

STUDENT RETENTION PROBLEMS IN HIGHER EDUCATION IN A DEVELOPING COUNTRY

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Abstract

The discourse deals with problems (more prevalent in developing countries) that impede the ability of higher education institutions to retain students. The aim is to provide data on retention figures in South Africa and to reason factors, such as financial resources, academically under-prepared students, cultural diversity matters, student perspectives and the effect of the HIV/Aids epidemic that contribute to hampering student retention. Results obtained from a 2003 Technikon Pretoria (former name, now Tshwane University of Technology) study on socio-economic factors related to retention are used to elaborate certain deductions.

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1. Introduction

Analyses of figures in World Competitiveness Reports reveal that, generally, countries with better developed human resources and exploited intellectual capital demonstrate improved wealth creation (in terms of the gross domestic product). It may thus be expected that countries that improve their educational productivity will improve their global competitiveness and therefore their wealth creating abilities.

Graduation and retention rates in higher education are accepted internationally as indicators of efficiency and effectiveness of institutional functioning. Because of the costly effects

associated with non-performance of students, retention rate patterns are becoming a matter for increasing concern. As a country's progress is closely linked to the number and quality of its graduates it is of importance for an institution to keep track of retention rates. Effective retention research may provide just the vehicle needed to stay ahead of, and cope with the changing environment - an environment, which in a developing country, poses its own problematic.

2. Theory

2.1 International retention figures

According to Tinto (Noel *et al*, 1985:30) between 40 and 45% of first-time entrants to all forms of higher education in the United States will eventually obtain four-year degrees. Of these, he alleges, an increasingly large share is taking more than four years of continuous enrolment to do so. According to information from 2 377 higher education institutions in the USA, 51.6% of students enrolled in four-year programmes graduated within five year (Higher Education Chronicle, 17-02-2000). It appears as though the so-called standard of college progression – taking four years to earn a four-year degree – is no longer the norm.

A large percentage of students who drop out do so before the start of their second year. Information on 2 513 higher education institutions in the United States showed a dropout rate of 25.9% regarding first year students of 1997. According to Noel *et al* (1985) students drop out of, or leave their studies for a variety of reasons. Dropouts may, *inter alia*, do so because they are academically under-prepared, others have uncertain academic goals, some lack financial resources needed to remain, there are those who have trouble commuting to and from the institution or those who fail to connect with the community of students and faculty.

Internationally, a variety of strategies have been instituted to address and improve retention statistics. These include issues such as reviewing admissions policies, providing career planning and counseling as well as learning assistance programmes, instituting financial aid and orientation programmes, improving academic advising and learning assistance programmes and catering for residence halls and student activities. While these efforts

appear to work to some extent, Lourens (1999:3) reports Tinto as asserting that the ‘... long-term impact on retention has been surprisingly limited...’

2.2 Retention figures in South Africa

In a CHE (Council on Higher Education) report issued in 2000, it is stated that unacceptably large numbers and proportions of first-time entering students in South Africa drop out of the system each year (especially during the first year of study). According to a Lourens study (2000:8) a large percentage (29.48%) of students at selected technikons drop out during the first year of study and an alarming low percentage (21.09) of these students complete their studies within the minimum time period.

In 1990 the average throughput rate for three-year bachelor degrees in South Africa at historically white universities was 21% compared to 12% at historically black universities. In the case of technikons the average throughput rate during this year for three-year diploma students was 15% at historically white technikons and 9% at historically black technikons (Stumph, as reported by Lourens, 1999:4). According to another Lourens study (2000:6) the total average dropout rate (1994 – 1999) for eight South African Technikons was 29.4%. It showed an upward trend from 1994 (28.18%) to 1999 (32.51%).

According to retention and attrition literature dropout the majority of students tend to leave the institution during the first year of study. Furthermore, it also appears as though students, currently, also need more time than the assigned period in which to finish their studies. The issue is, of course, to find the reasons behind the prevailing phenomenon and to try and rectify the matter.

The Tshwane University of Technology

As part of an endeavour to change the South African educational landscape to a more productive one, Government had decided that the three technikons (of which Technikon Pretoria was one) in the northern Gauteng area should merge. Thus the new merged

institution, Tshwane University of Technology (TUT), officially 'opened its doors' on 1 January 2004.

TUT is one of the biggest residential institutions in South Africa and offers an outcomes-based type of education. It currently has some 49 000 full time students enrolled in a wide variety of academic disciplines across various campuses as well as a further 13 000 distance education students. The University awards bachelors, masters and doctoral degrees but in most courses exit points, with diplomas and certificates, are possible to accommodate students who have mastered relevant chunks, but are, for the moment, unable to complete the total qualification.

Strategic factors that distinguish TUT are:

- Technologically sophisticated, career-focused academic programmes, interacting with industry where possible
- Responsive, trans-disciplinary, applied research and development
- Promotion of innovative thinking, entrepreneurial approach and the establishment and development of enterprises
- Contributing to regional economic development
- Maintenance of quality by means of (inter) national liaison and cooperation, the maintenance of academic standards and sound management practices.

3. Method of research

3.1 The study into socio-economic factors

Aim

One certainty in life is that everything is subject to change. So also the higher education and socio-economic environment within which students find themselves. To be able to address retention issues it is necessary to understand the type of world and environment students live in, how they experience this, and what the problems are, that beset their lives and make it difficult for them to study and progress. The specific aim with this study, conducted by Fowler at the (then) Technikon Pretoria, was to determine socio-economic factors that exert a negative impact on the study performance of first-time entering 2003 students. Electronic copies of the report are available from: fowlerm@tut.ac.za.

This study is part of on-going longitudinal research on retention at the now called Tshwane University of Technology in which the following is intended in the future:

- The progress of year 2003 first-time entering students as well as other data obtained from the Data Management System will be compared with responses obtained from the questionnaire probing socio-economic factors relating to students' lives
- Drop-out students from the initial 2003 cohort, identified in 2004, will followed up to try and determine reasons why they dropped out
- The expanded dataset comprising of operational and non-academic variables will be used to develop statistical models to predict the probability of students being unsuccessful or dropping out
- Successful versus unsuccessful and dropout versus non-dropout students will be profiled.

The questionnaire

In the development of the questionnaire the particular South African context was taken into account.

Financial factors – Questions were posed on hampering financial circumstances, who were responsible for payments, sources of income students had access to, how many students worked part-time, and other related issues.

Living arrangements - Where and how students lived may have an effect on the ability to study. In this section, *inter alia*, living quarters, study circumstances such as lighting, noise level, live-in friends/partners, distance from campus and supervision were probed.

Study methods and habits - An indication of conscientiousness and how students' study might provide insight into why they drop out, or fail to complete studies in time. Hours of study per week, regularity, place of study, class attendance, note taking, and help obtained for language, study, computer and life skills were issues probed in this section.

Perceptions – How students see themselves, their institution, their studies, the degree enrolled for, *inter alia*, may provide a key to motivation. Also, lack of confidence in future study and career success may help identify students at risk. Reasons for high drop out rates and prolonged study time may be attributed to reigning perceptions.

Social and dating pattern – These might interfere with students' ability to study. Misuse of alcohol and drugs on a regular basis and regular late nights because of socializing are bound to affect studying negatively. Probing well-being might also be beneficial to try and determine the impact ill health has on students' studies.

Biographical detail will be extracted from the management information system at a later stage, and this, as well as the answers supplied in this questionnaire, will be assessed against the students' progress that will be traced throughout their study period at TUT.

Target group and sample

A questionnaire probing socio-economic and environmental factors was distributed to all Technikon Pretoria first-time entering B Tech, full-time contact students (5 041) of 2003. The student body from satellite campuses was excluded from the study. Of the questionnaires distributed, 2 064 were returned completed – a response return rate of 38,2%.

3.2 Purpose with the presentation

The purpose with this paper is to discuss problems prevalent in developing countries that impede the ability of higher education institutions to retain students. The idea is to provide data on retention figures in South Africa and to reason factors, such as financial resources, academically under-prepared students, cultural diversity matters, student perspectives and the effect of the HIV/Aids epidemic that contribute to hampering student retention. Results obtained from a 2003 Technikon Pretoria (former name, now Tshwane University of Technology) study on socio-economic factors related to retention are used to elaborate certain deductions.

3.3 Description of terms

- *Baseline Enrolment*: Number of first-time entering National Diploma and B Tech degree students in the initial year of study (cohort of students to be followed in subsequent years). This number will stay constant for every year except in cases where a specific qualification was transferred to another faculty.
- *# (%) Enrolment*: Number (percentage) of students (of baseline enrolment/cohort) enrolled for a National Diploma or B-Tech degree in the year under consideration.
- *# Transfers*: Number of students (of baseline enrolment/cohort) enrolled for a National Diploma or B-Tech degree in year under consideration, that transferred from the qualification registered for in the initial year (first year) to another qualification.
- *# (%) Dropouts*: Number (percentage) of students (of baseline enrolment/cohort) who neither reregistered, nor officially cancelled their studies and did not graduate.

- # *Cancellations*: Number of students (of baseline cohort) who officially cancelled their National Diploma or B-Tech degree studies in the year under consideration.
- # (%) *Graduates*: Cumulative number (%) National Diploma and B-Tech graduates (of baseline cohort) who qualified within, or before, the specified year.

4. Results

4.1 Financial factors pertaining to studies

South Africa's economic situation

Quality education is of crucial importance to develop people to be able to create wealth in an international market. South Africa is currently not performing well in global competitiveness ratings, is not meeting the projected targets for economic growth and also the estimated unemployment rate of 33,9% (SA Survey, 1999/2000) of economically active persons is alarmingly high. In the Technikon Pretoria study (Fowler, 2003: 17) almost one third of the economically active fathers (29,6% or N = 1 328) of students were reported unemployed. This ties in with the figures for unemployment mentioned earlier. Coupled with this the strength of the Rand against foreign currencies is under constant pressure. Economic indicators of a few years ago reveal that saving is insufficient to finance the necessary investment to keep economic growth and job creation consonant with population growth. Although the average consumer price inflation is kept low, it is nevertheless clear that the South African economic situation is not an altogether healthy one. This is important to know as it means that one cannot realistically expect (huge) increased in funding from government for the improvement of education. The high unemployment rate of economically active persons is also an indicator that obtaining fees for further studies from students/parents may also be problematic and result in students dropping out – a bit of a checkmate situation.

Emigration from South Africa, the so-called 'brain drain', is also a cause for concern (1998 was the fifth consecutive year of net loss of persons (mostly highly skilled) – and these project only the official figures of émigrés) (HSRC, 1999) as the result is a loss of high level

brain power needed for wealth creation and also of educators who are sorely needed to keep the educational system optimal.

Higher education financing

In South Africa, much of higher education is subsidized by the State. In an effort to boost education, funding by government to universities was increased from R3.1bn 1995/6 to R3.8bn in 1997/8, and to Technikons from R0.991bn to R1.4bn over the same period (SA Survey, 1999/2000:126). Although this sounds commendable, in actual fact the State contribution (because of increases in student numbers and other expenses) has dropped from an 80% subsidization per student a few years ago to a current subsidization of less than 50% per student.

In a developing country like South Africa, although the government subsidizes higher education, students have to pay class fees. Students are also liable for books and stationary. To keep up with rising costs, class fees are progressively and continually rising. State subsidy currently amounts to about 48% per student, class fees make up between 25% -30% and the rest of the money (20% -25%) is obtained from other incomes and institutional endeavours.

Financial assistance to students

Over the last number of years much effort had gone into instituting bursary loan systems at institutions of higher education. The number of students who received loans from the Tertiary Education Fund of South Africa (Tefsa) increased by 777% over a nine-year period (from 1991), while the total amount allocated to assist needy students increased by 1 496%. Since 1994 the state has contributed R861m to Tefsa. Other donors provided an amount of R363m to this purpose (SA Survey, 1999/2000:126).

Results from the Technikon Pretoria report (Fowler, 2003:12) indicated that, at this institution, instead of bursaries, the majority of families (67.1%) is responsible for student fees. Also, parents, generally, are responsible for payment of the bigger amounts of money. The majority of students appear to have adequate money for their studies, yet indicated that they are

usually cash strapped and have to manage finances carefully. There are consequences to this such as, for example, that students often remain on campus all day long in order to avoid paying unnecessary bus fares.

Interestingly enough, no financial contributions from trade, commerce and industry or by employers were reported, although this might be attributed to the fact that quite a number of students commented that their financial affairs were private and declined to provide information.

In view of the difficult economic climate in SA as well as the high unemployment rate, it has become almost impossible for many parents to afford class fees and other accompanying expenses. This may lead to non payment, as reported in the *Cape Argus* (as reported by Nel and Van Vuuren, 2000) that students, in 1998, owed public sector universities, technikons and colleges between R300 and 500 million in outstanding fees.

4.2 Academically under-prepared students

According to literature, one of the main reasons for student dropout is the fact that students are often not academically prepared for tertiary study. In South Africa this is particularly true. It should be remembered that, because of many additional classes and other interventions academically under-prepared students are bound to take longer to achieve their qualification – if they don't drop out, that is.

Academically under-preparedness may, of course, be the result of a number of factors, a few of which will be discussed hereafter.

Teacher profile

In an attempt to ensure a unified system of education the post apartheid government instituted a National Qualifications Framework and an outcomes-based system of education. This was an attempt to widen access, promote mobility, portability and career progression. The purpose of the outcomes-based system was to ensure relevance, legitimacy and credibility (on both a national and international level); one that allowed for recognition and

accreditation of existing skills and life long learning. Although most teachers were receptive to the new system, successful implementation has, so far, been hampered by, *inter alia*, inadequate training of teachers in the application thereof, lack of materials, and because of poor communication at management level. (SA Survey, 1999/2000).

Quality education can, amongst other factors, be traced back to the competence of educators. In South Africa teachers from the primary and secondary sector respectively make up 30.9% and 12.0% of those with less than a three year qualification, 39.5% and 37.0% of those with the equivalent of a three year qualification and 29.7% and 51% of teachers with more than a three year qualification. In addition to this the pupil/teacher ratio increased from 1997 when it was 34.9 per teacher in the primary and 30.4 in the secondary school sector, to 1999 when the ratios were 38.1 and 37.8 respectively (SA Survey 1999/2000:133). Given the lack of training and experience of many of the teachers, one can expect a negative effect on the adequate preparation of pupils, and thus school leavers present for academic study without the necessary back-up expertise.

School leavers

A higher education system is dependent on the quality of students delivered for further training. The problem is that, generally, the number of student and exemption passes in South Africa is dropping. Total passes and exemption rates were (Dept of Education, 1999:9-10) in 1994, 63.0%, 19.2%; in 1998, 53.5%, 13.2%; and in 1999, 52.3%, 13.0% respectively. According to Nel and Van Vuuren (2000:2) a drop in matriculation exemptions occurred nationwide. The proportion of school leavers obtaining matriculation exemption has fallen from 38% in 1979 to 12,5% in 1999. This phenomenon has resulted in a drop in student numbers requiring entry to post school education as well as students adequately prepared for further study.

Services to assist students

Most institutions, in an attempt to assist students who are not adequately prepared for academic study, provide a number of services, such as career counselling, study guidance, literacy, life skills, that students may make use of. From analyses of the study (Fowler,

2003:27-39), it became clear that, especially two functions played an important role in the lives of Technikon Pretoria students, namely the library, and computer centres.

The *library* was rated an indispensable resource. Complaints surrounding library use centred round the fact that the library should be enlarged and furnished to accommodate more people – in a manner, a compliment. It might also be that students, because of transport problems, stay all day on campus. The library becomes the haven where they study, sit, be protected from weather elements, watch videos and relax.

Technological sophistication is one of the characteristics of an institution of technology. It appears as though students have realized the advantages inherent in the use of *computers*. More than half of the Technikon Pretoria respondents indicated that they had made use of on- campus training in computer literacy. Dissatisfaction basically concerned the fact of too few computers and too little access to them.

Life skills courses were relatively well attended (45.5%) at Technikon Pretoria but, perhaps because these were mostly prescribed by lecturers. (Other studies conducted at the Technikon Pretoria by Lizette Viljoen and Helena Kriel show that students benefit greatly by attending these courses). Less than a quarter of the respondents made use of other study related services. Interestingly enough only 21.1% of the respondents take part in formal *recreational* campus activities (including sport, cultural and clubs).

Study methods and habits

There is no doubt that good, consistent and conscientious study methods and habits promote study success, and the chances of students to finish their studies. The Fowler study (2003:39-47) revealed the subsequent findings.

Of the respondents 65.7% indicated that they were able to study in their first choice of study direction. This means that almost a third of the students are studying in a direction that does not necessarily captivate them – this may be a possible reason for dropping out.

Students also indicated that they tend to *attend all their classes* – perhaps because they, at the beginning of the year when the questionnaires were completed, were still eager to make the best of their studies, and had not succumbed to bad habits yet. Almost half of the respondents (47.2%) indicated that they spend fewer than 10 hours a week studying. This included the 21.1% that acknowledged that they studied fewer than five hours a week. This, should be seen in the context of the fact that studies may not have become demanding yet at the beginning of the first year of study. 71.6% of the respondents averred that they *socialize a lot*.

Students were, generally speaking quite complimentary about the quality of teaching. The majority of respondents appear to use acceptable study methods and note taking, although 22.4% seem to rely mostly on memorization as the main method of studying.

4.3 Student diversity

South Africa, at the southernmost tip of Africa, comprises a population of about 43.1 million that is spread out over nine provinces. Of the population 77% are black, 10.9% white, 8.9% coloured and 2.6% Asian. (SA Survey, 1999/2000). Black people comprise of various tribes amongst which, for instance, the Zulus, Xhosas, Tswanas, Pedi and Sotho's, Tsongas.

Cultural issues

In South Africa, by law, staff and student contingents (also at institutions of higher education) have to be representative of race and gender.

Since the abolishment of apartheid various cultures have had to learn to live, study, play and pray together. As seen from the above South Africa consists of a rich diversity and it is necessary to accommodate all. Not always an easy task. Technikon Pretoria, however, is held as a model according to which successful student/cultural integration can take place.

With the existing student-body representing the racial composition of the population, it was heartening to note that almost no complaints regarding racial issues were voiced.

Theory has it that students who don't fit in well at their institutions may not be motivated to continue with their studies. In this regard 90.4% of the respondents (Fowler, 2003:50) indicated that fitted in well at the Technikon, and a further 79.6% that they felt optimistic about the future.

Racial redress amongst members of staff at institutions of higher education has been a more complicated matter. Institutions of higher education have to vie with industry, that is able to pay employees far bigger salaries, for educated persons from African cultures. The problem is to find suitably qualified black persons who are willing to work for less and not be lured away by more lucrative salaries offered in the private sector. One should be careful not to lower standards by appointing persons of colour who are under qualified.

The communication factor

Many languages are spoken in South Africa and of these nine African languages, as well as Afrikaans and English, are recognized as official languages of the country. Afrikaans is the home language of 81% of the coloured and 58% of the white people. Of the Indians, 93% speak English as a first language, and of the blacks the single largest proportion (29%) speak isiZulu. English is increasingly accepted as the business language of the country and is spoken by the majority of people - although as a second language.

Communication is the cornerstone of learning – without it learning cannot take place. The problem is that many students in South Africa have to study by means of a language with is the second, and sometimes third language. Often students have not mastered English well enough for comprehension purposes. At Technikon Pretoria courses have been instituted to improve both language and reading skills. A third of the students (33.3%) (Fowler 2003:36) indicated that they had made use of these services. The language problem, however, is exacerbated by the fact also lecturers often teach in a language which is their second, or even third. In this manner the message leaves the transmitter in an incomplete manner and is received by a student who is unable to decode it properly – not a recipe for successful

communication and adequate academic progress, and probably one of the causes (*albeit* indirect) of students dropping out.

4.4 Perceptions

Perceptions regarding the institution, studies, world of work, and manner in which students regard themselves, their institution and future career prospects may provide an important key to motivation, and through this, possible reasons for the drop out rate.

Although 76.9% of the respondents professed that Technikon Pretoria was the first choice of institution to study at and 72% (N=1 408) indicated that they regard the Technikon Pretoria as one of the best in South Africa, it nevertheless emerged that 55.5% of them regarded technikon qualifications as inferior to university qualifications.

Students also indicated that they, generally, regard teaching practices and care giving by the Technikon favourably. The last category had to do with respondents' faith in their futures. More than 90% of them indicated that the institution prepared them well for the future, that they would be able to find work in South Africa, and not only that they would pass, but that they would finish their studies in the minimum time. Despite possible hampering factors, respondents, 97% of them, voiced great optimism about the possibility of continuing their studies in 2004. One wonders what happens in their lives during the year to have 25%+ of them drop out after all by the end of the first year of study.

(Fowler, 2003:41-49).

4.5 The effect of the HIV/Aids epidemic

As HIV/Aids is, by law, an undisclosed illness in South Africa, it is therefore difficult to find accurate figures on the prevalence of the disease.

In 2001 it was said that, world wide, there were 60 million people infected with HIV. In sub-Saharan Africa the infection rate was said to be 28.1 million and in South Africa in 2001 the impact was estimated at 4.7 million, and 5.3 million in 2002 (Dept of Health 2002).

It is known that the age group of students studying full-time at institutions of higher education is between 19 and 29 years of age, also one of groups amongst which highest prevalence of HIV/Aids can be found. According to the Abt study conducted in 2000, the HIV/Aids infection rate of students at universities was just over 20% and at technikons just under 25%, and the projected increase for 2005 was pegged at just over 30% and 35% respectively. This means that one in three or four students at institutions of higher education are already infected.

In the Technikon Pretoria study (Fowler, 2003:49-50), 24% of the respondents averred, that they often felt unwell and 40,5% that they often suffered from colds and flu.

5. CONCLUSIONS AND RECOMMENDATIONS

Survival (Eberlein, 1977) depends on human resource development - training and retraining of human resources to constantly meet new demands. For training to meet these demands education's fundamental responsibility is to see to the design, development and evaluation of learning systems that will maximize student performance at a minimum cost in time, effort and money (*without forfeiting quality*). How well education meets these challenges becomes the yardstick of progress.

5.1 Financial aspects

It is clear that the South African economy is in a difficult stage. Although one could argue a bigger cut from the total budget for educational purposes, it is also a fact that there is only so much money available. Together with government higher education should take some initiatives to alleviate problems. The following may be considered:

- *Investigate the viability of other types of funding mechanisms*
- *Improve institutional management and student debt resolution*
- *Establish and phase in more loan schemes at reasonable interest rates*
- *Institutions should become more innovative and entrepreneurial*
- *Cooperate with other stake-holders and partners*
- *Investigate the use of alternative and multi-media teaching methods*

Because of economic constraints with respect to the funding of public education, it is suggested that the *public and private sectors work together* to alleviate the situation. Cooperation rather than competition is, after all said and done, in the country's interest.

Experience has shown progressive cuts in subsidy to higher education institutions, and, given the state of the South African economy, this trend is likely to persist. It is likely that, as is the case with school education, contributions from the learners' side will increase substantially – and become harder for the layman to afford. Contact education is a labour intensive, high cost activity. It is a fallacy to think that it will become cheaper. What educational institutions can do, however, is to *package* it in a manner that makes it *more affordable for students* – difficult in a situation of contact teaching, and especially in instances where students are under-prepared. *Thus, alternative teaching methods, processes, and life-long learning should be investigated.*

5.2 Academically under-prepared students

In South Africa (and especially the former technikon sector where a university entry pass was not a requirement for enrolment) much has been done to assist under-prepared students who present for further studies. Many new services (such as reading comprehension, language skills, extra classes, study methods) with accompanying staff contingents had to be established at almost all institutions – sometimes at a big financial outlay. Much can be done, although it should be a national, and a concerted and purposeful effort to improve matters. *Government can assist by providing additional funds to institutions that bear the brunt for academic guidance purposes.*

In addition to services to students other ventures such as Bridging and Foundation courses should be instituted, as should Summer/Winter/Fall 'schools' and or opportunities for extra classes and the attendance thereof.

School system responsibility

It is imperative that attention should be given to the *teaching of scholars to be academically prepared on leaving school*. The production of adequate numbers of academically competent

school leavers for post school training to, ultimately, supply in the needs of commerce, trade and industry, should start at grass roots level. This means that a government should apply and devote its attention to financing and enabling the best primary education to feed into secondary education. Here, the *best standards should apply* and be maintained in order to supply school leavers that are prepared for further academic study. This in turn would result in a flow of empowered and competent person power to commerce, trade and industry and thus enable an improved global competitiveness rating and wealth creation for the country. For this to happen the school sector, both primary and secondary should have competent teachers. *It is therefore recommended that an intensive in-service teacher upgrading and improvement of skills take place.*

The high student-per-teacher ratio in South Africa is counter-productive. It is impossible for a teacher to give personal attention to thirty-eight children in a class – this is more so in the case of outcomes-based education. This intolerable situation should be rectified. *More teachers should be employed and/or competent teachers who were rationalized in the 1995 purge of educationists reemployed.* The state should provide the funds for this.

Services to students

A great amount of time, effort and money goes into providing services to entering students to upgrade their existing skills and prepare them for tertiary study. *The government would do well to subsidize institutions that perform well in this area.*

The South African Ministry of Education has, in the *National Plan for Higher Education* already provided the vision that the study fields of science, engineering and technology should receive more emphasis (although not at the expense of other study directions). This is good although quite wide. It is suggested that, in addition, the Department of Education commission *research to be done to determine labour market needs more specifically* – this would enable both more responsible career counselling and enrolment management.

Study methods and habits

Teaching is the main function of an institution of higher education. The aim is that this should be done with the student's optimum progress in mind. Lecturers should be well versed in, *inter alia*, how students learn, appropriateness of teaching methods and how and when to apply them, assessing, This implies an elaborate *system of in-service training* to ensure that lecturing skills are always kept up to date.

A culture of learning should be established at institutions of higher education. Facilities such as study halls or residences should be erected on campuses to accommodate students who remain on campus all day long.

Additional help and guidance in study methods other related aspects should be available, accessible, and students should be informed of them.

5.3 Perceptions

A number of years ago the trend was that a majority of students would wait for their matric results before applying for further study. Whether they applied for university or technikon enrolment depended on their matric results. Those with university exemption applied to go to university and those without applied at the technikon. This trend seems to have stopped now as more than three quarters (76.9%) of the respondents (Fowler, 2003:42) indicated that Technikon Pretoria was, in fact, their first choice of study.

The fact that students indicated that they still regarded university qualifications as superior to those of a technikon is bound to change now that the name 'Technikon' in South Africa has been replaced by other terms, such as in this instance 'University of Technology'.

5.4 The effect of the HIV/Aids epidemic

As HIV/Aids is an infection that, by law, does not need to be disclosed in South Africa, it is difficult to conduct research around the matter. However, consequences, such as parental mortality, inability to work, unwellness and other factors may be indications of the extent to which students – and therefore retention rates - may be affected by this pandemic

Students who are not well cannot progress adequately, and this may also contribute to, and account for the high dropout rate at institutions in South Africa. Apart from this it should be remembered that HIV/Aids not only infects people, but also affects society. This means that even healthy students often have to terminate their studies because they have to take care, either of ailing and dying parents, or of orphaned siblings.

HIV/Aids clinics are a familiar feature on most of the campuses of institutions of higher education in South Africa. Much attention is given to preventative training and condoms are distributed free of charge. Systems of peer education and professional counseling are in place and students are encouraged to have themselves tested, in instances of uncertainty, to determine their status. The problem is that, because anti-retroviral medication is not freely available, students decline to be tested. There is also a great stigma attached to people who are infected – to the extent that they (and their often innocent and helpless kin) are rejected by society.

Apart from the availability of medications and counseling a system of social workers to assist students who are caring for ailing parents or orphaned siblings should be put in place.

5.5 Further research

Post school study in a developing country is not a benefit that can be taken for granted. Many factors, such as financial constraints, and also disadvantaged prior schooling make it difficult for many, potentially bright school leavers to obtain access and to complete their studies.

Although many additional services have been established at institutions of higher learning to assist the entrant to overcome hampering factors it should be borne in mind that it still requires effort, determination and time to overcome obstacles. Ensuring an efficient and effective schooling system to deliver academically capable students would go a long way to rectify the matter.

On writing this it becomes clear that for students to finish their studies in the minimum time in a developing country can no longer be regarded as the norm.

Because the environment within which students live is also subject to change, a socio-economic environmental study was conducted at the Technikon Pretoria and referred to in the context of this paper. Responses obtained from these questionnaires will be correlated with other data of students that is on the Management Information System.

Investigation into retention of students is part of on-going research that is being conducted at the Tshwane University of Technology. It is regarded as only the tip of the iceberg. The more institutions of higher learning become involved with this topic the sooner solutions to problems may be found. Therefore, any institution that would like to take part in discussions and research on the matter of student retention is hereby invited to make contact.

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