education
6. An emphasis on vocational and technical education at the secondary level
7. The certification of nonformal education
8. An increased use of distance education
9. The development of stricter admissions requirements for tertiary education and the rationalization of tertiary education programs
10. The establishment of "Edukons" to facilitate mobility between postsecondary institutions

In 1991, the National Education Coordinating Committee, a body which emerged during the 1980's as the National Education Crisis Committee in response to the township school boycotts, established NEPI (National Education Planning Initiative) to explore "options for a non-racial, non-discriminatory post-secondary education system." NEPI is expected to complete its work during the second half of 1992. At present, NEPI is mainly university-based and draws upon networks developed by UDUSA and SASCO, the national faculty, and student associations.

APPENDIX F

MISSIONS AND GOALS OF UNIVERSITIES

South African universities have broadly similar concepts of their overall purpose and objectives. Most institutions stress the attainment of excellence in their mission statements, and most, though not all, define such excellence as conformity with "internationally accepted standards." Universities also acknowledge their obligations to wider society and, increasingly, even with the Afrikaans-medium institutions, this is explicitly interpreted in terms of "service to the black community." Black universities and historically white English-medium universities recognize the need to make special provision for the educational needs of the disadvantaged, both on and off campus.

Meeting national requirements for skilled manpower is another recurrent theme, especially in the charters of universities that view themselves as charged with a developmental mission (Unibo and Transkei), as with those institutions that have an especially close relationship with the administrative and industrial employment sectors (Pretoria, for example). Wits, doubtless looking to a political order no longer dominated by Afrikaner nationalists, refers to its role in training at a high level "those who are going to govern in the future." The larger white universities also give prominence to research commitments, stressing their duty to "add to existing knowledge" (UCT) through the promotion of fundamental research. When interviewed, leadership at UCT referred to their research establishments as vital "national resources." Pretoria, too, with the largest research budget of all universities, perceives its research role in terms of national strategy, generating the expertise and technological progress that will enable the nation to match its competitors in international markets. It places more emphasis than Wits and Cape Town on industrially applied research. Black universities also look to expanding their research capacity, though they tend to encourage applied scholarship with a local orientation and community relevance.

Notwithstanding similarities in the overall choice of themes and language, at the level of mission statements and the rhetoric employed in graduation addresses, differences in emphasis are observable. Generally, the largely black institutions emphasize their service obligations, while the largely white universities are more preoccupied with maintaining standards and gaining international recognition. Recently, however, most institutions, at least at the level of rhetoric, demonstrate an increasing convergence in philosophy with the incorporation of populist discourse into mission statements. A breathtaking exception to this rule is Rand Afrikaans University. Here the rector believes that the University is a "Eurocentric" institution modelled on

great European universities and that there will always exist a need for such facilities in South Africa with its unusual combination of "first world" and "third environments." Whatever their private predispositions, few other principals would choose to employ such language. The thinking underlying it, however, is by no means unique to RAU. It can be observed in the aspirations of some of the black universities to reconstruct themselves in the image of Wits and UCT as well as in the rhetoric of "modernism" which accompanied the establishment of the University of the Transkei. Only Unibo and UWC make a point of emphasizing their differences in orientation from other universities: Unibo's founding principles defined its "first enemy" as elitism; Jakes Gerwel argued in his inaugural address at UWC that the university was "historically placed . . . to respond to the democratic left, to be an intellectual home for the left."

It should be obvious that these variations in thematic emphasis have significant policy implications. Of these, the most important concern the issues surrounding enrollment and expansion, the nature of teaching and research, and the definition of and the relationship with the constituencies served by the university.

With the exception of the TBVC universities, all institutions today experience considerable pressure from the state to limit their enrollments and restrain the rapid pace of growth which characterized their development in the 1980's. Responses have varied. In certain cases, current government policies dovetail with the way the institutions view themselves under the most ideal circumstances: the RAU leadership, for example, sees the university's defining character as an Afrikaans-medium institution which will continue to meet the higher education requirements of a regional population of about 850,000 Afrikaners, 20 percent of whom are coloured. From this perspective, while RAU can expect to increase its black enrollment significantly (from about 500 to 2,000), it can do this selectively, and it can continue to meet the needs of its community without much expansion. The slow shift in the demography of its student population will not, as far as its administrators are concerned, require changes in its methods of instruction or its corporate culture. RAU may not be a typical representative of Afrikaans universities in this respect, but only one, OFSU, has begun to recognize the cultural implications of expanding black enrollment. Others still prefer to understand their essential character as "Afrikaans and Christian" (Pretoria).

The English-medium HWU's are now committed to "controlled rates of growth" reflecting their conviction that "mass access is incompatible with the maintenance of high academic standards" (UCT, 1990 VC Report). However, more or less explicitly, they acknowledge their future as institutions which, at least in terms of their student enrollment, will be mainly black. Natal does this in the most clear terminology. It is willing to allocate an increasing proportion of its resources to identifying potentially

talented black students and to establishing programs to compensate for the inadequacies of the school.

With most black universities, compliance with the government's restricted growth policy has been unwilling and largely a consequence of reduced subsidies. Today, after five years of rapid expansion, the University of Western Cape recognizes merit in "a period of stabilization." Some look forward to considerable future expansion. The University of the North, for example, proposes an annual growth rate of 8 percent starting in 1992. This is anticipated to bring its student population to 18,000 by 2000.

The other aspect of admission and enrollment that distinguishes universities from each other involves attitudes concerning qualifications. Essentially three approaches exist. The first is meritocratic and refuses to acknowledge the unevenness of the secondary school sector. The second is meritocratic but argues that employing matriculation results as the only admissions criteria represents an irrational failure to tap potential. And the third approach is toward open admission for anyone with minimal qualifications. South African universities can be arranged in a spectrum across the range represented by these positions, and their locations within this spectrum closely correspond with the degree of populist emphasis reflected in their missions.

Closely tied to the admission and enrollment issue is the extent to which universities perceive the necessity of undergoing reorganization as they become increasingly socially representative. The differences come out most clearly in policies regarding academic support or development. Again there is a spectrum ranging from the virtual absence of such remedial programs, through the adoption of programs which emphasize "bringing students up to speed," to those which seek changes in the overall curriculum, both in its content to make it more sensitive to local culture and in the manner of its instruction.

All universities proclaim adherence to an ethic of community service, and even the Afrikaans-medium institutions perceive obligations as going beyond the campus to stakeholders with a direct interest in university activities (professional associations, big business, parent communities, and so on). Pretoria, for example, lists an impressive collection of outreach projects in its prospectus that include free medical and legal services in black townships, assistance in irrigation and mechanization workshops for farmers in the Lebowa homeland, and classes for black entrepreneurs to help them "adjust to the challenge of the free market." Pretoria's education faculty also supplies "educational enrichment" to the Kwandebele schooling authorities.

Such notions of service, though, are inherently from the top down. In essence they are a supplement to services provided by the state

and they take a very similar form. An alternative approach is represented by various efforts in different institutions to invite community participation in the design and determination of outreach activity. One of the most dramatic instances of this was the establishment of an Education Policy Unit at Wits in 1985, which included in its governing structure representatives from township-based political associations and members of the National Education Crisis Committees. However, even in the liberal white universities, such initiatives tend to be of an ancillary character; only exceptionally does community involvement characterize mainstream teaching and research. In this respect the programs of the more research-oriented HBU's, notably that of UWC, are distinctive in the extent to which they have been determined through a process of outside consultation with representative organizations.

It is certainly true that in the 1980's the open universities began to add a wider range of commitments to their scholarly sense of mission. The expansion of outreach programs directed at the poor and disenfranchised was one manifestation of this sort of commitment. These universities began to explore new notions of accountability: Wits, for example, funded a project to explore views of the university among three different "excluded communities." In the 1980's, Wits, Cape Town, and Natal each developed as vital centers of research in the social sciences, and the open universities accommodated and protected a powerful and creative student movement, a key ingredient in the popular opposition led by the United Democratic Front.

APPENDIX G

UNIVERSITY ADMISSION POLICIES

All South African universities (including TBVC) require enrollees to obtain a "matriculation exemption." The predominantly white universities impose additional conditions for automatic entry. These tend to vary across faculties, but they normally involve specific combinations of subjects and point scores that add up to a total well above that represented by matriculation exemption. The English-medium universities have also established selection procedures for prospective students who do not possess the required matriculation points. Since 1983, all universities theoretically have been open to applicants from all races: in practice, because of variations in admissions policies, some institutions have been more open than others. With respect to such policies, the universities fall into four categories.

First there are those institutions that claim to apply strictly meritocratic principles of selection. These universities set matriculation scores well above the legislated minimum level and refuse to deviate from them except in exceptional cases. All institutions within the Afrikaans-medium sector have held this position until recently, and it is still exemplified by RAU.

RAU requires an average pass mark of 55 percent (60 percent in engineering and science) and adheres to this rule strictly. Indeed, RAU's leadership is planning to raise entry levels slightly because the number eligible for entry cannot be accommodated. RAU does not see its future as a predominantly black institution. Its leadership defines its constituency by language and believes that under optimum conditions its student intake will be at most one-fifth coloured. Coloured schooling has relatively good resources in comparison with the African systems. RAU's administrators do not perceive any need to adjust their entrance requirements in order to facilitate coloured enrollment. The University has established a project, with the support of CALTEX, to upgrade science and math education at selected coloured high schools. Classes from these high schools attend workshops each week at the university to use laboratory facilities and develop new curriculum materials. In addition, RAU is launching a "College of Advanced Learning and Leadership" which will function as a "Model C" private school with the overall function of bringing a group of "Black students up to the same standard of education as Whites." The school will conduct its instruction in English and it will emphasize math, science and commercial subjects. As with the CALTEX classes, increased enrollment will not be its primary function. It will serve as a feeder mechanism to supply well-qualified black applicants who can be accommodated with the minimum of adjustment to the overall mission of RAU as a "Eurocentric university."

Other Afrikaans universities may have adopted slightly different policies, but they do not involve procedures to facilitate substantial increases in black enrollment. Indeed, in 1984, when the University of Potchefstroom's council ruled in favor of admitting Africans to undergraduate studies, it resolved at the same time that no active effort should be taken to recruit Blacks, that black enrollment should not be at the expense of Whites, and that Blacks should not be provided residential accommodation. When Pretoria decided to allow black students in on grounds of merit, it undertook, nevertheless, to maintain the university's traditional character as an Afrikaner institution.

In certain cases, rigid adherence to matriculation scores as the criteria for admission probably lowers the overall quality of successful applicants. African matriculation results are a poor indicator of potential performance at university, and a very small number of African matriculants obtain sufficient points to satisfy automatic entry requirements at white universities. Entry requirements for Afrikaans universities are generally lower than for their English-medium counterparts (which is one reason that they are increasingly attractive to English-speaking students). By ruling out routes to admission other than the standard matriculation scores, the Afrikaans universities have made competition for places among white students less rigorous than at Wits, UCT, and Natal. There the numbers of white admissions are falling, partly as a consequence of increased black enrollment.

Not every Afrikaans institution is as determined as RAU to maintain its historical identity. The University of the Orange Free State is in the process of redirecting itself to a constituency that its leadership acknowledges as "multi-cultural." The University has just established a bridging course at the local technical college that is intended to prepare black students for university. It has also introduced an English-medium stream that will enable African students to take at least two courses in any faculty in English rather than Afrikaans.

In the second category are those institutions that acknowledge that their students should become increasingly more representative of the population as a whole, but, at the same time, wish to maintain their traditional emphasis on meritocracy and excellence. Some recognize that matriculation examinations conducted under the auspices of the DET (i.e., those sat by African students) are "neither a reliable measure of performance nor an indicator of potential success at university." These institutions have established their own selection procedures for students who fail to match their high requirements for automatic enrollment.

These procedures function in a variety of ways. At Wits, where automatic entry for most faculties is set at 23-25 points, certain faculties use entrance tests to establish potential; others employ a biographical questionnaire to place prior academic performance in

context; still others use a combination of the two. The Wits medical faculty gives additional weight to DET scores and interviews "disadvantaged" applicants.

UCT has more uniformity. Though regulations vary across its faculties, all use lower cut-off points with DET matriculation scores. Some faculties (for example, engineering) consider school records and class position, and the Alternative Admissions Research Project runs entrance tests at national centers for black applicants. In this respect, UCT has a more obvious affirmative action commitment than Wits. While the Wits entrance tests can be taken by anyone whose matriculation score falls between the legal minimum entry level and the faculty requirement (though in practice the tests mainly admit Blacks), at UCT only black students are permitted to sit its test. Both institutions, however, seek to identify potential and, in effect, to cream off the best qualified black applicants. In science, for example, the 500 or so DET matriculants who annually meet the high scores in math and science set by Wits or UCT for automatic entry into certain faculties end up in these two universities. Admissions patterns in the last two or three years have featured an unprecedentedly high proportion of black students entering first year classes. At Wits, overall composition of the first year in 1991 was 34 percent black, with Blacks representing majorities in first-year law (80%) and dentistry (57%), and very substantial minorities in first-year science (43%), medicine (42%), and arts (36%). UCT first-year statistics are comparable.

Natal employs a different set of procedures which places it between the second and third categories. Its admission and selection processes for disadvantaged students reflect traditional concerns with the identification of academic merit, but they also reflect preoccupation with social issues. Of the four English-medium predominantly white universities, Natal's leadership has been the most unequivocal in expressing a vision of the university as, in future, a mainly black institution. For black students who do not meet automatic entry requirements, Natal has established the Teach, Test, Teach Program. Applicants are sent a package of materials to help them prepare for the entrance exam, together with instructions on how to use it. Candidates take the test one month later in 11 centers, 9 in Natal. In 1991, 1,042 applicants took the test for 235 places. Thirty percent of the places are allocated on academic merit. For the remaining 70 percent, region, gender, and economic background (in addition to academic performance) serve as selection criteria. This procedure brings Natal closest to the policies adopted at the University of the Western Cape, which, until recently, accepted anyone with matriculation exemption.

The affirmative selection procedures utilized today by UWC represent the third category. Committed since 1990 to stabilizing full-time student numbers at present levels, UWC strives to preserve a democratic ethos in its selection process. It achieves

this in the following fashion. First it accepts all students with A or B matriculation aggregates, a tiny proportion of its applicants. Then 20 percent of the remaining applicants are hand selected according to normal academic criteria or the specific requirements of particular faculties. All other applicants are computer selected. A profile is drawn up of the applicants, classifying them by population group, gender, urban or rural upbringing, geographical location, social class, and matriculation performance. Adjustments are made so that the overall composition of the list conforms with the proportions of the different categories enumerated in the profile. Successful entrants are then chosen through random selection.

Notwithstanding its conservative leadership through the 1980's, UDW admitted increasing numbers of African students in similar proportions to UWC. In doing so it was driven partly by the nonracial ideals of many of its staff. However it should be noted that when the University of Natal began admitting large numbers of Indian students after 1984, UDW began to experience falling numbers of Indian applications. Unlike UWC, UDW has not had to institute selection procedures. With fairly modest minimum admission requirements, UDW can still accommodate all those who qualify for enrollment. Its African students, however, increasingly come from rural schools in KwaZulu; according to UDW academic development staff, they are particularly underprepared for university education.

In the remaining category, the historically black universities tend to be least selective and hence the most open. For example, matriculation exemption with a higher grade pass in English is considered by the University of Venda to be the minimum qualification for automatic enrollment. Venda also requires good conduct testimonials. Several of the HBU's (for example, the University of the Transkei and the University of the North) have expanded swiftly as a consequence of increasing numbers of applicants, and, ruling out continuing comparable rates of expansion, they will soon have to start instituting systematic processes of selection. UWC and Wits/UCT procedures represent two of the options open to them.

APPENDIX H

ACADEMIC SUPPORT PROGRAMS FOR DISADVANTAGED UNIVERSITY STUDENTS

As with admissions policies, universities differ in teaching to the extent that they acknowledge an obligation to compensate for the deficiencies of the schooling system. Afrikaans universities do not have special programs to enable students from disadvantaged backgrounds to cope with first year course requirements. RAU employed academic support measures at one stage, but no longer does so. Apparently its black (mainly coloured) students do not perform significantly differently from their white peers. RAU, of course, uses the same criteria to enroll all its students. Given the admission policies at RAU, its view that it does not require remedial education measures is probably quite valid.

At the other end of the spectrum are the institutions in which virtually the entire enrollment is drawn from DET schools or those under homeland authorities, independent or otherwise. Here the requirements of compensatory education for a such a large proportion of students are probably well beyond the skills of university lecturers. In the first generation of HBU's, teaching methods and materials were not designed to meet the developmental needs of disadvantaged students. Until recently, they often echoed the teaching and learning approaches employed in secondary schools. Writing in 1988, Gwala noted:

"Although the original black universities established in 1960 became independent from UNISA in 1969, most lecture material is still largely drawn from UNISA study guides. This syllabus is characterized by its unchanging nature, in spite of the rapid social changes in the country. Lectures, instead of being places for debate and critical exchange of ideas, are places for dictating notes summarized from some outdated or politically "neutral" American text books. This approach results in students learning those notes like the Bible. The "best" students are those who are generally able to reproduce the notes. What is so ironic in these circumstances is that generally lecturers who try and discard them and encourage students to do independent reading are accused of wanting to fail students."

Given the undemanding way in which many classes are taught at certain homeland universities, students more or less cope; whether they acquire analytical skills and critical insights is another question. Again and again, Team members were told that students transferring from these institutions to historically white campuses had considerable difficulty in courses where the emphasis was on independent learning rather than authoritarian instruction.

Within the scope of limited resources, black institutions do what they can. At Transkei, for example, a small grant from the Anglo-American Corporation in 1988 enabled the introduction of bridging courses and enrichment programs in science, math, and English. The university has also established a computer-assisted learning program.

The more developed academic support or academic development programs exist at those institutions with the greatest diversity of students: UWC, UDW, and the still largely white English-medium universities. The essential divide is between those programs which are directed at a minority (albeit, an increasingly large one) and those which attempt to reorganize teaching methods to meet the needs of the most disadvantaged.

The Wits and UCT programs fall into the first group. At Wits, the academic support program involves a substantial commitment of university resources: 31 full-time staff, 17 holding tenured positions. Many of the staff work as tutors in individual departments, predominantly in the arts faculty. At the inception of the program in 1981, support mainly took the form of provision of non-credit bearing courses in English language, study skills, and critical reasoning. The science faculty administered classes in which existing degree courses were taught more intensively to smaller groups over longer contact periods. Through the last decade, the programs have become increasingly sophisticated and diverse. English language courses have been made subject-specific. Student counselling has been added to the services provided by the academic support staff. A special study program for engineering was introduced in 1987. Students enter it if they do badly in their first midterm tests. They study a restructured engineering curriculum over five rather than four years, including supplementary courses. Also in 1987 study skills tutorials began to be offered to postgraduate B.Ed. students. The Wits college of science represents the most ambitious support activity to date. Opening in 1991 to 150 students holding standard grade matriculation math (chosen through a test from 550 applicants), it offers a two-year certificate course which enables a successful student to obtain more credits than usual through an intensively taught curriculum stressing physics and math.

The UCT programs are on a similar scale to Wits. For a longer time than Wits, it has emphasized working with departments rather than supplying supplementary courses outside them. Most ASP staff are seconded to departments. Much of the ASP work undertaken by students is credit bearing. The thrust of the UCT effort has been concentrated in science, medicine, commerce, and engineering. Since 1988, a course in engineering has functioned in collaboration with Peninsula Technikon. Fifty students selected through examination of school records, special tests, and interviews undergo math enrichment and courses in problem solving in engineering. The courses are credit-bearing and are taught over

twice the normal contact time. Commerce currently supports 70 students who take the first year B.Com. syllabus over two years with intensive tutorials.

ASP research programs have also been developed at Wits and UCT, and both increasingly emphasize the involvement of mainstream academic staff. At Wits, the ASP runs specially designed workshops for departments that request them. Participation in such programs was once voluntary; today it is often a condition of admission and bursary award. Interviews with student leaders suggested that ASP programs are not stigmatized: indeed, SRC officials favor their expansion. ASP staff at UCT and Wits regularly evaluate the success of their programs through systematically tracking the progress of students through first-year and later exams (the programs are normally restricted to the first year). The evidence suggests that ASP has substantially enhanced pass rates. Prominent in the two universities' mission statements is the undertaking to provide special teaching assistance to disadvantaged students. Wits and Cape Town acknowledge that academic assistance is only one component in a package of supports that they have to offer to disadvantaged students. They view the provision and expansion of residential accommodation as another indispensable ingredient in any policy geared to expanding black enrollment. Cape Town has established a tutorial system in all its residences which are 87 percent black.

At UWC, the underlying philosophy of academic development (the term "support" is deliberately avoided) is more transformative. The eight employees of the university's Academic Development Center (ADC) function to "infuse" development issues into the "university at large." Their activities are "predicated on the assumption that both the students and the institution have to change." Essentially their concern is to encourage and promote the reorganization of teaching methods within departments to meet the needs of classes that are predominantly drawn from disadvantaged backgrounds. The rhetoric used by members of the program is suggestive of a much more interventionist strategy than those adopted at Wits and UCT. The ADC hopes to facilitate the creation of "learning situations which are less expert oriented," in which "user-friendly learning environments" are created, and in which departments become more "accountable" for the progress of their students. ADC staff seek to divert "subject specific staff from the idea that a particular amount of content must be taught." Since 1990, the practical implications of this program include peer group teaching, the training of a middle layer of tutors, the shift, as far as resources allow, away from the lecture format to small-group teaching using teacher assistants, computer-assisted learning programs at the first-year level, staff development, and voluntary teacher assessment.

The UDW academic support program was initiated in 1988. Prompted by the university's increasingly severe failure rates, the senate

established one post to deal with the situation. Today a Center of Academic Development (CAD) combines a variety of functions usually managed separately at other universities: academic support, ESL training, career advice and counselling, school liaison, and staff development. The ESL unit employs four people who provide language teaching to 600 first-year students. Academic support is undertaken by five faculty-based coordinators who administer teams of senior graduate tutors. In this form, academic support is chiefly of the supplementary variety: extra tutorials, assistance in planning essays, exam guidance, and so on. But academic development is not limited to the CAD programs. There is a growing tendency at a departmental level to move in the direction of the UWC "infusion" model through altering teaching methods and reorganizing curricula content. Interviews indicated that such a process was underway in a number of arts and social science departments (politics, history, psychology) and also in physics, a department with 930 students, many from KwaZulu schools.

Adoption of more intensive teaching methods and the infusion of academic development into mainstream courses may be effective responses to the learning difficulties of disadvantaged students, but they impose costs. At UWC the more able students are apparently feeling a rising level of frustration at the slow pace of instruction, and staff are barely coping with intolerable workloads.

The differences between the two approaches exemplified by the UCT and Wits programs, on the one hand, and the UWC program on the other may be exaggerated by the rhetoric used in the latter institution. Both evolved to meet problems of a different order of magnitude, and they also reflect the different levels of resources available (academic support does not qualify for state funding). Both increasingly demonstrate common emphases on the merits of intensive teaching and the need to reorganize mainstream teaching methods and curriculum to do this. Both represent significant institutional reorientation in the allocation of resources and the direction of teaching practices to meet the needs of African students.

APPENDIX I

INTERNAL GOVERNANCE OF UNIVERSITIES

Today all South African universities are legally autonomous. As discussed in Appendix B, the government relinquished its remaining controls over decision-making within black universities in the 1980's. Each institution has outwardly similar governing structures. At its apex sits a council which is the supreme decision-making body. It approves the budget, can veto senior academic appointments, selects the vice chancellor or rector, and sometimes has a say in the appointment of DVC's and registrars. It also decides major policy issues: fee levels, the proportion of residences, the closure of departments, and so on. Councils always include a nonuniversity majority chosen or appointed by a variety of organized interests and external agencies. Academic matters are left to the discretion of the senate, which is composed predominantly of senior academic staff. At UCT, for instance, the senate decides on admission and exclusions policies, major affirmative action issues, and examination matters. Powers of vice chancellors vary, but, as they and their deputies constitute the day-to-day management of the university, their offices, together with councils and senate, constitute the three most authoritative decision-making levels.

Councils and senates meet at intervals through the year (at UCT, for example, the council meets every month). The scope of their authority is so broad that they are unlikely to intervene in the detailed determination of teaching and research. Some of their work is delegated to committees, but many of the most important curricular decisions are made within individual faculties, which are governed by a dean, a board drawn from lecturers nominated by their department heads, and a series of committees selected by the dean and approved by the board. Departments usually have a permanent chair or head of professorial rank. Department heads have considerable authority; they play a crucial role in staff appointments and have virtual autonomy in deciding course content. The above pattern holds for the predominantly white universities and some of the black ones but not all: at Turfloop, for example, until recently departmental syllabus content required approval from the university's top administration.

Although this broad pattern of administration runs across the subsector, the similarities of formal structure are misleading. The governance of South African universities displays significant variations. These variations flow partly from the different ways in which governing bodies are composed but they are also the consequence of different institutional cultures.

The membership of each university's council is regulated by government legislation. The council of the University of

Durban-Westville, for example, must include 10 nominees of the State President, 3 members chosen by the council itself, 2 elected by the senate, 2 elected by convocation (alumni), 2 elected by donors, 3 municipal representatives, and 3 university officers. Wits includes in its 14-member council representatives of the Chamber of Mines, the Transvaal Chamber of Industry, and the Johannesburg Chamber of Commerce. In many universities, given the high proportion of council members who are nominated by business or the state, it is easy to demonstrate that councils are dominated by people who are likely to be conservative in their political beliefs and social attitudes.

Taylor's (1988) analysis of the Wits council, conducted in 1987, revealed a "high degree of interlock with big business and the state." Six members of its council had past or present connections with the Anglo-American Corporation. Four were directors or CEO's of two other major mining concerns, and two more came from companies under the umbrella of the Afrikaner insurance giant, SANLAM. At that time the council included no black representatives. In 1986 Dr. Nthato Motlana stood as a convocation candidate but was not elected. In 1989 W.T. Kambule, the headmaster of a private high school in Soweto and a former Wits mathematics lecturer, was elected as the council's first African member.

The composition of such bodies does not mean that the university's policy is identical to the interests of the state and big business. At least at the white English-medium universities, councils are often fairly passive bodies. As Taylor put it, "discussion in council often takes the form of exposition or explanation by the Chairman or Vice-Chancellor." During the 1980's, councils on the English speaking campuses supported university leaders in major confrontations with the state over the quota legislation and the efforts by Minister De Klerk in 1987 to make the allocation of subsidies conditional on political quiescence. The Wits council also condemned the establishment of VISTA University. At UCT, according to the registrar, "on virtually every issue council has been more progressive than the senate." In his view, the council at UCT tended to be more vigorously supportive of the university administration than at Wits." This may have been due to the more liberal political climate that has existed traditionally in the Cape Town region.

In any case, big business and the state at times have had different priorities concerning tertiary education. Sensitivity to skilled manpower shortages has been one factor in prompting corporate support for expanding black enrollment, expressed, for instance, in donations for bursaries. On the other hand, the conservative ethos of such bodies helps to set limits on any reform or restructuring the English-medium universities may undertake, reinforcing the determination of Wits and UCT to remain institutions geared to

international criteria of excellence and resisting a movement to the populist mission exemplified by the University of Western Cape.

The cases of UDW and UWC illustrate the difficulties of generalizing about university governance. In both cases the councils are composed of members drawn predominantly from the Indian and coloured communities. In recent years both have experienced high levels of political mobilization; both have appointed vice chancellors committed to fairly radical change and supported them through periods of confrontation with more conservative members of the academic staff and administration.

At UDW during the 1980's, an unusually assertive and well-organized staff association, COMSA (representative of both junior academic staff and administrative personnel), was responsible for pushing through curricular changes as well as opening the full range of university facilities to Africans. University leadership underwent a swift reorientation after the appointment of Jairam Reddy, former dean-elect of the UWC dentistry faculty. Before Reddy's rectorship, changes and reforms were conceded by the hierarchy only after considerable pressure from academic staff and students. Since his arrival in 1990, Reddy has placed senate and staff association representatives on the finance policy committee, a body formerly exclusively made up of council members and senior administrators. Six elected lecturer representatives were also brought on to the senate.

Traditionally, councils in the black universities established or reorganized in 1959 have tended to be drawn from senior academics at the Afrikaans campuses and state appointees. For example the 1991 chairman of Turfloop's council is the vice rector of RAU. Until 1990 the autonomy of black university councils was limited by the requirement to obtain ministerial consent to the appointment of rectors. In the case of the independent homelands, the councils are in effect appointed by the governments. At Unitra, for example, 8 of 15 council members are appointed by the State President and a further 3 are ex-officio. In Bophuthatswana, the vice chancellor is also a government appointee. Here, though, from its inception, leadership was rhetorically committed to "keeping the University free of Afrikaner control" (de Villiers Graaf, 1986), though reformist Afrikaner academics have played an important role in Unibo's planning body. A similar commitment was enlisted in the establishment of the University of the Transkei. Since 1984, under the Bophuthatswana Security Clearance Act, the government has had the power to bar students and staff from educational institutions; comparable legislation existed in South Africa until 1991.

Councils at homeland universities are often more responsive to government pressure than other sections of university leadership. For example at the University of Zululand, clashes between students and Inkatha followers in October 1983 led to senate staff voting

for Chief Gatsha Buthelezi's removal as chancellor. The Chief allowed himself to be persuaded to stay on as chancellor and chief patron of the university foundation after the university council expressed full confidence in his leadership role.

Quite apart from external forms of political interference, which, in the case of the University of the North, took the form of a virtual military occupation for much of 1989-1990, students and staff in black universities have had to contend with an extremely authoritarian environment. For example, at Fort Hare and Turfloop, until recent reforms in both institutions, administrators routinely vetted all outside academic visitors and previewed all papers delivered by their lecturers at conferences.

Recent changes of regime in both the Transkei and the Ciskei opened opportunities for altering university government and leadership. These were dramatically realized in the case of Fort Hare, where a new restructured council included a strong contingent of liberal academics, Anglican churchmen, progressive lawyers, and black trade unionists.

After changes in leadership, the greater powers invested in the vice chancellor's office characteristic of the HBU's can facilitate the implementation of radical shifts in policy. Given ingrained habits of deference to authority, reformist leadership can, to quote one senior member of UDW's administration, "impact very heavily on conservative staff." In Ciskei, Venda, and Transkei, changes in government have removed political constraints on university leadership. But, however visionary a new vice chancellor may be, he or she must still contend with vested interests represented in senate. Senates are mainly composed of senior staff. In English-medium HWU's and Fort Hare, they also include elected representatives of junior staff, but these always constitute a very small minority. Durban-Westville's senate, as listed in its 1991 calendar, has 84 members, all professors or senior lecturers. Only 28 of them are black. It now includes six elected members who are apparently vocal and effective. Nevertheless, a 25 percent voting minority can effectively veto any change or innovation. Africans constitute a minority of the members of senate at the University of the North, a body in which Whites trained at Afrikaner universities continue to prevail.

Fully fledged student representation on governing bodies was only allowed by legislation this year, though students have had observer status on councils, senates, and faculty boards of the more liberal campuses for some years. Elected student representatives will continue to constitute a tiny minority of such bodies. The UWC leadership is engaged in an attempt to push the process of democratization of governance beyond the limits imposed by enabling legislation. To quote Jakes Gerwel, speaking in 1989:

"If at UWC we have learned anything in this regard, it was to attempt the construction of relationships between, on the one hand, the formal structures of governance and, on the other, the university equivalents of mass-based democratic formations: the SRC, SANSO, the Worker's Union, the Democratic Academic Staff Association. Our experience was an interesting conversion of a 'dual power' situation with a cooperative and essentially non-antagonistic relationship between the formal structures and the informal democratic forums."

Clearly the extent to which such "informal democratic forums" exist on different campuses will affect the behavior of formal governance. Here the record is uneven; on some of the black campuses like Unibo and Zululand, student organizations continue to be directly repressed, and Afrikaner student organizations do not customarily adopt confrontationist stances toward university administrations.

As argued at the beginning of this section on governance, institutional cultures are at least as important as the formal arrangement and competence of governing structures in determining the ways in which universities are administered. Such cultures partly reflect the social conventions within the communities in which institutions are situated. Anecdotal information suggests heavy pressures in favor of conformity on Afrikaner campuses as well as socially conservative philosophical attitudes among students. In 1986, RAU students tried to persuade their senate to adopt a measure which would have compelled lecturers to open classes with a prayer (the move was successfully resisted). When Afrikaner universities in the Transvaal and the Orange Free State began very hesitantly to admit Blacks, they did so despite strongly voiced opposition from white students. Conversely, the self-perception within English-medium universities, that they represent liberal values, has enhanced a climate of intellectual tolerance within them. Institutional cultures are not merely the reflection of traditions and social constituency, but they can also be affected by charismatic styles of leadership. Here the example of UWC in creating a corporate identity of social commitment is notable.

APPENDIX J

UNIVERSITY RESEARCH PROGRAMS

South African universities represent the major research institutions in Africa, with international reputations in engineering, the sciences, and medicine. In 1986, according to the World Bank, South African universities generated 3,028 S and T publications, the second national total being Nigeria's at 736 (R. R. Arndt, 1991). Even so, South Africa underspends on research. For developing countries, the UNESCO recommended figure for expenditure on all forms of research is 1.5 percent of Gross National Product (Charney, 1990). At 0.93 percent, South Africa's figure is well below this (CUP, 1987).

The two principal research institutions are Wits and UCT, though by U.S. standards, the scale and proportion of their postgraduate body (M.A. and Ph.D. or equivalent) is quite modest. Both institutions undertake fundamental or basic research of international quality. The UCT research report for 1990 lists 1,013 foreign publications; the Wits 1989 report refers to 961 foreign publications. In 1990, Wits boasted 12 researchers who were, according to the Government's Foundation for Research and Development, "unquestionably accepted by the international academic community as leaders in the field" and a further 37 with "considerable international recognition." Research strengths are concentrated in medicine, natural science, and engineering. Both institutions also have history departments with international reputations.

That said, these two institutions essentially remain oriented to teaching the undergraduates who form the major part of their enrollment. Full-time research workers are located in the science, medical, and technical faculties. Most of the research generated within the arts and social science disciplines is produced by members of teaching departments. Sabbatical leave is awarded to teaching staff every six years under increasingly stringent conditions; it can last between three months and a year. Teaching obligations and duties connected to examinations normally take up 32 weeks of the year. South African universities do not administer the equivalent of summer schools.

Other HWU's also devote substantial resources to research. Pretoria, with a research budget of R50m (the highest nationally), has developed strong linkages between its research program and certain industrial and business sectors. Its strengths can be located in financial analysis, clinical pharmacology, microelectronics, cereal processing, and seed reproduction.

Notwithstanding the research strengths of the HWU's, it needs to be said that they have significant areas of weakness even in the fields of science and technology. A scenario project sponsored by

South Africa's Nedbank drew attention to underinvestment by the South African manufacturing industry in research and development projects conducted at universities. Where linkages between universities and industrial sectors were well developed, the achievements have been conspicuous. To take a notorious example, metallurgical and electronics research at Afrikaans universities were key factors in developing the technology used by the South African arms industry. On the whole, though, South African manufacturing depends heavily on imported technology, and has demonstrated little commitment to local innovation. In an increasingly competitive international environment, South Africa's external technological dependence will make it increasingly difficult to maintain and develop its industrial base. More generally, analysts have noted "the lack of coordination between the objectives of research and socio-economic goals," pointing to the low proportion of academic research funding expended on engineering, technology, math, and computer science in comparison with the resources used to support research in the social sciences and humanities (Arndt, 1991).

On a more positive note, the HWU's have seen a proliferation of research oriented to the needs of poor and disadvantaged communities. At Wits, for example, the faculty of medicine is "beginning to employ research resources outside its traditional research base . . . in the Center for the Study of Health Policy, the Health Services Development Unit, the University's Rural Facility at Umbabat, and the Alexandria Health Center. . . . [S]uch research will play an increasing role in the Faculty's efforts." In a similar fashion, the Wits architecture faculty currently emphasizes research on low-cost housing. Historians at the English-medium HWU's have played a remarkable role in reconstructing the research agenda of South African social scientists around the investigation of working class culture and experience. Humanities and social science scholarship in South Africa, by its nature, tends to be locally oriented, and its achievements cannot be measured on an international scale of excellence in a fashion comparable to medicine or natural science. Such scholarship does, however, sustain a substantial number of local journals, and South African contributions represent a large proportion of the content of British and American African studies publications.

Compared to the English-medium HWU's, the predominantly African universities produce much less postgraduate or postdoctorate research. Fort Hare, for example, registered 461 postgraduates, about a tenth of its total enrollment. Of these, most were honors or diploma students (Annual Report). In 1989, Fort Hare academic staff published a total of 72 scholarly articles and 18 books or monographs. Given the constraints, this is not unimpressive, but, nevertheless, the contrast with Wits/UCT underlines the fact that the black universities remain almost exclusively teaching institutions. The number of students awarded degrees for

postgraduate research (M.A. and Ph.D.) at these institutions is very small. In 1990, VISTA capped three Ph.D.s; Zululand, two; UWC, three; and the University of the North, five. Of these thirteen doctorates, five were in education, two in philosophy, two in social work, two in psychology, one in law, and one in literature. Similar numbers prevailed at the M.A. level within this group of institutions with the exception of UWC, which awarded 17 M.A.'s across a broad range of disciplines including pharmacy, history, and accountancy.

The relative importance of research in each institution is roughly indicated in the numbers of research staff listed in Table J.1 as full-time equivalents in each institution, and their proportions in relation to full-time units expended on teaching. This table indicates that UCT (599), Wits (476), Pretoria (456), Natal (444), Stellenbosch (375), and UNISA (344) account for about two-thirds of the time expended on research at South African universities. In the case of UCT, time devoted to research almost equals teaching time. In historically black universities, research time usually represents about a quarter of teaching time and the absolute numbers of full-time equivalents employed in research are low.

Table J.1.—University research PTE's, 1989

	Research	Teaching
UCT	599	655
UDW	71	323
Medunsa	70	149
Natal	444	558
North	60	239
OFS	185	362
UPE	98	197
Potch	164	354
Pretoria	456	721
RAU	112	260
Rhodes	111	288
UNISA	344	909
Stellenbosch	375	617
UWC	101	401
Wits	476	669
Zulu	46	174
VISTA	46	262
Total	3,759	7,144

Source: DNE

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The figures are misleading in any case. Each university submits its own returns to the DNE for SAPSE purposes, claiming that each member of the academic staff spends a certain proportion of their time on research. There is no clear consensus on what constitutes research in this context; it might range from preparing lecture material to conducting fieldwork. A more accurate measure of research resources available at each university would be the full-time academic staff employed in research institutes, centers, and units. Table J.2 presents this data.

Table J.2.—Research funding, institutes/units, and staff at six universities, 1990

	UDW	UWC	UFH	North	Wits	Zulu-land
Funds (in R)	n/a	974,000	912,358	n/a	R39m*	n/a
No. of units/ institutes	3	5	4	1	22	2
Full-time research staff (academic)	14	16	16	7	95	7

* 1989

Source: University calendars and interviews

The disparities are even more pronounced when it comes to expenditure on research. In 1989, Wits spent R39m. By contrast, in 1990 the University of Fort Hare received a total of R912,338 in research funding (UFH Annual Report).

Even with limited resources, the historically black universities have made considerable efforts to develop research programs. In this respect, Turfloop is distinctive for its work in the life sciences. Two hundred current departmental projects include work on plant and food production, the Freshwater Fish Research Group, investigation of pollution levels along the acid rain belt of the eastern highveld, and research on the beneficiation of low-grade coals. Since 1973, the University's zoology department has coupled its research on parasites with extension work in affected communities. Not surprisingly, the emphasis in the black universities is on applied research, often with a specific orientation to local needs. As Unitra's annual report for 1987 states, "Applied research is entirely acceptable—specially when we take into account that the university is a national university in a developing country."

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In certain fields of applied research, black universities can claim with justification to be playing leadership roles. Both UDW and UWC have well-developed programs in primary health care. UWC currently has more postgraduate work on teaching and learning issues in its faculty of education than any other center in the country.

There is evidence, moreover, that the HBU's are currently placing more emphasis on postgraduate study and postdoctoral research. There are at least two reasons for this trend. First, their new leadership views the current allocation of research facilities between institutions as racially biased and hence ready to be challenged. For the foreseeable future, these universities are bound to educate the majority of black full-time students. Without research programs they are likely, in the perception of their leaderships, to remain inferior institutions. Expectations and ambitions remain oriented to the ideal of a comprehensive university represented today by the white institutions, and, in the past, by the pre-1959 history of Fort Hare.

Secondly, there are considerations of a more pragmatic character. With the expansion of student numbers, black institutions are imposing heavy teaching burdens on their staff. These can be substantially lightened by enrolling larger numbers of postgraduates who can serve as part-time teaching assistants. UWC, for instance, ties its student financial support program to employment within the university. Another practical concern is to attract well-qualified staff. The absence of research facilities is a significant obstacle to successful programs of staff recruitment. Finally, the scale of the state's subsidy is partly influenced by research output. Accordingly, to take once again the example of UWC since the inception of Jakes Gerwel's chancellorship, no less than five research centers or initiatives have been established, all in the social sciences or education. Jakes Gerwel emphasizes the role of postgraduate and research work in enhancing the UWC undergraduate teaching role.

That HBU's seek to develop research programs is hardly surprising in a cultural context where research is defined as one of the essential attributes of being a university. In its 1987 investigation, the Committee of University Principals (CUP) observed that "in a situation where no symbiotic relationship exists between teaching and research, and when one of these functions is practiced exclusively, one doubts whether such an institution can be called a university." CUP's view is that, for most purposes, research is best conducted in a university. In South Africa there exist, alongside the universities and competing with them for resources, state-controlled research councils, of which the two most important are the Council for Industrial and Scientific Research and the Human Science Research Council. The councils absorb about 80 percent of government funding expended on research. The universities contend that they do this wastefully

and without matching the quality of the work undertaken in academic institutions.

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APPENDIX K

TABLES ILLUSTRATING UNIVERSITY UNIT COSTS BY FIELD OF STUDY

Tables K.1 to K.9 show the cost per output unit for nine fields of study and various institutions, both chosen at random. Output units are defined as follows:

Diploma = 1 output unit
 Bachelor's degree = 3 output units
 Honors degree = 4 output units
 Master's degree = 5 output units
 Doctoral degree = 8 output units

Table K.1.—*Cost per output unit: agriculture and renewable natural resources, 1989 (rands)*

University	Output units	Expenditure (Rm)	Cost per output unit (R)
Natal	446	1.0	2,242
North	28	0.8	28,571
OFS	728	1.7	2,335
Stellenbosch	629	2.1	3,339

Source: Computed from DNE (1990)

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Table K.2.—Cost per output unit: business, commerce and management sciences, 1989

University	Output units	Expenditure (Rm)	Cost per output unit (R)
UCT	1,726	3.4	1,970
UDW	178	1.0	5,618
Natal	1,520	2.3	1,513
North	96	1.1	11,458
OFS	433	0.8	1,848
UPE	384	0.8	2,083
Potch	482	2.3	4,772
RAU	1,645	1.9	1,155
Rhodes	244	1.2	4,918
S.A.	6,601	10.1	1,530
Stellenbosch	1,680	2.5	1,488
UWC	157	0.9	5,732
Wits	2,433	5.8	2,384
Zululand	63	0.4	6,349
VISTA	100	1.8	18,000

Source: Computed from DNE (1990)

Table K.3.—Cost per output unit: computer science and data processing, 1989

University	Output units	Expenditure (Rm)	Cost per output unit (R)
UCT	188	0.5	2,660
UDW	33	0.2	6,061
Natal	121	1.0	8,264
North	22	0.2	9,091
OFS	56	0.2	3,571
UPE	84	0.5	5,952
Potch	534	0.4	749
Pretoria	249	0.9	3,614
RAU	184	0.4	2,174
Rhodes	104	0.4	3,846
Stellenbosch	107	0.4	3,738
UWC	9	0.3	33,333
Wits	229	0.4	1,747
S.A.	393	1.2	3,053

Source: Computed from DNE (1990)

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Table K.4.—*Cost per output unit: engineering and engineering technology, 1989*

University	Output units	Expenditure (Rm)	Cost per output unit (R)
UCT	1,075	3.5	3,256
UDW	20	0.9	45,000
Natal	709	2.7	3,808
Potch	180	1.8	10,000
Pretoria	1,558	7.8	5,006
RAU	193	1.5	7,772
Stellenbosch	732	3.6	4,918
Wits	1,131	5.2	4,598

Source: Computed from DNE (1990)

Table K.5.—*Cost per output unit: languages, linguistics, and literature, 1989*

University	Output units	Expenditure (Rm)	Cost per output unit (R)
UDW	251	1.8	7,171
Natal	887	3.5	3,945
North	716	3.0	4,190
Pretoria	973	2.8	2,877
UWC	732	2.1	2,869
Zululand	349	1.5	4,298

Source: Computed from DNE (1990)

Table K.6.—*Cost per output unit: law, 1989*

University	Output units	Expenditure (Rm)	Cost per output unit (R)
North	350	1.5	4,286
RAU	451	0.9	1,996
UWC	201	0.8	3,980
Wits	956	1.7	1,778
Zululand	212	0.7	3,302

Source: Computed from DNE (1990)

Table K.7.—Cost per output unit: life and physical sciences, 1989

University	Output units	Expenditure (Rm)	Cost per output unit (R)
UCT	1,131	5.1	4,509
UDW	340	2.7	7,941
North	141	1.8	12,766
Stellenbosch	930	2.0	2,151
UWC	732	2.0	2,732
Zululand	62	1.3	20,968

Source: Computed from DNE (1990)

Table K.8.—Cost per output unit: public administration and social services, 1989

University	Output units	Expenditure (Rm)	Cost per output unit (R)
North	165	0.8	4,848
Pretoria	431	0.9	2,088
Rhodes	75	0.2	2,667
UNISA	853	2.5	2,931
UWC	141	0.6	4,255
Zululand	115	0.4	3,478

Source: Computed from DNE (1990)

Table K.9.—Cost per output unit: social sciences and social studies, 1989

University	Output units	Expenditure (Rm)	Cost per output unit (R)
UCT	1,436	3.6	2,507
UDW	714	1.5	2,101
North	321	1.3	4,050
UPE	338	1.2	3,550
UNISA	2,364	7.9	3,342
Stellenbosch	1,363	2.4	1.761
VISTA	242	3.3	13,636
UWC	837	1.7	2,031
Zululand	129	1.6	12,403

Source: Computed from DNE (1990)

APPENDIX L

RATIONALIZATION PROPOSALS OF COMMITTEE OF UNIVERSITY PRINCIPALS

Universities are legally autonomous, but, of course, in reality their independence is restricted. Through the funding formula, the government exercises a powerful set of pressures which it can deploy to influence university policy over a wide range of issues. Universities have also given external professional associations a considerable role in determining the content of courses taught in a number of departments and faculties: commerce and law are particular cases in point. Homeland institutions continue to experience government bullying and police interference, though, overall, this is on the decline. Certain Afrikaans-medium universities remain bearers of a tradition in which universities are expected to surrender a degree of intellectual independence as the implication of an ethos in which "the individual finds his own identity by identifying himself with the volk" (Degenaar, 1977, p. 149). Nevertheless, what is remarkable, bearing in mind the size of the universities' share of national resources and their dependence on government funding, is how little government planning and direction there has been historically. Mechanisms for coordinating and organizing the programs and activities of the sector remain weak and essentially voluntary.

The main vehicle for sector planning and coordination is the Committee of University Principals. CUP is a statutory body which has existed since 1955. From 1987, all 17 South African university principals and registrars joined it; before that date it did not represent all the HBU's, and, of course, it still excludes the TBVC institutions. It meets twice a year. It has two essential functions: it advises the Minister of National Education on all matters relating to universities, and it drafts regulations affecting all universities, particularly those affecting admission requirements and exemptions from them. Its decisions are not binding on any institution. Beginning with a modest staff of one part-time secretary and two part-time typists, by 1986 CUP employed nine staff and commanded a budget of R600,000.

In 1987, CUP produced a report entitled "Macro-Aspects of the University within the Context of Tertiary Education in the RSA." The report argued that universities were confronted with a variety of present and future environmental developments for which they were unprepared and badly equipped. These trends included a demographic explosion, low rates of economic growth, the growing importance of informal sector employment, the growing technological gulf between South Africa and its economic competitors, and the information revolution. All these developments required a reorganization and rationalization of the tertiary sector. For universities, the CUP report argued, this meant that institutions

"should develop according to a differentiated model" (p.47). Their activities should be classified into four categories:

1. Those in which a high level of achievement merited recognition as "Centers of Excellence" and continuing support to administer full programs of advanced training and basic research
2. Those departments or faculties that were competent teaching centers, that could undertake selected postgraduate training, and that could be supported to pursue applied research focusing on community problems
3. Departments, especially within the humanities and the social sciences, that could be encouraged to experiment with distance education, which, if imaginatively developed, could become an increasingly important emphasis of those institutions serving predominantly third world communities
4. Those facilities that effectively and appropriately extended the range of university outreach activities

Rationalization would take place on three levels:

1. Within the tertiary sector as a whole, with a more systematic division of functions between universities and other institutions and the reduction of overlap between them
2. Among universities, with the elimination of underused or ineffective departments or faculties and the reduction of unnecessary duplication, as well as the sharing of facilities between nearby institutions
3. Within departments, which would be regrouped to improve teaching methods, research productivity, and student pass rates as well as to utilize facilities more effectively

Implementation of these recommendations has proceeded unevenly and hesitantly. CUP functions through consensus, and institutions can quite easily disregard its prescriptions, though this may soon become more difficult now that tertiary sector rationalization has been incorporated into the recent DNE "Educational Renewal Strategy."

CUP has undertaken a number of pilot studies on disciplines. Following the completion of two of these studies, the CUP academic planning committee recommended the closure of surveying departments at Pretoria and Wits, and the ending of librarianship training at Wits, UOFS, and UWC. Other disciplines under consideration include music, professional accounting, speech and drama, fine arts, modern European languages, and the geosciences.

Not all universities have complied with CUP recommendations. The larger and wealthier institutions are generally more willing to accept the pilot study findings than the HBU's. When interviewed, the UCT leadership said, "the process should have more teeth." Zululand refused to close its librarianship department.

A number of universities have unilaterally begun phasing out departments with declining student populations. At RAU, for example, mineral economics, anthropology, and modern European languages will no longer be taught in separate departments. UCT closed its pharmacy and Portuguese departments. In the case of the latter, this was despite appeals made by the Portuguese Prime Minister to the South African State President.

Cape Town has gone furthest in developing transfer arrangements with local technikons in the fields of commerce and engineering. Students can qualify through taking credits at both institutions. UDW's leadership is also taking the implications of rationalization seriously. Burdened with over 80 departments (and hence top heavy with senior staff), the university cannot function cost effectively.

So far, however, the process has been slow, and in the words of a UCT Deputy Vice Chancellor, it has mainly affected "fringe activity." It confronts a number of obstacles. First, rationalization is viewed by weaker institutions as a strategy designed to conserve the interests of the main HWU's. As Professor Reddy from UDW noted when interviewed, the arguments for rationalization were framed in a fashion that were "almost oblivious of the inequalities of access and resources." Second, the institutional arrangements which might promote a rationalized division of tasks between universities and technikons are embryonic. CUP and CTP has a joint committee that meets twice a year, but, to date, it has never made decisions of any major impact. Third, CUP excludes universities in the TBVC territories. Fourth, one of the ideological legacies of discrimination against black universities is that their model for future development tends to be the urban metropolitan HWU. Understandably, their leaderships would be reluctant to concede the role of accommodating all the major "centers of excellence" to the HWU's. HBU vice chancellors would also probably dispute the criteria that might be proposed by CUP for determining excellence and accreditation. Fifth, the historical construction of South African universities has been inherently irrational in terms of the criteria that inform both CUP and the government's present concept of rationality. The existence of no less than six universities in the vicinity of Johannesburg and Pretoria is testimony to this.

In short, given the political divisions within CUP and the competition for resources between universities, it is difficult to see how a process of sector-wide rationalization can be worked out through consensus. If it is to be effectively accomplished, the

restructuring of tertiary education will require a more authoritative way of implementing policy than is presently within the capacity of CUP.

APPENDIX M

TABLES ILLUSTRATING TECHNIKON UNIT COSTS BY FIELD OF STUDY

Tables M.1 to M.7 show the cost per output unit for various fields of study. Output units for the technikons are defined as follows:

- Certificate = 1 output unit
- First National Diploma (3 yrs) = 3 output units
- First National Diploma (4 yrs) = 4 output units
- National Diploma = 5 output units
- Postdiploma diploma = 1 output unit

The source for the computations in Tables M.1 to M.7 is DNE (1990).

Table M.1.—*Cost per output unit: agriculture and renewable natural resources, 1989 (rands)*

Technikon	Output units	Expenditure (Rm)	Cost per output unit (R)
Natal	123	0.24	1,951
Pretoria	678	1.31	1,932
P.E.	132	0.27	2,045

Table M.2.—*Cost per output unit: architecture and environmental design, 1989 (rands)*

Technikon	Output units	Expenditure (Rm)	Cost per output unit (R)
Natal	174	0.57	3,276
Peninsula	84	0.45	5,357
M.L. Sultan	121	0.44	3,636
Pretoria	299	0.74	2,475

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Table M.3.—Cost per output unit: business, commerce, and management sciences, 1989

Technikon	Output units	Expenditure (Rm)	Cost per output unit (R)
Cape	1,207	3.29	2,726
Wits	701	4.03	5,749
Peninsula	307	1.99	6,482
M.L. Sultan	321	1.28	3,988
N. Transvaal	15	1.00	66,667
RSA	492	1.68	3,415
Mangosuthu	15	0.67	44,667

Table M.4.—Cost per output unit: computer science and data processing, 1989 (rands)

Technikon	Output units	Expenditure (Rm)	Cost per output unit (R)
Cape	254	1.34	5,276
Wits	93	1.56	16,774
Vaal Triangle	54	0.72	13,332
M.L. Sultan	79	0.44	5,570
Peninsula	72	0.49	6,806

Table M.5.—Cost per output unit: engineering and engineering technology, 1989 (rands)

Technikon	Output units	Expenditure (Rm)	Cost per output unit (R)
Natal	1,302	2.72	2,089
Pretoria	1,740	3.64	2,092
Mangosuthu	243	1.52	6,255
Peninsula	293	1.46	4,983
M.L. Sultan	186	1.49	8,011

Table M.6.—Cost per output unit: health sciences, 1989 (rands)

Technikon	Output units	Expenditure (Rm)	Cost per output unit (R)
N. Transvaal	123	0.85	6,911
Wits	438	2.22	5,068
Pretoria	713	1.03	1,445
Peninsula	553	0.88	1,591
M.L. Sultan	218	0.75	3,440

Table M.7.—Cost per output unit: life and physical sciences, 1989

Technikon	Output units	Expenditure (Rm)	Cost per output unit (R)
Cape	202	0.90	4,455
P.E.	62	0.51	8,226
Vaal Triangle	144	0.51	3,542
N. Transvaal	12	0.64	53,333
M.L. Sultan	165	0.78	4,727

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APPENDIX N

DEPARTMENT OF EDUCATION AND TRAINING

PRIMARY TEACHERS' DIPLOMAS SECONDARY TEACHERS' DIPLOMAS

SYLLABUS FOR EDUCATION

1990 STRUCTURE

A. AIM

The aim of this course is to acquaint the student teacher with the basic principles of education on which sound teaching practice can be developed. These principles should also serve to indicate a positive attitude towards the educational task to which the student has committed himself.

B. INTRODUCTION

1. As education can never be isolated from teaching, the day-to-day classroom situation is the point of departure for this course.
2. The syllabus comprises themes which have been selected from the different perspectives (disciplines) by reason of their value to teacher education.
3. For practical reasons a distinction is made between Education, Subject Didactics, Teaching Practice and School Management, although they are not to be separated. The syllabuses supplement each other and the differentiation into separate syllabuses is made only with a view to having more time set aside for professional training in classroom practice.
4. It is the responsibility of the Education lecturer and the Subject Didactics lecturer to ensure that the theoretical aspects of the syllabus, whenever applicable, are linked to their practical application in the specific subject didactics of other subjects. This can be accomplished by co-ordinating interdisciplinary meetings of college staff and by arranging seminars and workshops of specific topics.
5. To create the opportunity for students to do some research in Education it is expected that students should do at least four assignments during the course of each year. These assignments should be done according to specific requirements as laid down by each college.
6. Period of allocation for all courses:

First year: 5 x 40 minutes periods per week.
Second and Third years respectively: 6 x 40 minutes periods per week.

C. CONTENT

C1 FIRST YEAR OF STUDY

SECTION 1 : GENERAL INTRODUCTION (7 periods)

1. Introduction to the different educational part-disciplines (2 periods)
2. Description of relevant basic concepts (5 periods)
 - 2.1 Education - introduction
 - 2.2 Educator and educand
 - 2.3 Moulding, becoming, developing and unlocking (the educand for the world and the world for the educand)
 - 2.4 Coaching (Dressuur)
 - 2.5 The aim of education:
 - adulthood
 - responsibility
 - maturity

SECTION 2: BASIC DIDACTICAL CONCEPT AND PRINCIPLES (12 periods)

1. Didactics (2 periods)
 - 1.1 Subject didactics
 - 1.2 Methodology (teaching methods)
2. Didactic principles (10 periods)
 - 2.1 Totality
 - 2.2 Differentiation
 - 2.3 Integration
 - 2.4 Example
 - 2.5 Actualising
 - 2.6 Socialising
 - 2.7 Individualising
 - 2.8 Environmental teaching
 - 2.9 Purposefulness
 - 2.10 Methodics
 - 2.11 Evaluation (as didactic principle)
 - 2.12 Perception
 - 2.13 Interest and motivation
 - 2.14 Self activity
 - 2.15 Bonding
 - 2.16 Experiencing
 - 2.17 Discovering
 - 2.18 Mastering
 - 2.19 Mother tongue instruction

SECTION 3 : THE TEACHING LEARNING SITUATION (10 periods)

1. The School
- 1.1 The nature and characteristics of the school
- 1.2 The primary and the secondary school
- 1.3 The task of the school

SECTION 4 : THE TEACHER (20 periods)

1. The task of the teacher (4 periods)
 - 1.1 To guide and direct the development of pupils
 - 1.2 To teach and instruct
 - 1.3 To provide authority and security ("geborgenheit") in the school life of pupils
2. Characteristics of a good teacher (9 periods)
 - 2.1 Understanding of and affection for pupils
 - 2.2 Knowledge and training scholarship; the pursuit of further knowledge
 - 2.3 Patience, personal control, calm personality
 - 2.4 Speech, language usage, means of contact with class
 - 2.5 Appearance, example
 - 2.6 Willingness to accept additional responsibility
 - 2.7 Ability to plan and organize
3. Behaviour of the teacher (7 periods)
 - 3.1 Courtesy and good manners
 - 3.2 Loyalty to and respect for those in authority
 - 3.3 Respect for public and private property
 - 3.4 Cleanliness and neatness
 - 3.5 Social behaviour; sound moral behaviour and temperance
 - 3.6 Importance of a Christian outlook on life

SECTION 5 : THE PUPIL (38 periods)

Note: The course that is being followed should determine the time spent on the applicable developmental phase, e.g. PTD (JP) - 20 periods on the pre-primary and junior primary school child and 18 periods on the senior primary and secondary school child together.

1. The concepts of development and learning
2. The life-world of the pre-school child
 - 2.1 The pre-school child's acquisition of language
 - 2.2 The pre-school child's acquisition of a task orientation and self-concept in his:
 - 2.2.1 progression through various forms of play
 - 2.2.2 relation with his material environment
 - 2.2.3 relation with other people (parents, etc.) in his life-world
 - 2.2.4 relation with God

- 2.3 The attainment of school readiness
 - 2.3.1 changes in the pre-school child during the attainment of school readiness
 - 2.3.2 criteria for school readiness
 - 2.3.3 how the level of school readiness can be determined
- 2.4 Attention and interest of the pre-school child
- 3. The child's course of becoming (development) during the primary school years
 - 3.1 The role of the school in the becoming of a child
 - 3.2 Physical development during the primary school period and its impact on becoming (including the concept bodiliness or corporeality)
 - 3.3 The cognitive life of the child during the primary school years
 - 3.4 The affective life of the child during the primary school years
 - 3.5 The learning of language during the primary school years
 - 3.6 The becoming of the primary school child regarding his:
 - 3.6.1 self-concept
 - 3.6.2 relation with his material environment
 - 3.6.3 relation with others (fellow-men)
 - 3.6.4 relation with God
 - 3.6.5 attention and interest in the learning activity
- 4. The life-world of the junior secondary school child (puber)
 - 4.1 Internal influence and development
 - 4.1.1 physical development
 - 4.1.2 cognitive development
 - 4.1.3 affective development
 - 4.1.4 conative development
 - 4.1.5 language development
 - 4.2 External influences and development
 - 4.2.1 the school
 - 4.2.2 cultural influences including the church
 - 4.2.3 social influences
 - 4.2.4 parents and adults
 - 4.3 Development of a self-image
 - 4.4 Development of a world-image
 - 4.5 Development of a God-image
- 5. The life-world of the senior secondary school child
 - 5.1 Physical changes and the development of self-concept
 - 5.2 The discovering of an own inner-world of meaning
 - 5.3 The affective-social aspect of his encounter with his life-world
 - 5.4 The cognitive aspect of his relation with the world
 - 5.5 The religious and moral aspect of his encounter with his life-world
 - 5.6 Attention and interest in the learning activity

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- SECTION 6 : LEARNING (AN OVERVIEW)** (10 periods)
1. How learning is initiated
 2. Types of learning
- SECTION 7 : CURRICULUM AND THE LESSON** (35 periods)
1. The concept curriculum (1 period)
 2. Situation and analysis (needs of the child, society, science) (2 periods)
 3. Aims and objectives (3 periods)
 - 3.1 Characteristics of aims and objectives
 - 3.2 Classification
 4. Content (2 periods)
 - 4.1 Selection criteria
 - 4.2 Systematisation of content (arrangement of content)
 5. Methods of presenting subject matter (6 periods)
 - 5.1 Playing method
 - 5.2 Telling method, lecture method, including telling of stories
 - 5.3 The textbook method
 - 5.4 Self-activity (individual or group)
 - 5.5 Project method: Especially as applied to group work
 - 5.6 Discussion method: Class conversation and learning conversation
 - 5.7 Question-and-answer method (heuristic)
 - 5.8 The problem-solving method
 - 5.9 Programmed instruction
 - 5.10 Competency-based approach
 6. Media (See syllabus for Teaching Practice) (4 periods)
 - 6.1 The concept: medium
 - 6.2 Traditional media (textbook)
 - 6.3 Technological media
 7. The lesson - apply didactic principle where applicable (17 periods)
 - 7.1 Lesson types
 - 7.1.1 the information lesson
 - 7.1.2 the appreciation lesson
 - 7.1.3 the experimental lesson
 - 7.1.4 the drill lesson
 - 7.1.5 the revision lesson
 - 7.1.6 the practical lesson
 - 7.1.7 the observational lesson

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7.2 The content of a lesson

- 7.2.1 the life-world as origin of the curriculum
- 7.2.2 syllabuses as constituents of the curriculum
- 7.2.3 the teacher's scheme of work
- 7.2.4 the lesson as component of the scheme of work

7.3 Planning and preparation of a lesson (the lesson plan in use at the college should be discussed in detail here)

- 7.3.1 necessity of lesson planning
- 7.3.2 formulation of objectives
- 7.3.3 selection of subject matter
- 7.3.4 selection of methods
- 7.3.5 selection and use of reference books, teaching and learning media
- 7.3.6 evaluation

SECTION 8 : MEASUREMENT AND EVALUATION (AN OVERVIEW) (8 periods)

- 1. The aim of measurement and evaluation
- 2. The necessity for pre-planning and for having clear objectives for a test or examination and establishing required standards
- 3. The difference between measurement and evaluation
- 4. The importance of continuous evaluation
- 5. Types of questions:
 - 5.1 essay type
 - 5.2 paragraph
 - 5.3 short answers
 - 5.4 multiple choice
- 6. Diagnosis of errors and remedial teaching strategies
- 7. Interpretation of examination results

TOTAL: 140 periods

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CII. SECOND YEAR OF STUDY

SECTION 1 : CONTINUATION OF FIRST YEAR DIDACTICS (28 periods)

- 1. Questioning (4 periods)
 - 1.1 Characteristics of good questions
 - 1.1 Questioning as a form of continuous assessment
 - 1.2 The objectives of questions (4 periods)
 - During the initial stages, the presentation and the final phase (application) of a lesson:
 - 1.2.1 to create the desired atmosphere
 - 1.2.2 to maintain a lively interest
 - 1.2.3 to test knowledge and understanding
 - 1.2.4 to stress important aspects
 - 1.2.5 to stimulate thought
 - 1.3 Teacher's questions and how they are classified (4 periods)
 - 1.4 Handling of pupils' answers (4 periods)
 - 1.5 Pupils' questions (4 periods)
 - 1.5.1 how and why pupils should be encouraged to ask questions
 - 1.5.2 situations and circumstances which are conducive to the pupils' asking questions spontaneously
 - 1.5.3 answering pupils' questions
- 2. Grouping (4 periods)
 - 2.1 Value of group teaching
 - 2.2 The identification of:
 - (a) the best achievers
 - (b) average pupils
 - (c) the weakest pupils
- 3. Under-achievement and remedying it (4 periods)
 - 3.1 Identifying the under-achiever
 - 3.2 Preventive programmes
 - 3.3 Remedial programmes

SECTION 2 : CONTINUATION OF LEARNING AND DEVELOPMENT (65 periods)

- 1. Introduction to intelligence and aptitude (5 periods)
- 2. The pupils' individuality (6 periods)
 - 2.1 The uniqueness of the pupil in the learning situation
 - 2.2 Practical implications of intellectual difference
 - 2.3 The slow-learning pupil and his education
 - 2.4 The gifted pupil and his education
 - 2.5 Self-realisation

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- 3. Learning (12 periods)
 - 3.1 Guiding ways of learning
 - 3.1.1 becoming aware of
 - 3.1.2 paying attention
 - 3.2 Gnostic (cognitive) ways of learning
 - 3.2.1 perceiving
 - 3.2.2 thinking
 - 3.2.3 memorising
 - 3.3 Conative and affective aspects of learning
 - 3.4 Various types of learning (15 periods)
 - 3.4.1 meaningful learning
 - 3.4.2 motor learning, memorising and forming of automatism
 - 3.4.3 meaningful verbal learning
 - (a) insight and meaningfulness
 - (b) language and meaningful learning
 - (c) representative learning
 - (d) conceptual learning
 - (e) propositional learning
 - (f) exploratory learning
 - (g) problem-solving
 - (h) creativity
 - (i) gaining knowledge of facts
 - 3.5 Children with learning problem (27 periods)
 - 3.5.1 the identification of pupils with learning problems
 - 3.5.2 the task of the teacher with respect to pupils with learning problems
 - 3.5.3 the causes of learning problems
 - 3.5.3.1 Learning problems which mainly arise from the school situation
 - (a) learning problems which can mainly be traced back to the teacher
 - (b) learning problems which may arise from the teacher-pupil relationship and the pupils' relationship with his fellow-pupils
 - (c) learning problems which result from didactical matters
 - (d) learning problems which result from the circumstances of the learning milieu (environment)
 - 3.5.3.2 Learning problems which can mainly be traced back to the family situation or other education situations away from school
 - (a) family situations and their influence on learning problems
 - (b) the brother-sister situation with reference to learning problems
 - (c) erroneous forms of family education which may cause learning problems

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3.5.3.3 Learning problems which stem from the personality structure of the child

- (a) giftedness
- (b) school readiness
- (c) personal tempo
- (d) interests
- (e) nervous tension
- (f) wrong attitudes

3.5.3.4 Learning problems which stem from educational difficulties

- (a) laziness
- (b) stubbornness, aggressiveness
- (c) egocentricity and the impulse of self-assertion
- (d) reading and spelling problems
- (e) problems with calculating

SECTION 3 : PUPILS AND SOCIAL PROBLEMS (15 periods)

- 1. The pupil in the peer group
- 2. The pupil in his family
- 3. Youth problems
 - 3.1 The necessity of a pedagogic approach to problems of youth
 - 3.2 Factors which play a role in youth problems
 - 3.3 Certain prominent youth problems and dealing with them
 - 3.3.1 alienation and the generation gap
 - 3.3.2 school drop-outs
 - 3.3.3 drug abuse and alcoholism
 - 3.3.4 delinquency

SECTION 4 : HISTORY OF EDUCATION (40 periods)

(Any four of the following may be treated)

Note: The emphasis should be throughout be on education and what, from the past, is still of value to education in schools today. Education objectives, organization of education, learning content, methods of teaching, discipline and punishment should receive the necessary attention.

- 1. The culture of early civilization and its influence on education
 - 1.1 The old Israelitic period
 - 1.2 The Ancient Greek period (well known personalities could be used as examples, e.g., Socrates, Aristotle, Plato)
 - 1.3 Roman and Graeco Roman period (possible personalities - Lucretius, Seneca, Plutarch and Cicero)
 - 1.4 Early Christian education

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2. The middle ages and its significance
3. The Renaissance and its significance for education
4. Traditional education in Southern Africa
5. Development of education in Africa since 1960

SECTION 5 : INSTITUTIONS CONCERNED WITH EDUCATION (20 periods)

1. The interrelatedness of the different educational institutions
2. The family
3. The church
4. The state
5. The school
- 5.1 The fundamental relationship between adult and child in the education situation
- 5.2 The interpretation of norms in the school and the relationship of norms to society
- 5.3 The significance of the school with regard to the child's experience of normative reality
 - 5.3.1 the school is directed at anticipating the child's future
 - 5.3.2 the school represents an intermediary world
 - 5.3.3 the school always acts intentionally and never-coincidentally
 - 5.3.4 the school must complete the incipient education which started in family context
- 5.4 The encounter of the child and adult in the school situation
- 5.5 The task of the school in constituting an own life-world for the child

TOTAL 168 periods

CIII. THIRD YEAR OF STUDY

SECTION 1 : CONTINUATION OF SECOND YEAR DIDACTICS (42 periods)

1. Measurement and evaluation
 - 1.1 The aim of measurement and evaluation
The necessity for pre-planning and for having clear objectives for a test or examination and establishing required standards
 - 1.2 The difference between measurement and evaluation
 - 1.3 The importance of continuous evaluation
2. Validity and reliability in testing
 - 2.1 Validity of tests and examinations
 - 2.2 Reliability of tests and examinations
 - 2.3 Validity versus reliability
 - 2.4 Item analysis
 - 2.4.1 aim and use of item analysis
 - 2.4.2 degree of difficulty
 - 2.4.3 discrimination value
 - 2.4.4 reliability value
 - 2.4.5 item bank
3. Drawing up and marking of tests and examinations
 - 3.1 The essay-type test
 - 3.1.1 construction of essay tests
 - 3.1.2 scoring of essay-test; (analytic)
 - a) detailed method;
 - b) global method
 - 3.2 Objective test items
 - 3.2.1 answer completion items
 - a) theory
 - b) example
 - 3.2.2 matching items
 - a) theory
 - b) examples
 - 3.2.3 true/false items
 - a) theory
 - b) examples
 - 3.2.4 arrangement items
 - a) theory
 - b) examples

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- 3.2.5 multiple choice test items
 - a) theory
 - b) examples
- 4. Practical analysis of examples of test and examination papers
- 5. Drawing up of memorandums
- 6. Balancing the paper - compilation for objective testing
 - 6.1 Emphasis on syllabus themes
 - 6.2 Introduction to Bloom's taxonomy and other taxonomies
 - 6.3 The specific table
 - 6.4 Arranging questions
 - 6.5 Allocation of marks
 - 6.6 Allocation of time
- 7. Internal and external examinations
 - Organizing, control and invigilation of tests and examinations
 - Analysis and interpretation of results, i.e. (calculation of averages (arithmetic mean), the median of marks, distribution of marks, etc)
- 9. Principles concerned with promotion and failure
- 10. Compilation of year marks and promotion marks: weighing of tests, examinations, practical work and assignments
- 11. Reporting progress of pupils
- 12. Standardised tests
 - 12.1 Diagnostic tests
 - 12.2 Prognostic tests
 - 12.3 Aptitude tests

SECTION 2 : PHILOSOPHY OF EDUCATION (42 periods)

- 1. Philosophies of life and educational theories and practices
 - Note:** Emphasis must be on the influence a philosophy of life has on education.
 - 1.1 What is a philosophy of life?
 - 1.2 How does a person develop a particular philosophy life?
 - 1.3 The relationship between a philosophy of life and education
- 2. Particular educational theories and practices
 - Make an analysis and comparison of any four of the following with reference to:
 - a) A view on the child
 - b) Aim of education
 - c) Characteristics of education
 - d) Freedom, authority and trust
 - e) Adulthood, morality and responsibility

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- 2.1 Naturalism and education
- 2.2 Liberalism and education
- 2.3 Pragmatism and education
- 2.4 Communism and education
- 2.5 Neo-marxism and education
- 2.6 Socialism and education
- 2.7 Christianity and education
- 2.8 Idealism and education
- 2.9 Fenomenology and education

SECTION E : EDUCATION SYSTEMS

(42 periods)

- 1. The Education System
 - 1.1 Development of an education system
 - 1.2 Development of a school centred education system
 - 1.3 Development of a particular education system
- 2. Characteristics of an Education System
 - 2.1 Interwoven structure
 - 2.2 An integral part of a community (bound to culture)
- 3. A South African Education System
- 4. Foreign Education System (Do any 2 of the following)
 - 4.1 Tanzania
 - 4.2 USA
 - 4.3 USSR
 - 4.4 UK

Note: Education systems should be done under the following headings:

- * The ideology
- * Control
- * Financing
- * Teacher education
- * Demographic factors
- * Compulsory education

SECTION 4 : LEARNING THEORIES

(42 periods)

An introduction to the following learning theories with special reference to their respective contribution to modern education (the emphasis should be on the learning child in the school).

- 1. Memory psychology

	Neuman	(5)
	Ebbinghaus	
- 2. Behaviourism

	Pavlov, Thorndike,	(6)
	Koffka and Wertheimer	

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- | | | | |
|----|-----------------------------------|---------------------------|-----|
| 4. | Psychology of thought | | |
| | a) The School of Cologne | Lindworsky | (6) |
| | b) The School of Wurzburg | O Kulpe | |
| 5. | Cognitive learning psychology | Bruner, Ausubel, Piaget | (8) |
| 6. | Phenomenological view on learning | Langeveld
Van Parreren | (5) |
| 7. | Psychological view on learning | Sonnekus
Ferreira | (6) |

TOTAL: 168 periods

D. EVALUATION

1. Year Mark

- 1.1 A year mark out of 200 must be compiled for each year of study.
- 1.2 Major tests and assignments are suggested for each year of study.

2. Examinations

- 2.1 An end-of-year examination of 3 hours (300 marks) must be written in each year of study. The marks allocated to questions on various sub-sections of the syllabus must be proportional to the number of periods allocated for each section.
- 2.2 At the end of the first and second years of study, colleges must conduct internal examinations and at the end of the third year of study an external examination will be written.
- 2.3 The examination paper at the end of each year of study will be set on the work done in that particular year of study.

3. Final Mark

A final mark in each year of study must be calculated as follows:

Year mark (Tests and assignments)	200 marks
Examination mark	<u>300</u> marks
TOTAL :	500 marks

2/60

APPENDIX O

PERSONS CONTACTED BY THE TESA TEAM

African National Congress (ANC) Education Department Group

Dr. Harold Wolpe (Director, Education Policy Unit, UWC)
Dr. Linda Chisholm (Director, Education Policy Unit, WITS)
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Mr. Ahmed Essop (ANC)
Ms. Lindelwe Mabandla (ANC)

African National Congress (ANC) Education Department

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African National Congress (ANC) Political Department

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Anglo-American and De Beers Chairman's Fund

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Committee of University Principals (CUP)

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Mr. H. De Beer, Deputy Director
Dr. A.G.W. Steyn, Chief Director

Development Bank of South Africa

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Mr. Yogesh Narsing
Mr. Moulán, Researcher

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Mr. J.T. Phelhane, Deputy University Librarian

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Professor Martin West, Deputy Vice Chancellor
Professor John Reid, Deputy Vice Chancellor
Mr. Jon File, Academic Secretary
Mr. Hugh Amooore, Registrar
Professor Michael Savage, Department of Sociology
Professor Ian Scott, Director, ASP
Professor John Cartwright, Dean, Arts
Professor Michael Ashley, Dean, Education
Professor Dirk Van Zyl Smit, Dean, Law
Professor Geoff Brundrit, Acting Dean, Science
Professor Andre Du Toit, Deputy Dean, Social Science
Professor Brian Warner, Deputy Dean, Science
Dr. P. Wild, Head, Research Administration
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Ms. Margaret Bowers Touborg, President, UCT Fund, Inc.
Ms. Anna Mia Van Der Heever, UCT Fund, Inc.
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University of Durban-Westville

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Mr. A. Naidoo, Student Support Services

Econometrix

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Mr. K. Burke, Economist

Educational Opportunities Council

Father Buti Tlhagale

University of Fort Hare

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Professor Magashulala, Dean, Arts
Mr. V. Human, Information/Public Relations
Mr. Ray Holcroft, Admissions
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Dr. Jiya, Faculty of Science
Dr. Fisher, Faculty of Education
Mr. Moodley, Acting Librarian
Mr. Bheki Khumalo, President, Student Representative Council
Mr. Samuel S. Mkebe, Member, Student Representative Council
Mr. Pat Banele Mashane, Member, Student Representative Council
Professor Peter Kota

Good Hope College of Education

Ms. V. Kenyon
Mr. William Scholtz

Independent Development Trust (IDT)

Dr. Merlyn Mehl, Director

Johannesburg College of Education

Professor Graham Hall, Rector

Mangosuthu Technikon

Mr. Charles Peterson

Natal Technikon

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Professor A. Penny, Faculty of Education

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Professor H. Philpot

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Professor G.M. Nkondo, Deputy Vice Chancellor
Professor John K. Tsebe, Librarian
Professor S.P. Machike, Dean, Arts
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Professor Senib N. Mashego, Faculty of Math/Natural Sciences
Professor Phuti E. Ngoepe, Faculty of Math/Natural Sciences
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Godfrey Mokabane, Student

Northern Transvaal Technikon

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PE Technikon

Mr. Wells

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Mr. S. Belot, Assistant Headmaster

Setlegelo Technikon

Mr. Muller

Reserve Bank of South Africa

Mr. Coen Pretorius, Economic Forecasting Division

Standard Bank

Mr. H. Du Preez, Economic Research Division

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Dr. Yvonne Dladla, OD Specialist
Dr. Richard Fehnel, Management Development
Ms. Patricia Kirkman, Administrative Assistant
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University of Transkei

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Dr. Norawana, University planner
Mr. M. Molefi, Information officer

UDUSA

Dr. Ikey Van Der Rheede (UWC), President
Dr. Teboho Moja (UNIBO), Vice President
Ms. Susan Booysen (RAU), Vice President
Ms. Anil Bhagwan (UDW), Vice President
Dr. Nico Cloete (Wits), General Secretary
Mr. Jon Lewis (UNITRA), Treasurer

United States Agency for International Development (USAID)

Mr. David Evans, Human Resources Development Officer
Ms. Dipolelo Ngatane, Project Development Officer

University of Venda

Ms. M.J. Nienaber, Assistant Registrar
Ms. Murphy, Information officer

VISTA University

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Professor E.R. Jenkins, Acting Director, Student Development
Professor I.M. Bredenkamp, Bloemfontein Campus Director
Professor J.V. Rodseth, Centre for Cognitive Development

University of the Western Cape

Professor Jakes Gerwell, Vice Chancellor/Principal
Professor J.J.F. Durand, Deputy Vice Chancellor
Professor S. Coetzee, Dean, Health Sciences

Professor Renfrew Christie, Dean, Research
Professor Wally Morrow, Dean, Education
Professor C.T. Johnson, Dean, Science
Professor M.H. Moola, Dean, Dentistry
Professor S.G.M. Ridge, Dean, Arts
Professor G.D. Cloete, Dean, Theology
Dr. Peter Syster, Research Division
Professor Ulrich Pluddeman, Academic Development Center
Mr. Henry Abdul, Head, Public Relations
Mr. R.A. Seria, Public Relations
Ms. Melenie Walker, Academic Development Center
Ms. Nasima Badsha, Academic Development Center
Ms. W. Santilard, Academic Development Center
Mr. N. Baynath, Academic Development Center
Dr. Dries Sinclair, Health Science
Mr. A. Perker, Public Health

University of the Witwatersrand

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Professor J.T. Steele, Deputy Vice Chancellor
Mr. R. Hofmeyer, Co-ordinator/Advisor, Office of the VC
Professor M. Skuy, Division of Specialized Education
Professor Elizabeth Rankin, Dean, Arts
Professor D.J. Freer, Dean, Education
Professor Ezekiel Mphahlele, African Literature
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Ms. B.A. Dickson, Deputy Registrar, Personnel
Ms. Olga Bernstein, Senior Assistant Registrar, Personnel
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Ms. Judith Howarden, Academic Support Program
Mr. D. Agar, Academic Support Program
Kenneth Creamer, President, Student Representative Council
Kaya Nzema, Student Representative Council

APPENDIX F

INSTITUTIONAL PUBLICATIONS AND REPORTS CONSULTED

P.1 UNIVERSITIES

UNIVERSITY OF CAPE TOWN

Calendar 1991
Director's Report on ASP Programs and Activities in 1990
Financial Assistance for Undergraduate Students (1991)
Information for Applicants for Undergraduate Degrees and Diplomas
(1992)
Information for Application
Research Report 1990
Student Fees 1991
UCT News 13.7 (Sept. 1986), 18.1 (May 1991), 18.2 (Oct. 1991)
University Authorities and Staff (1991)
Vice Chancellor's Report 1990

UNIVERSITY OF DURBAN-WESTVILLE

Calendar 1991
1991 Fees Payable
Jairam Reddy, Installation Address, June 21, 1991
UDW in Brief
Varsity Voice, Sept. and Oct. 1991
The Year at UDW

UNIVERSITY OF FORT HARE

Annual Report 1990
Calendar 1990
Fort Harian 15 (Apr. 1991), 16 (May 1991)
Information Brochure - University of Fort Hare
Supplementary to the 1990/91 Calendar

UNIVERSITY OF NORTH

The Vice-Chancellor's Message 1991

UNIVERSITY OF PORT ELIZABETH

Calendar 1991

UNIVERSITY OF PRETORIA

Annual Report 1990

Calendar 1991

Link-Up July 3, 1991 (International liaison publication of the
University of Pretoria)

Prospectus 1990

RAND AFRIKAANS UNIVERSITEIT

Aansoek op toelating tot die Universiteit en Universiteits koshuis
vir die jaar

Aansoek op 'n RAU - Metietebeurs en/of in Univeriteitsbeheerde
lening

Algemene Regulasies

Die Berekening van die M Teiling vir toelating

Fakulteit Ekonomiese en Bestuurswetenskappe

Fakulteit Ingenieurswese

Fakulteit Lettere en Wysbegeerte

Fakulteit Natuurwetenskappe

Fakulteit Opvoedkunde

Fakulteit Regsgeleerdheid

Ingenieup

Die Kampus waar ons kampioene vorm

Keuses van loopbane vir die sportman en sportvrou

Koshuislewe by RAU

Prospectus 1990

Rapport (Junie 1991)

Studentegelde 1991 (January 1991)

Joe toekoms in 'n neutedop

RHODES UNIVERSITY

Calendar 1991

Staff Directory (March 1991)

UNIVERSITY OF SOUTH AFRICA (UNISA)

Study at Unisa 1992

Calendar 1991

Calendar 1992 (Faculty of Arts)

Calendar 1992 (General Information)

Instructions for completing the registration form for 1992

UNIVERSITY OF STELLENBOSCH

Algemene Jaarboek 1991

Calendar 1991

Dit is Matieland 1991
History
Kursusse en studierigtings (1991)
Matiesport 1991
Rector's report 1990

UNIVERSITY OF TRANSKEI

Annual Report 1987

UNIVERSITEIT VAN DIE ORANJE VRYSTAAT

Aansoek om toelating tot die Universiteit en 'n
Universiteitskoshuis
Vir die vorming van die totale mens
Campus Layout
Inligting in verband met beskikbare beurse en lenings (1991)
Algemeen Jaarboek Deel 1
Gelde Betaalbaar

UNIVERSITY OF VENDA

Student Information Brochure

UNIVERSITY OF WESTERN CAPE

Bulletin 3.28 (1991), 3.29 (1991)
Calendar 1991
Community and Health Sciences Funding Proposal
General Information (Part 1)
Science, Personpower Development Comprehensive Proposal
Towards an Academic Plan of Action, 1991
Vice-Chancellor's Report for 1989
Winter Graduation Ceremony. June 28, 1991

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

African Studies Institute. Annual Report 1990
Calendar 1991
Center for Applied Legal Studies. Annual Report. Oct. 1989-Sept.
1990
College of Science Information for Prospective Students
Commitment to the Future Brochure
Community Outreach Brochure
Facts on Wits
Report Convocation
Report of the Vice-Chancellor 1990

Research Report 1989
Values and Objectives Flyer
Wits Students 43.9, 10, 11 (1991)

THE UNIVERSITY OF ZULULAND

Calendar 1991
Official Publication of the University of Zululand
Unizulu 1990

P.2 TECHNIKONS

CAPE TECHNIKON

Annual Report
Courses and Admission Requirements
List of Class Fees 1991

CISKEI TECHNIKON

Application for Admission
Fees and Fee Regulations
Information Brochure
Opening the Door to Success

TECHNIKON GA-RANKUWA

Prospectus 1991: General Information
Prospectus 1991: Secretarial and Commerce Department
Prospectus 1991: Chemistry Department
Prospectus 1991: Library Information

TECHNIKON MANGOSUTHU

Request for the Annual Report

M. L SULTAN TECHNIKON

1989 Annual Report
1990 Annual Report

TECHNIKON NATAL

Annual Report of Council 1990

Application for Academic Admission
Information for Prospective Students
Statistical Brochure 1990
Tuition Fees for Enrollments 1991

TECHNIKON NORTHERN TRANSVAAL

Prospectus 1991-1992

TECHNIKON OFS

Annual Report 1990
Application for Admission
Information on Courses 1991

PENINSULA TECHNIKON

Applications & Registrations 1991
Rector's report
Year-Book: School of Art and Design
Year-Book: School of Architecture, Civil Engineering, and Building
89/90
Year-Book: School of Business Studies 90/91
Year-Book: School of Education 1990/91
Year-Book: School of Secretarial Training, Languages,
Communication, and Journalism 1990/91

TECHNIKON PRETORIA

Annual Report 1990

TECHNIKON RSA

Annual Report 1990

UNITRA TECHNIKON

Request for Annual Report

VAAL TRIANGLE TECHNIKON VANDERBIJLPARK

Accountant
Admission Requirements
Applied Sciences
Artist

Ceramic Designer
Civil Engineering
Computer Technology
Cost and Management
Electrical Engineering
Engineering
Executive Secretary
Food and Clothing Technology
Graphic Designer
Industrial Engineering
Internal Auditor
Metallurgical Technician
Personnel Officer/Manager
Photographer
Public Relations Officer
Purchasing Officer/Manager
Secretary Business Computing
Secretary (Office Administration)
Technician Mechanical

TECHNIKON WITWATERSRAND

Annual Report 1989
Annual Report 1990
Fees Regulations
Prospectus

APPENDIX Q

TERTIARY EDUCATION SECTOR ASSESSMENT (TESA)

SCOPE OF WORK

I. GOALS

The goals of the Tertiary Education Sector Assessment (TESA) are to:

1. Provide a comprehensive and in-depth analysis of the constraints and challenges which face the tertiary education system in South Africa and provide information on options for a post-apartheid system;
2. Investigate the basis for a rationalization of post-secondary ~~1/educational institutions~~ and to provide information to the current debate on rationalization;
3. Identify those tertiary level institutions which are best placed to make a significant contribution to national development and educational needs; and
4. Locate key departments within South African post-secondary institutions which, given strategically-defined support, will provide critical human and material resources for development.

II. INTRODUCTION

Currently, there are 109 tertiary level educational institutions in South Africa, including 21 universities, 15 technikons and 73 teacher training colleges. In addition, there are 135 Technical Colleges, some of them at the post-secondary level. At the same time, approximately half the population is illiterate and the educational system produces a relatively low percentage of secondary school completers, especially among the black population. This unusually high ratio of post-secondary institutions to literate population and/or secondary school completers is, on one hand, a reflection of four decades of segregationist policies and, on the other hand, a legacy of poor educational planning. The

1/ Throughout this scope of work we refer to tertiary education and post secondary education. We use the term tertiary to mean those ~~post-secondary institutions~~ which grant degrees and certificates, while the term post-secondary refers to all those institutions which provide training programs (formal and non-formal) aimed at education beyond the secondary level.

problem is compounded by the fact that the quality of education within each of the types of tertiary-level institutions is generally uneven, content is often irrelevant to national development needs, and institutional goals are often poorly aligned in preparation for what is generally referred to as the "New South Africa".

Some institutions offer high quality education by any standard, have dynamic leadership, and have made good strides in developing nonracial institutions open to black students (although all these characteristics may not be present in each institution), while others are poorly managed, provide mediocre to poor quality education and indifferent services, particularly to black students. Moreover, the quality of education at many institutions has declined as the South African Government (SAG) has reduced its subsidy to tertiary level institutions in each of the last five years, while the demands placed on these institutions have increased dramatically. In short, tertiary level education in South Africa is in the midst of an educational and financial crisis.

Governing and policy options within the tertiary education level range from state control in the case of teacher training colleges and some of the technical colleges, to autonomous boards for universities and technikons. In practice, the control of the various parts of the sector is a maze of central government, "self-governing" states such as KwaZulu; and "independent" states, such as the so-called TBVC countries (Transkei, Bophuthatswana, Venda & Ciskei). Educational matters are run by fifteen different departments. There is no cooperation between the various education departments and little inter-institutional contact. Students are unable to transfer from one institution to another except on a limited scale between some universities and teacher training colleges.

On an academic hierarchical level, the universities form the apex of the tertiary system followed by technikons, teacher training colleges and, lastly, some technical colleges. The universities offer courses from the undergraduate to the graduate level within the same institutions and they are the only institutions which award degrees. Technikons offer professional diplomas and are not linked in any way to universities. The study programs at the technikons comprise approximately 50% theoretical and 50% practical work. The practical aspect provides for up to eighteen months of internship in the private sector. The teacher training colleges concentrate on career training for teachers and offer professional diplomas specified as minimum teaching requirements for primary and secondary education. Some of the teacher training colleges are linked to the universities on the undergraduate level and there is limited acceptance and transferability of college courses to universities. The universities also act as "referees" of academic standards at the teacher training colleges.

Universities

There are 21 universities of varying standards administered by fifteen different education departments. Each of these universities operates as an island unto itself with limited cross-pollination with other universities or other tertiary institutions.

The Act which steered the university system into its most intransigent phase was ironically called the Extension of University Act of 1959. In terms of this Act, the white Afrikaans and English-medium institutions were forbidden to admit students classified as "non-whites." Instead, a network of black universities was created around the country to cater for the various "nationalities" such as Zulu, Xhosa, Sotho, "colored," etc. Some of these universities are situated in remote rural areas with little or no infrastructure and for many years were dismissively referred to as "bush colleges."

Consequently, and in contrast to their white counterparts, these "bush colleges" remained marginalized in the university system, attracting faculty with relatively low qualifications, having little or no access to private sector funding, remaining underdeveloped with regards to specialized programs such as the medical or engineering sciences, and retaining an emphasis on teaching in the absence of mechanisms to develop quality research programs. The "white" universities, however, enjoyed more autonomy. They were left to pursue their own goals on curriculum, admissions, recruitment of private sector funding, and the appointment of academic staff, except on the matter of black admissions and staff appointment.

Technikons

Technikons, of which there are 25 with a total student enrolment of approximately 100,000, are the traditional step-children of the system. They enjoy limited prestige and are erroneously thought of as places students attend if they can not gain admission to universities. Policies and standards are monitored within the technikon system but no degrees are awarded and there are no course transfers possible between technikons and universities. Curriculum is career orientated and weighted in favor of practical training.

As with universities, "white" technikons offer better education and a wider variety of courses. All the technikons for whites, "coloreds" and Indians are situated in urban areas, thus, graduates can gain easy access to the industries for work placement. The technikons for blacks or "Africans," on the other hand, are often situated in rural areas, where there are few viable industries.

It has been estimated that each year 200,000 vacancies exist for technically trained people while the entire technikon system trains only 100,000 annually. Nonetheless, although industry and Government officials continually stress the need for technically competent people to cater for the development demands of the country, technikon graduates still have difficulty obtaining employment and gaining practical experience.

Teacher Training Colleges

The 73 teacher training colleges have had very little autonomy and are also segregated. They are the custodians of "Christian National Education," thus, curriculum and policy regarding admissions and staff appointments are set by state officials. In fact, teachers are considered by the state to be state employees and not professionals in their own right. In particular, black teachers have been in an invidious position, torn, on the one hand, between identifying with community protest and action against repressive education policies and, on the other, meeting their obligations to the State, their paymasters.

Until recently, black trainees were accepted in the colleges with a minimum of standard eight qualification (10th grade) for a primary teacher diploma, while whites were required to have standard ten (12th grade) qualification. This clearly has given rise to a perception that white teachers are better qualified and will maintain the superiority of white education, while the lesser qualifications of black teachers will maintain their educational disadvantage.

Most of the teacher training colleges for blacks, like the "bush colleges," are situated in rural areas or the homelands. Compared with white colleges, black colleges are relatively under resourced.

Technical Colleges

There are approximately 135 technical colleges. They offer courses ranging from the secondary school level (i.e. 12th grade and lower) to the post-secondary level. As a result, some fall under the secondary school system and various Government departments. They are not linked to any other tertiary institutions and tend to focus on vocational subjects.

III. RATIONALE

The level of activity and debate around educational issues has been intense in the post "1976 school uprising" era. Several authoritative Government commissions, from the de Lange Commission to the present "Education Renewal Strategy," still reflect a Christian Nationalist/racist bias. While current Government thinking on educational needs is less influenced by ideology than the past and more by how scarce resources should be distributed, key constituencies are still left out of the process and a coherent overall strategy is missing.

Opposition organizations such as the African National Congress (ANC) have challenged many of these initiatives for not meeting the expectations of the black community. As a result, organizations such as the ANC, the National Education Coordinating Committee (NECC) and others are currently engaged in major educational studies and policy discussions.

An important function of the USAID Tertiary Education Sector Assessment is, therefore, to take account of these initiatives and attempt to provide the means to open up the debate to all the major participants and stakeholders.

The comprehensive Anti-Apartheid Act of 1986, which authorizes A.T.D. to provide assistance to South Africa, also specifically prohibits A.T.D. to co-finance any organization which is "funded or controlled" by the South African Government (SAG). Since all tertiary sector institutions in South Africa are funded in part by the SAG, USAID cannot provide direct support to the tertiary education sector. Once the restrictive legislation is lifted, however, USAID/SA wishes to be prepared to play a key role in providing assistance to the tertiary sector. Accordingly, the general purpose of the tertiary education sector assessment (TESA) is to review the status of post-secondary education in South Africa with a view to improving the relationship between tertiary and post-secondary education and national development and to encouraging educational reform within the sector. USAID/SA expects that this assessment will be catalytic to the current debate about the future of a nonracial tertiary education system.

IV. POLICY CONSTRAINTS

While the enactment of legislation will continue to plague any initiative by the SAG to reform the education sector, scarce resources and a lack of access to the system will continue to hamper those seeking alternative strategies. Therefore, some of the constraints which the TESA team will face include:

1. Over the entire spectrum of tertiary and post-secondary education there is little or no common purpose and no inter-institutional cooperation.
2. The administration of tertiary education is split into fifteen different departments 2/ thereby making a coherent overview very difficult.

2/ The administrative structure consists of five central government departments: House of Assembly (whites own affairs), House of Delegates ("colored" own affairs), House of Representatives (Indian own affairs), the Department of National Education and the Department of Education and Training, six "self governing states" and four "independent states."

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3. The responsibility for collecting data resides in the the fifteen different departments plus several other sources such as the Development Bank of Southern Africa (DBSA). Thus, the data is rarely collected using uniform methodology and seldom available in raw figures, making comparisons of data difficult. Although individual universities generate data for internal use, it is not readily available to the general public.

4. Data is often collected and presented with a strong ideological bias by the South African Government. Data analysis is often skewed in an attempt to prove, for instance, that the same amount is spent on black students and white students. Thus, much of the data analysis must be questioned for its validity.

5. Significant inefficiencies in the tertiary education sector, resulting from the lack of an economic rationale for financing the different segments of tertiary education.

6. Problems of access and progression from secondary to tertiary institutions, and transfer ability of students and faculty among institutions.

V. Objectives

The study will be guided by the following objectives, each clarified by illustrative questions:

1. Examine the feasibility of and formulate strategies for restructuring the tertiary education system and tertiary education institutions in general, and the respective roles of the four major types of post-secondary institutions (teacher training and technical colleges, technikons, universities).

- To what extent are the different sets of tertiary education institutions functioning effectively? If not, what are the obstacles (historical, institutional, political) to achieving a more efficient and less redundant system and what is the relative importance of each? What steps need to be taken to bring about a better coordinated, more effective, nonracial, quality tertiary education system in a post apartheid South Africa?

2. Analyze and make recommendations regarding the opportunities for Africanization of tertiary education institutions in terms of research programs and courses of study.

- To what extent is Africanization being pursued in tertiary education programs, and in which disciplines or departments has greater (lesser) success been achieved and why? What are the main obstacles which hamper effective Africanization and what are the main ingredients of success when effective Africanization has been achieved?

3. Formulate strategies and designs for the democratization of tertiary institutions (i.e., increasing access and opportunity) in terms of race, gender, class and with respect to both institutional access in general (e.g., blacks into elite white institutions) and in reference to particular programs (e.g., women in engineering).

- Are existing measures to enhance democratization (e.g., admission policies, affirmative action) adequate, and what further interventions could be utilized to achieve this goal?

4. Identify exemplary institutions, departments and programs which merit support and which can inform the development of similar initiatives elsewhere. Describe the level and type of support needed to allow these institutions, departments and programs to be more effective.

- Which institutions have had greater success (and why) in enhancing the racial diversity of their student population and faculty, in enhancing the learning environment for disadvantaged students (e.g., Academic Support Programs), in placing students in non-traditional courses (e.g., blacks in medicine), and in supporting quality education.

5. Analyze the merits and problems of the "rationalization" of resources among and within tertiary education institutions to ensure quality education and, at the same time, meet the higher education requirements of a post-apartheid South Africa.

- Given the deracialization of education in South Africa, are the number of tertiary education institutions (in general and by type) and tertiary education programs justified? If not, what are the problems and possibilities of rationalizing financial and other resources accordingly?

6. Recommend policy options and suggest future programming directions for improving tertiary education in South Africa within the context of current and future constraints and in light of experiences elsewhere.

What can USAID, other donors, policymakers in a post-apartheid government, and contemporary leaders in higher education constructively do to increase the internal and external efficiency of the tertiary education sector in South Africa? At a policy level, what areas are most important and how should they be addressed? At a programming level, what kind of donor interventions make most sense and what are the cost implication of each?

Two weeks prior to the commencement of the TESA, USAID/SA will provide the team leader with an illustrative list of questions for each of the post-secondary sub-sector. During the first week of TESA, the TESA team will add to and further refine the questions.

VI. Key Personnel

Individual team members must meet the following general criteria: a) prior work experience relating to education systems in third world settings; and b) at least a Master's degree in the designated area of expertise. Training and experience in educational policy studies, especially in the tertiary sector, and work experience in and familiarity with education systems of Southern Africa is desirable. Each of the three sub-sector (university, technical and teacher training) will be examined by a two-person team consisting of one curriculum analyst and one institutional development specialist.

The tertiary education sector assessment team will consist of the following members:

1. Team leader/Higher Education Policy Analyst
2. Curriculum Analyst - University Education
3. Institutional Development Specialist - University Education
4. Curriculum Analyst - Post-Secondary Technical Education
5. Institutional Development Specialist - Post-Secondary Technical Education
6. Curriculum Analyst - ~~Teacher Training~~ —
7. Institutional Development Specialist - Teacher Training
8. Educational Economist
9. Educational Statistician
10. Research Assistant

The team will consist of both international experts and South African experts. The South African experts will be the education statistician and research assistant and one member of the two person team in each of the three sub-sectors (university, technical, teacher training). It is expected that the team will be equally balanced with South African and international experts.

A. Team Leader

The assessment requires a team leader who, in addition to meeting the criteria above, has experience in the coordination and leadership of education assessments of the type described in this scope of work. A strong

background, training and experience in tertiary education policy in the developing world, preferably Africa, is essential. Prior experience conducting sector assessments for A.I.D. or other international agencies which carry out assessments of this type is also required.

The team leader will have ultimate responsibility for managing TESA under the direction of USAID/SA's Human Resource Development Officer and integrating the various inputs into a cohesive final report. He/She will make at least two presentations of the report including one to USAID and another to local educators and other interested parties. Specific responsibilities will include:

1. lead and coordinate all segments of the TESA;
2. offer feedback, support, direction and regular assessment of individual consultants' work;
3. ensure that individual inputs and the final document fall within the "scope of work" and general USAID guidelines;
4. liaise regularly with and report to the USAID Mission staff throughout the duration of the sector assessment;
5. edit, synthesize and, if necessary, redraft the different elements of the report into a coherent, consistent and logical education assessment document;
6. maintain close coordination with the team leader of the Primary Education Sector Assessment (conducted under separate contract) to insure that the findings of that analysis are integrated, where appropriate, into the analysis and recommendations of the TESA; and
7. present the final TESA report to USAID and to other audiences in South Africa, as indicated through consultation with USAID.

The following specialists will serve under the general direction and management of the team leader.

B. Education Statistician

The education statistician shall have training and experience in collecting, analyzing and assessing national data resources. Familiarity with South African post-secondary education data is desirable. Illustrative tasks include:

1. analyze and test the validity of diverse and divergent sources of statistical data, i.e. sources from government, research institutes, universities, etc.

2. reconcile data available in different institutions in South Africa into a meaningful country-wide statistical data base which describes tertiary education in S.A.;
3. transfer those statistics which are divided into ethnic and institutional departments to a meaningful national statistical map. The national data presented should help inform policy makers working towards a unitary, nonracial, rationalized tertiary education system;
4. collect and analyze, in collaboration with the rest of the team, data used in the particular areas addressed by this assessment;
5. disaggregate national statistics in terms of race, gender and regional identities which can assist with programs to address racial, gender and regional inequalities;
6. collect data on student access, retention and success rates within the tertiary system;
7. collect data on admissions policies and how they may be used as tools to change or perpetuate ethnic policies;
8. collect data on and investigate affirmative action programs or other such programs used to open institutions to all groups; and
9. produce a final statistical report for use as an index or supplemental volume which contains reliable summary data in illustrative form (maps, diagrams, charts, etc.) and can serve as basis for making policy decisions in tertiary education.

The Education statistician will be aided by a research assistant to carry out the above tasks.

C. Research Assistant

The research assistant shall be a graduate student pursuing a Master's or Doctorate in Education in South Africa. S/he should be familiar with the literature on higher education reform in South Africa, and will work with the team leader and educational statistician to collect important data and publications for the review of the team members. Specific responsibilities will include:

1. work under the general direction of the education statistician to assist in accomplishing the tasks of the statistician 1-9 above;

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2. work under the direction of the team leader to collect, analyze and summarize important documents in the field of higher education;
3. assist with logistical matters, such as arranging meetings, running errands and liaising with South African educators (particularly to set up the general briefing); and
4. participate as a full team member in the analysis and development of the NEQA, as needed and as directed by the team leader.

D. Curriculum Analysis (three people - one in each sub-sector: University, Technical and Teacher Training Education)

The curriculum analysts, trained and experienced in curriculum development and analysis, must be able to assess the status of the education curriculum both at the national level and in the various sub-sector. They will need to work as a unit with the institutional development specialist in their particular sub-sector, since their respective problem areas are strongly interdependent. Specific responsibilities will include:

1. analyze the merits of and identify appropriate strategies for a rationalization of courses of study, research programs and certification systems within and among tertiary education institutions;
2. analyze the curriculum in their respective sub-sector with a view to improving systemic articulation and recommend interventions which could improve articulation (such as a common course numbering scheme) both within the sub-sector and within the tertiary education sector;
3. analyze in the different post-secondary institutions, the problems and successes of Africanizing curriculum content for instructional or research purposes;
4. analyze the democratization of access to specialized courses (e.g., engineering, dentistry, mathematics, medicine) in terms of race, gender and class identifies;
5. compare and assess the different curriculum programs (e.g., Academic Support) which have been offered in some institutions to reduce the high "drop-out" rates among particularly disadvantaged students during the first years of post-secondary education;
6. identify those institutions or departments which have had greater success in a) democratizing access (gender/race/class) to specialized courses; b) rationalizing curriculum resources, courses of study or

research programs within and among nearby institutions; c) Africanizing courses and programs from the traditional Eurocentric focus; and d) mobilizing resources to increase the retention of disadvantaged students in the tertiary education sector and recommend intervention which could enhance those approaches;

7. locate the curriculum barriers to effective teaching and learning in the tertiary sector, particularly for disadvantaged black South Africans;

8. determine the current availability and suitability of basic textbooks in the particular sub-sector on a racial/regional basis; and

9. recommend specific interventions which will improve curriculum practice and achieve the assessment objectives in the South African tertiary sector.

F Institutional Development Specialists (three people one each in University, Technical and Teacher Training Education)

The Institutional Development Specialists shall have training and experience in the assessment and development of tertiary educational institutions. In addition, each shall have experience specific to at least one of the sectors of tertiary education, namely, universities, technical education or teacher training colleges. In view of USAID/SA's specific interest in the field of public administration, the institutional development specialist for the university sector should have an additional qualification in public administration. Specific tasks include:

1. analyze institutional capability (at the level of specific institutions) in terms of:

a. appropriateness and effectiveness of the governance structure and procedures of the institution;

b. financial management of the institution, in light of current and projected levels and sources of income, and resource demands as student enrollment and institutional employee patterns change;

c. human resources of the institution, in terms of quality and quantity of faculty, administrators and support staff;

d. curricula and educational delivery systems of the institution, in terms of quality, appropriateness and efficiency of implementation;

e. research and community service programs, in terms of standards, appropriateness and integration with curricula;

- f. student population, in terms of democratization (race, gender, class), matriculation by areas of study, and standards of preparation at time of admission and graduation;
 - g. facilities of the institution, including classrooms, labs, equipment, libraries, offices, dormitories, and other pertinent considerations; and
 - h. appropriate offices (such as Alumni Affairs, Community Liaison, etc.) with effective linkages to the community, other educational institutions, the private sector, professional organizations, and government agencies.
2. assess the institutional structure (or lack thereof) among the types of institutions (universities, colleges and technikons), and among the institutions of the same type in terms of:
 - a. capacity to determine demand for educational resources and services;
 - b. capacity to plan for efficient and effective use of resources in response to demand, and in light of available resources; and
 - c. capacity and commitment to participate responsibly in formulating and implementing policies which further the goals of rationalization, democratization, and Africanization of the sector.
 3. assist other team members in planning, analyzing and integrating their assessments into a comprehensive assessment of the sector;
 4. identify the key individuals and organizations which have a significant stake in the outcome of efforts to rationalize and redistribute tertiary education resources, and ensure that their concerns are articulated;
 5. facilitate the development of a process through which key stakeholders (including representatives of the private sector, NGOs, professional associations, and other relevant non-education interests) can continue dialogue after TESA has concluded, concerning the restructuring, rationalization and redistribution of tertiary education missions and resources;
 6. identify specific areas where further research into institutional issues is necessary in order for assessment of the tertiary sector to be enhanced or completed, or to prepare for any follow-up activities to this assessment; and

7. identify and recommend activities which USAID's technical assistance teams may consider for immediate action in their workplans.

F. Educational Economist:

The Educational Economist shall assess the ability of the economy and the Government of South Africa to support the tertiary education sector in the next decade, given the current financial and budgetary constraints. The Economist shall examine ways in which rationalization of the tertiary education sector might free-up resources or otherwise maximize resources for the tertiary sector. He or she shall also examine the cost-effectiveness of various current programs within the sub-sectors and the recommendations of the other team members and rank them in order of their cost-effectiveness. Specific responsibilities include:

1. analyze current cost and financing arrangements for tertiary institutions and their role in the broader education sector in South Africa's overall budget and the economy as a whole;
2. analyze the financial implications of current financial allocations to tertiary education and how they compare with other countries at similar levels of development;
3. estimate financial inputs required to achieve clearly defined levels of gender, race class equity and quality for tertiary education;
4. project existing sources of finance, both government and private, and the future viability of such financing, particularly in light of the expected growth of secondary school leavers;
5. with the other members of the team, cost their recommendations and rank them in order of cost effectiveness;
6. examine the current financial subsidies paid to universities, teacher training colleges and technicians and determine how effective the subsidies are in relation to teaching/research activities and how sustainable they are over the longer term, supplying recommendations on how to improve or modify the financial subsidy scheme;
7. estimate what the current system costs to sustain and what a reformed system based on the recommendations of the team for rationalization would cost to operate; and
8. examine the internal efficiency of selected tertiary education institutions in each sub-sector.

V. Level of Effort

The assessment will span a total of ten weeks, beginning on or about September 22, 1991, and concluding on or about December 15, 1991. The team is expected to work six day weeks and will be paid accordingly. The following is an illustrative table of the number of days required to complete the scope of work by each consultant:

<u>Sub-Title</u> <u>Days</u>	<u>Number of Persons</u>	
Team Leader	1	60 days
Educational Statistician	1	30 days
Research Assistant	1	60 days
Educational Economist	1	30 days
Curriculum Analysts	3	48 days ea
Institutional development	<u>3</u>	<u>48 days ea</u>
	10	468 days

Consultants will be expected to work from their hotel rooms, with a central location provided for meetings and other coordination by the Tertiary Education Program Support (TEPS) unit in Johannesburg.

Five working days prior to arriving in South Africa, the team leader will conduct preparatory work in Washington D.C. which will include: identification of key supporting resources on education policy; meeting with the education IQC firm; initial interviews with key sources (South or Southern African experts); and review of tertiary education sector assessments conducted in neighboring Southern African states.

Three working days before the rest of the team arrives, the team leader will meet with the Mission to develop a draft work plan to be presented to the Mission and the other team members and ratified before the end of the first full week.

All other team members will start their programs by participating in a two-day orientation session. The USAID Mission staff will assist with explanations of the scope of work and with suggestions for initial contacts and resources. Briefings will be provided by selected South African educators actively involved in the education policy debate. The group will also work together to ratify the proposed work plan. Midway through the first week, the TESA team will present the work plan for Mission approval outlining the schedule and areas of responsibility for completing the scope of work within the allotted period of time.

The second to fifth weeks of the TESA study will be devoted to intensive data collection and analysis as described in the Mission approved workplan. By the middle of the third week, each consultant shall make available to the team leader and the

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Mission staff, substantive outlines detailing what areas are being investigated, along with the preliminary findings. Midway through the assessment, the TESA team will have its second combined deliberations with the Mission. At this time it will be important, under the guidance of the team leader, to review progress, identify areas yet to be covered, assess the timetable for completion, and share individual concerns or problems encountered during the first three weeks of the assessment.

By the sixth week, each consultant will have completed his/her individual reports for submission to the team leader. During this period the consultants will work closely with the team leader to establish continuity and consistency in the report.

By the beginning of the seventh week, the final draft report will be completed. The team will brief the Mission and present the draft report for comments within two working days.

A further five working days are provided for the team leader to integrate Mission comments and last minute additions into the report. During this time the team leader will conduct a briefing for interested South African educators.

REPORTING

Throughout the assessment, the team leader will engage in regular discussions with the Mission staff on the progress and problems of the assessment, on at least a weekly basis.

The team leader will report to the Chief of the Education and Training Office for general and technical direction; immediate management issues and day-to-day implementation issues will be handled by the team leader in consultation with the Project Development Officer, Dipolelo Ngatame.

By the end of the seventh week, the preliminary draft report will be circulated to Mission staff and presented for discussion. The Mission will provide substantive feedback to the TESA team within 72 hours of receiving this draft report.

Based on the feedback received, the eighth and final week allows for the preparation of the final draft report which will be submitted to the Mission for a second round of commentary by the end of that week.

The Mission will present comments to the team leader two weeks after reception of the final draft report, and two weeks later (i.e. one month after the completion of consultations in South Africa), the team leader will forward not less than five copies of the final report to the Mission by air courier and not less than thirty copies by pouch.

In addition to the formal reporting requirements outlined above, the Mission may require the team leader to provide written or oral progress reports from time to time during the course of the

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study. Regular feedback sessions will be held between the TESA team and the Mission staff, and each of the five reports will be the basis for a joint meeting.

Summarized:

Nature of report	Due
1. Workplan	1st week
2. Substantive Outlines	mid 3rd week
3. Early Draft Report	mid 5th week
4. Preliminary Draft Report	end 8th week
5. Final Draft Report	end 9th week
6. Final Report	4 weeks after presenting

Table B

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BIBLIOGRAPHY

- Academic Freedom Committees, University of Cape Town and University of the Witwatersrand. *The Open Universities in South Africa and Academic Freedom 1957-1974*. Cape Town: Juta, 1974.
- African National Congress. *Discussion Paper for the ANC on Education Policy*. Johannesburg: March 1991.
- Agar, D., J. Hofmeyr, and J. Moulder. *Bridging Education in the 1990s: Learning From Experience*. Johannesburg: EduSource, 1991.
- Alexander, N. *Education and the Struggle for National Liberation in South Africa: Essays and Speeches by Neville Alexander (1985-1989)*. Johannesburg: Skotaville, 1990.
- Arndt, R. R. "The Demands Set By the New South Africa On University Research." Conference of CUP, July 24, 1991.
- Background Notes on South Africa*. U.S. Department of State, Bureau of Public Affairs. March 1990.
- Barker, F. *Manpower Development: A Critical Element for Higher Economic Growth for South Africa*. University of Western Cape Institute for Social Development, 1990.
- Beale, E.M. "Education Policy at Fort Hare in the 1960's." *Perspectives in Education* 12.1 (1990): 41-54.
- Behr, A.L. *Education in South Africa: Origins, Issues, and Trends: 1652-1988*. Pretoria: Academica, 1988.
- . *New Perspectives in South African Education: A Review of Education in South Africa, 1652-1984*. 2nd ed. Durban: Butterworths, 1984.
- . "South Africa Universities Today: Perceptions for a Changing Society." *South African Journal of Higher Education* 1.1 (1987): 3-8.
- Booyesen, P. de V. "The Challenge of Numbers." Paper presented at a meeting of the Committee of University Principals. Jan. 25, 1990.
- Bot, M. "Educational Renewal." *Social and Economic Update* 15. Special Issue 4 (July 1991): 1-11.
- . *Training on Separate Tracks: Segregated Technical Education and Prospects for its Erosion*. Johannesburg: SAIRR, 1988.

- Bradbury, J. *South Africa's Universities*. World University Service Briefing. London, 1988.
- Bradbury, J. and A. Craig. *Learning Guide*. Durban: University of Natal Press, 1991.
- Bunting, I. "Educational Data - The Universities and Technikons." (Unpublished) University of Cape Town, 1991.
- Butterworths Guide to the Statutes of South Africa: 1910-1990*. Durban: Butterworths, 1990.
- Carskens, P.D. and A. Du Plessis. *Education and Manpower Development 8* (1987). Research Institute on Education Planning. University of the OFS Press. May 1988.
- "The Changing Face of the University of Natal." *Natal University Focus* 2.4 (Spring 1991).
- Charney, C. "This Season's Made-in-Washington Look." *Times Higher Education Supplement* (September 28, 1990).
- Clase, P.J. *Technological Education in South Africa: A Challenge to Technikons*. 1987.
- Cobbe, J. "Economic Policy Issues in the Education Sector." Conference Paper. University of York Center for Southern African Studies, 1986.
- "Comments on Educational Renewal Strategy (ERS)." PRISEC Paper, Sept. 1991.
- Committee of Technikon Principals Policy Statement. Career Education and Technology. 1991.
- Committee of University Principals. "Chairman's Report." 1990.
- . "Macro-Aspects of the University Within the Context of Tertiary Education in the RSA." Report of the Main Committee of the CUP Investigation. CUP, 1987.
- . "The Nature, Composition and Functioning of the CUP, Its Sub-Committees and Directorates." CUP Internal Document, 1991.
- Coombes, T. *A Consultation on Higher Education in Africa*. Report to the Ford and Rockefeller Foundations. Jan. 1991.
- Council of Rectors and Deans of Teacher Education in KwaZulu-Natal (CORDTEK). "A Strategy for Change." Papers delivered at the annual conferences held by CORDTEK, 1988 and 1989. KwaZulu-Natal: Le Roux A. L., 1989.

- Cross, M. "A Historical Review of Education in South Africa: Towards an Assessment." *Comparative Education* 22.
- De Jager, J.A. "The Technical College as a Partner in the Training Partnership." Paper presented at the National Symposium, Oct. 2-4, 1991.
- De Clercq, F. "Black Universities as Contested Terrains: The Politics of Progressive Engagement." *Perspectives in Education* 12.2 (1991): 49-64.
- De V. Graaf, J.P. "High Ideas and Hard Reality: The Care of UNIBO." *Reality* (Jan. 1986): 14-17.
- De Villiers, M. *White Tribe Dreaming*. London: Penguin, 1987.
- Department of Education (Bophuthatswana). *Annual Report 1989*.
 ----- (Cape). *Annual Report 1989*.
 ----- (Cape). *Education Statistics 1989*.
 ----- (Gazankhulu). *Annual Report 1990*.
 ----- (Kangwane). Policy and Budget Speech by Prof. S.S. Ripinga, Minister of Education, 1991-92.
 ----- (Lebowa). *Newsletter No. 1*. 1988.
 ----- (Natal). *Statistics and Information*. 1990 and 1991.
 ----- (QwaQwa). *Annual Report 1988*.
 ----- (Transkei). *Annual Report 1989*.
- Department of Education and Culture (House of Assembly). *Annual Report 1989 and 1990*. Orange Free State, 1989 and 1990.
 ----- (House of Assembly). *National Criteria for the Evaluation of South African Qualifications for Employment*. Pretoria: GPO 1991.
 ----- (House of Delegates). *Annual Report 1990*. RP 62/1991.
 ----- (House of Delegates). *Education Statistics as of 6 March 1990 and Five-Year Projections 1991-1995*.
 ----- (House of Representatives). *Annual Report 1990*.
 ----- (Kangwane). *Annual Report 1990*.
 ----- (Kwandebele). *Annual Report 1990*.

296

- (Kwazulu). *Annual Report 1990*.
- Department of Education and Training. *Annual Report 1989 and 1990*.
- . *Syllabuses for Teachers' Diplomas*. Pretoria: DET, 1990.
- Department of National Education. "Academic Standards at Universities in the RSA." NATED 02-129 (87/10). Pretoria: DNE, 1987.
- . "Educational Programs for Pre-Tertiary Education in South Africa." NATED 02-124 (88/06). Pretoria: DNE, 1988.
- . "Education Finance Data." Pretoria: DNE, 1990.
- . "Education in the RSA 1985-1989: Time Series Representations." NATED 02-230 (90/02). Pretoria: DNE, 1990.
- . "Education in the RSA 1986-1990: Time Series Representations." Pretoria: DNE, 1990.
- . "Education in the RSA 1987." NATED 02-215 (90/02). Pretoria: DNE, 1990.
- . "Education in the RSA 1987: Graphical Representations." NATED 02-216 (90/02). Pretoria: DNE, 1990.
- . "Education in the RSA 1988." Pretoria: DNE, 1990.
- . "Education Realities in South Africa 1990." NATED 02-300 (91/06). Pretoria: DNE, 1991.
- . "Education Renewal Strategy." Discussion Document. Pretoria: DNE, 1991.
- . "Formal Technical College Instructional Programs in the RSA." NASOP 02-191 (91/01), NATED 02-191 (91/01). Pretoria: DNE, 1991.
- . "Formal Technikon Instructional Programs in the RSA." NASOP 02-151 (91/01), NATED 02-151 (91/01). Pretoria: DNE, 1991.
- . "Instructional Programs in Public Ordinary Schools of the Various Departments of State Responsible for Education." NATED 02-501 (89/03). Pretoria: DNE, 1989.
- . "The Objective, Structure, and Functioning of the Post-Secondary Educational System." NATED 02-108 (90-01). Pretoria: DNE, 1990.

- . *Preliminary Education Statistics for 1989*. NATED 02-214 (89/07). Pretoria: DNE, 1989.
- . *Preliminary Education Statistics for 1990*. Pretoria: DNE, 1990.
- . *Preliminary Education Statistics for 1991*. Pretoria: DNE, 1991.
- . "A Qualification Structure for Universities in South Africa " NATED 02-116 (89/01). Pretoria: DNE, 1989.
- . "Requirements for National Instructional Programs of Technikons." NATED 02-150 (88/01). Pretoria: DNE, 1988.
- . "A Resume of Instructional Programs in Public Ordinary Schools." NATED 02-116 (89/03). Pretoria: DNE, 1989.
- . "SAPSE and SANEP Statistics 1986: Graphical Representations of Total Tables." NATED 02-170 (88/01). Pretoria: DNE, 1991.
- . "The Structure and Operation of the South African Education System." NATED 02-170 (88/01). Pretoria: DNE, 1988.
- Development Bank of Southern Africa. *SATBVC Countries: Statistical Abstracts 1989*. Halfway House, 1990.
- "Development in Southern Africa. An Assessment and Directory," in *Prodder's Annual 1989-90*. South Africa: Program for Development Research (Prodder).
- Dostal, E. *Notebook on Education Perspectives*. Stellenbosch: Institute for Future Research, 1988.
- Dreijmanis, J. "The Development of Tertiary Education," in *South Africa: The Challenge of Reform*. Ed. P.J. Van Vuuren et al. Pinetown: O. Burgess, 1988.
- Du Preez, A.L. *South Africa's High-Level Manpower Supply and Demand Statistics: Projections and Analysis*. Second draft (unp.) Technikon Natal, 1989.
- Educational Development Trust, Education for Transformation*. IDT Publication, 1991.
- Educational Policy*. ANC Discussion Paper. March 1991.
- Educational Realities in South Africa 1990*. NATED 02-300 Report as part of ERS undertaken by Committee of Education Ministries. UNISA, June 1991.

- Econometrix, "South African Economic Analysis and Outlook." Johannesburg: 1991.
- Education and Manpower Development*. RIEP. Faculty of Education UOFS, Aug. 1990.
- Education Management Program for a Post-Apartheid South Africa*. Project Proposal. Bristol University School of Education. July 1991.
- Education Policy Unit. "Financing of Education." Proceedings from an EPU workshop. Johannesburg: University of the Witwatersrand, June 1988.
- Education Renewal Strategy (ERS): Discussion Document*. Ministry of National Education. June 1991.
- Education Renewal Strategy: Document and Critiques 1991*. South African Communication Service. Aug. 1991.
- Encyclopedia of Employers*. Ministry of Manpower, Image Advertising (Ptg), Ltd., 1990.
- Federation of Technical College Councils. *Vocational Education: The Role of Technical Colleges*. Western Cape.
- File, J. "The Politics of Excellence: University Education in the South African Context." *Social Dynamics* 12.1 (1986): 26-42.
- File, J., A. van der Heener, and S.J. Saunders. "Toward the Day of Hard Choices." *Nature*. Sept. 1989.
- Final Report: Committee of Enquiry into Sexual Harassment*. Chaired by Dr. Mamphela Ramphele. UCT, Oct. 1991.
- Financing Education in Developing Countries: An Exploration of Policy Options*. Washington, D.C.: World Bank, 1984.
- Fuller, B. *Growing Up Modern: The Western State Builds Third-World Schools*. New York: Routledge, 1991.
- Gaydon, V. *Race Against the Ratios: The Why and How of Desegregating Teacher Training*. Johannesburg: SAIRR, 1987.
- Gerwell, J. "Inaugural Address." University of the Western Cape. June 1987.
- "Intellectuals in Changing South Africa." The Second David Webster Memorial Lecture. University of the Witwatersrand. May 1991.

- Gordon, A. "South African Farm Schools - The Neglected Factor." Paper presented to the Farm School Networking Conference. Broederstroom, July 1991.
- Gourley, B. "University Finances." *Natal University Focus* 2.4 (Spring 1991): 9-11.
- Gunthorp, J. "Community Building and University Access." Paper presented for the Student Selection Committee. University of Natal, September 1991.
- Gwala, N. "State Control, Student Politics, and the Crisis in Black Universities," in *Popular Struggles in South Africa*, ed. W. Cobbett and R. Cohen. London: James Currey, 1988.
- Hartshorne, K. "Back to the Future: Africa Matric Results 1989-1990." *Indicator SA* 8.3 (Winter 1991).
- "Education in the Homelands." The Etheredge Commemoration Lecture. University of the Witwatersrand, June 1989.
- "National Education Policy Investigation." Unpublished paper prepared for the Primary Education Sector Assessment (PESA), Oct. 1991.
- Human Resource Development for a Post-Apartheid South Africa.* Report of a Commonwealth Expert Group. London: Commonwealth Secretariat, 1991.
- Human Sciences Research Council. *Finger-tip Facts on Education in the RSA.* Pretoria: Division of Education Systems and Strategies, 1991.
- Hunter, P. "The Transforming of Learning: The Evolution of an Academic Support Program." *South African Journal of Higher Education* 3.2 (1989): 68-78.
- "Improving Primary Education in the Developing Countries." Envision Corporation Producers.
- Independent Examinations Board. Colloquium #5. "Primary Schooling and Basic Education." May 1991.
- Institute of International Education. "The South Africa-U.S. University Linkages Program." July 1991.
- Jacobs, M.A. *Statistical Overview of Education in KwaZulu Natal.* Durban: The Education Foundation, 1990.

- Jansen, J.D., ed. *Knowledge and Power in South Africa: Critical Perspectives Across the Disciplines*. Johannesburg: Skotaville, 1991.
- Jenkins, E.R. "Language and Education in South Africa." Paper delivered at the LICCA Conference. Pretoria: April 7, 1991.
- Johnson, C.T. "Comprehensive Proposal for Person Power Development in the Faculty of Science." Internal Document. UWC, 1991.
- Johnson, D. et al. "Formal and Non-formal Structures of Human Resource Development for a Post-Apartheid South Africa." Ottawa: Commonwealth Secretariat, April 1981.
- Jooma, A. "Social and Economic Update 11." *Update*. Aug. 24, 1990. Johannesburg: SAIRR, 1990.
- Kallaway, P. *Apartheid and Education: The Education of Black South Africans*. Johannesburg: Ravan, 1984.
- Kell, C. "Activists and Academics: The Role of Liberal Universities and Research for the Democratic Movement," in *Apartheid Education and Popular Struggles*, ed. E. Unterhalter et al. London: Zed Books, 1991.
- Kelly, J. "Social and Economic Update 12, July-December 1990." *Update*. Jan. 1991. Johannesburg: SAIRR, 1991.
- "Update 10, January-June 1990." *Update*. Feb. 7, 1990. Johannesburg: SAIRR, 1990.
- Kenyon, Alan and Viv. "Doing Things Differently in DET: A Retrospective Case Study of an Innovation in Teacher Education." Proceedings of the Kenton Conference, University of Fort Hare, 1991.
- Lapping, B. *Apartheid: A History*. London: Paladin Graphon, 1987.
- Lee, R.H. "No Coups d'Etat: Education Policy Change in the 1990s." *Policy Issues and Actors* 3.4. (1991). Center for Policy Studies, University of the Witwatersrand.
- Loots, L. "Appropriate Fiscal Policy for Sustainable Redistribution." University of the Western Cape, 1991.
- Macdonald, C.A. "Ballpoint Pens and Braided Hair: An Analysis of Reasoning Skills and the Curriculum." Report SOLING-18. Pretoria: HSRC, 1990.
- "English Language Skills Evaluation." Report SOLING-17 1990. Pretoria: HSRC, 1990.

- . "Standard Three General Science Research 1987-1988." Report SOLING-21 1990. Pretoria: HSRC, 1990.
- . "Swimming up the Waterfall: A Study of School-Based Learning Experiences." Report SOLING-19 1990. Pretoria: HSRC, 1990.
- Mackay, S. "Quarterly Countdown Nineteen." *Countdown* July 31, 1991. Johannesburg: SAIRR, 1991.
- Malherbe, E. *Education in South Africa 1923-1975*. Johannesburg: Juta, 1977.
- "Manpower Development for the New South Africa." National Symposium sponsored by Building Industries Federation (S.A.) 51 vols. October 1991.
- Marcum, J.A., ed. *Education, Race, and Social Change in South Africa*. Berkeley: University of California, 1982.
- Marx, A.W. *Consultant Report to the United Nations Development Program on the Education Sector in South Africa*. New York: Columbia University Press, 1991.
- McKay, V.I. "A Sociological Study of 'People's Education' in South Africa: A Humanist Evaluation." Ph.D. Thesis. UNISA, 1990.
- Mehl, M.C. "Academic Support: Developmental Giant or Academic Pauper." *South African Journal of Higher Education* 2.1 (1988): 17-20.
- Mehl, M.C. and C.J. Gerwel. "Academic Development at the University of the Western Cape." Paper delivered at a Conference on Education Development in the South African Universities. 1990.
- Mluleki, G. "It's False to Follow the Oxford Model." *Frontline* 6.9 (1987).
- Molobi, E. "The University as a White Elephant." *Frontline* 6.9 (1987).
- Morrow, W. *Chain of Thought: Philosophical Essays in South African Education*. South Africa: Southern Book, 1989.
- Moulder, J. "Undoing the Past: Index of Educational Need." *Indicator SA* 8.3 (Winter, 1991).
- Mphahlele, E. "Alternative Institutions of Education for Africans in South Africa: An Exploration of Rationale, Goals and Direction." *Harvard Education Review* 60.1 (1990).

- Ndebele, N. "Managing the Period of Transition to a Democratic University." Richard Feetham Memorial Lecture. University of the Witwatersrand, May 1991.
- Ngubentombi, S.V.S. *Education in the Republic of the Transkei*. Pretoria: Academica, 1989.
- Nkondo, G.M. *Turfloop Testimony: The Dilemma of a Black University in South Africa*. Johannesburg: Ravan, 1976.
- Oosthuizen, A.C., ed. *Challenge to a South African University: The University of Durban Westville*. Cape Town: Oxford UP, 1981.
- Osborn, E. "South Africa Must Be Wary of Carpet-Baggers Bearing Foreign Aid." *Business Day* (August 16, 1991).
- "Paris Statement on International Assistance to Victims of Apartheid with Fields of Education and Training." Final Draft. Paris: UNESCO/UNETPAI, 1991.
- Perceptions of Wits: The Role of the University in a Changing South Africa*. Johannesburg: University of the Witwatersrand, 1986.
- Pigozzi, M.J. and V.J. Cieutat. "Improving the Efficiency of Educational Systems." *Education and Human Resources Sector Assessment Manual*. Washington, D.C.: USAID, Aug. 1988.
- Pillay, P. "Reassessing Strategies for Financing Education in South Africa." *Social Dynamics* 15.2 (1989): 25-39.
- Proctor-Sims, R., ed. *Technical and Vocational Education in Southern Africa*. Silverton: Conference Associates, 1981.
- Proposal for a Development Project in Quality Management in Higher Education Institutions in South Africa*. Bureau for Academic Support UOFS, 1991.
- Psacharopoulos, G. and M. Woodhall. *Education for Development: An Analysis of Investment Choices*. New York: Oxford UP, 1985.
- Reagen, T.G. and I. Ntshoe. "Language Policy and Black Education in South Africa." *Journal of Research and Development in Education* 20.2 (1989).
- Report on the Activities of the Joint Working Group on Education Established at a Meeting on 25 February 1991, Between Delegations Led by the State President and the President of the African National Congress. 17 July 1991. Cape Town: Joint Working Group on Education, May 26, 1991.

- Research Institute for Educational Planning (RIEP). *Education and Manpower Development 1987*. University of the Orange Free State Press, 1988 and 1990.
- Research Institute for Educational Planning (RIEP). Faculty of Education University of the Orange Free State, 1991.
- Response by the Education Delegation led by the President of the ANC to Report on the Activities of the Joint Working Group on Education. (undated)
- "Review on Education: Education in Rural Areas." *Weekly Mail*. October 4, 1991.
- Rex, J., ed. *Apartheid and Social Research*. Paris: UNESCO, 1981.
- . "University of the Witwatersrand." *Financial Mail Survey* (July 6, 1990).
- Riordan, R. "Of Returning Exiles and History Texts." *Eastern Province Herald* (Aug. 19, 1991).
- "The Road to One Education System: The Convoluted Structure of Education in South Africa." *The Weekly Mail* (Feb. 15-21, 1991).
- Rodseth, V. *Advanced Reading Across the Curriculum*. Project Proposal. VISTA, Oct. 1991.
- Sass, A. "Academic Support in Engineering at the University of Cape Town." *South African Journal of Higher Education* 2.1 (1988): 25-28.
- . "Witwatersrand University." *Financial Mail Survey* (July 6, 1990).
- Saunders, S. "Freedom, the Universities, and the Future." *SAIRR Topical Briefing* (Dec. 10, 1987): 1-13.
- Shifrin, T. "Gateways." *Leadership* 10.1 (Feb. 1991): 14-18.
- Simon, A. "Black Students' Perceptions of Factors Related to Academic Performance in a Rural Area of Natal Province, South Africa." *Journal of Negro Education* 55.4 (1986).
- Sinclair, M.R. *Hope at Last*. Washington: Henry J. Kaiser Family Foundation, 1990.
- South Africa (Republic of). *Debates of Parliament (Hansard)*. Cape Town: GPO, 1990-1991.

- South African Institute of Race Relations (SAIRR). *Annual Survey of Race Relations, 1989-90*.
- . "Constituent Assembly and Interim Government." *Fast Facts* (March 2, 1991).
- . *Race Relations Surveys*. Johannesburg: SAIRR, 1980-1990.
- . *Social and Economic Update* 10, 11, 12, 13, 16. Johannesburg: SAIRR, 1990-1991.
- South African Reserve Bank. *Quarterly Bulletin*. Pretoria: SARB, 1980-1991.
- South African Statistics 1990*. Pretoria: Central Statistical Service, 1990.
- Sparks, A. "Fort Hare Bursts its Shackles." *The Star* [Johannesburg] (Oct. 23, 1991): 16.
- Standard Bank. *The South African Economy in 1992*. Johannesburg: Standard Bank Economics Division, 1991.
- Statement About the Rationalization of Universities in South Africa*. UWC, April 1990.
- Stoker, D.J. et al. *Investigation Into Differential Entrance Requirements for Tertiary Educational Institutions*. Pretoria: HSRC, 1985.
- Swainson, N. "Tertiary Education and Training Needs for Post-Apartheid South Africa." *RSA/HRD* 3.3 (1990).
- Taylor, R. "South Africa's Open Universities: Challenging Apartheid?" *Higher Education Review* 22.3 (Summer 1990): 5-17.
- . "University of the Witwatersrand Ltd: Big Business Connections and Influence on University Council." *Perspectives in Education* 10.2 (1988-89): 71-76.
- Tema, B.O. "Academic Support: Its Assumptions and Implications." *South African Journal of Higher Education* 2.1 (1988): 29-31.
- Towards an Academic Plan of Action: Proposed Principles for UWC's Academic Planning in the 1990's*. Internal Document. UWC, June 1991.
- Trotter, G. "Estimating the Costs of Education." *Indicator SA* 6.1.2 (Summer/Autumn 1989).

- . *The Social Costs of Education in South Africa.* Commissioned by the Urban Foundation. Durban: Economic Research Unit University of Natal, 1988.
- UNESCO. *Statistical Yearbook.* Paris: UNESCO, 1990.
- A University in Action.* UWC Publication. 1990.
- University of Cape Town Fund. *1991 Annual Report.*
- . *Vice Chancellor's Report, 1990.*
- University of the Western Cape. *Vice Chancellor's Report, 1989.*
- Urban Foundation. *Annual Review, 1990.*
- . *Policies for a New Urban Future. Population Trends: Demographic Projection Model.* Urban Debate 2010.
- The Urban Foundation Annual Review, 1990.*
- Van der Merwe, H.W. and D. Welsh, eds. *The Future of the University in Southern Africa.* Cape Town: David Philip, 1977.
- Van Rooyen, H. "The Disparity between English as a Subject and English as the Medium of Learning." Report SOLING-20 1990. Pretoria: HSRC, 1990.
- . *School-Based Learning Experiences.* SOLING-19. Pretoria: HSRC, 1990.
- . *Standard Three General Science Research 1987-1988.* SOLING-21 1990. Pretoria: HSRC, 1990.
- Vergnani, L. "Coming of Age: An Interview with Jakes Gerwel." *Leadership* 10.1 (February 1991): 22-28.
- "Violence and Intimidation." *Fast Facts* 5. SAIRR, June 1991.
- Walters, S. *Education for Democratic Participation: An Analysis of Self Education Strategies within Certain Community Organizations in Cape Town in the 1980s.* University of the Western Cape: CACE, 1989.
- Witz, L. "Misplaced Ideals? The Care of UNIBO." *Reality* (Mar. 1986): 10-12.
- World Bank. *Development Report.* Washington: World Bank, 1990.

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