

BARRIERS TO ACCESS TO AND SUCCESS IN HIGHER EDUCATION: INTERVENTION GUIDELINES

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ABSTRACT

Low throughput rates at schools and universities across South Africa are cause for great concern because of the resultant financial burden on the state; the increase in unemployment; and the inadequate delivery of much-needed highly skilled professionals. The advent of the fourth economic wave – accompanied as it is by fundamental changes in the workplace globally – has called for a judicious response from theorists, practitioners, researchers and learners. This article surveys the extent and possible causes of the low throughput rates in higher education and draws on the results of recent research projects to design intervention guidelines aimed at facilitating access to and success in higher education. An integrated, quantitative and qualitative approach is recommended.

Keywords: access, success in higher education, throughput, career construction counselling, life designing, economic waves, qualitative assessment, quantitative assessment, integrated approach



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OVERVIEW OF THE EXTENT OF LOW THROUGHPUT RATES IN BASIC AND HIGHER EDUCATION

Nineteen years after the demise of apartheid, the future of basic and higher education in South Africa looks bleak. Debates on low pass rates at school and throughput rates at universities continue unabated with little concrete action being taken. Poor achievement at whatever level impacts negatively not only on the potential of individual learners to find suitable employment and design successful lives, but also on the collective future of the country. No country can afford the low throughput rates to which South Africa has become accustomed – least of all a country like South Africa with its disturbingly high Gini coefficient (indicating that it is one of the most unequal societies in the world). According to Wijnberg (2013), the growing shortage of appropriately skilled graduates, coupled with high emigration figures, is deeply worrying. Jobs for skilled professionals are increasing steadily as, unfortunately, are unemployment rates (2013). Whereas unemployment decreased marginally at the end of 2012, this decrease reflected an increase in the number of youths who were no longer looking for work rather than an increase in employment (Wijnberg 2013). During the second quarter of 2013, the number of people out of work in South Africa rose to more than seven million for the first time. Jobs are being created, but the number of people looking for work is rising faster (Berkowitz 2013). Between April and June 2013, the official unemployment rate rose to 25.6 per cent while the broader measure of unemployment rose to 36.8 per cent (Stats SA 2013).

In summary: Inequality, unemployment and poverty appear to be even more widespread in South Africa today than before 1994, and the number of discouraged work seekers is also steadily rising. The following linear progression is thus created: poor school achievement → inability to enrol for sought-after fields of study that will ‘guarantee’ employment → inability to find employment → increase in rates of unemployment → lower economic growth → increase in likelihood of sociopolitical instability. It does not take degrees in either economics or political science to deduce that South Africa’s future is coming under increasing threat.

Ndebele (2013, 15) highlights some features of the inadequate achievement in higher education in South Africa:

1. Only roughly 25 per cent of students at residential universities graduate within the minimum time allowed.
2. Only 35 per cent of the total number of students enrolling in any given year obtains their degrees within five years. Approximately 55 per cent of these students will never graduate.
3. Clearly distinguishable race-based fault lines characterise the situation: roughly 50 per cent more white than black students graduate every year. Less than 5 per cent of African and coloured students succeed ‘in any form of higher education’.

Trends have remained the same over the past 13 years. Universities across South Africa have frequently expressed their concern about the poor academic quality of students produced by the schooling system. Against this background, it is necessary to examine some of the most serious challenges facing basic education.

CHALLENGES FACING BASIC EDUCATION

There are numerous barriers to learning at the different levels of education, especially basic education. The challenge is most severe in South Africa's poorest and most vulnerable (predominantly, but not only, black) populations (Bloch 2009; Maree 2010; 2011; 2012). Apart from the legacy of apartheid, it is generally agreed that the following factors constitute major barriers to learning in basic education (Bloch 2009; Christie, Butler and Potterton 2007; DoE 2005; Fleisch 2008; Kraak 2004; Motala and Pampallis 2005; OECD 2008; SAIRR 2009):

1. Ever-increasing, widespread poverty levels in South African society in general but mainly among the black population.
2. Inadequate training of teachers (either unqualified or underqualified) in terms of subject knowledge and knowledge of how to teach.
3. Poor management of (and poor infrastructure in) many schools.
4. Limited availability of teaching and learning materials.
5. Insufficient provision of career counselling.
6. Insufficient time spent at schools (by teachers and learners).
7. Inadequate communication between the various levels of education and education management.

In the next section, I focus on the design of intervention guidelines aimed at facilitating access to and success in higher education as essential prerequisite elements of career adaptability and employability. These guidelines are informed by a combination of 'old' and time-honoured teaching and learning approaches and new approaches shaped by 21st century teaching and learning environments including information communication technology-related developments and learners' idiosyncratic circumstances.

PROMOTING ACCESS TO AND SUCCESS IN HIGHER EDUCATION

In line with the global approach to managing major changes in the workplace caused by the changes in the economy (as a result of the fourth economic wave), I argue for stakeholders (theorists, practitioners and researchers) to strive to equip learners with the skills needed to adapt to these changes. In the following section, a theoretical

framework is proposed for informing, guiding and advancing positive learning facilitation – the ultimate aim of theory and practice in the field.

I maintain that a holistic, multi-dimensional ‘meta-approach’ to the challenge of enabling learners to access and succeed in higher education will yield the best results. The following points may be considered in such an approach (Maree 2010):

1. The importance of social interaction in learning contexts, that is, working together in groups, participating in co-operative learning (possibly leading to greater self-confidence), and willingness to investigate all relevant issues.
2. Learning by oneself can also be meaningful and valuable – no one can master work on behalf of someone else. However, learners do not learn completely on their own.
3. Learning content should be contextualised. Learners should continually ask the following questions: Why am I studying this section of the work? Where does it fit into the bigger picture? Why do I have to study this subject? Will it be useful to me after school? Will it help me to gain access to my field of study? Will it help me find employment?
4. Teaching is far more than mere coaching. Learners themselves decide what they are interested in, when they want to learn or practise something and when they want information. Learners’ cooperation should therefore be obtained at all stages.
5. No one method of learning is necessarily ‘better’ or ‘worse’ than another. An eclectic approach, where the ‘best’ elements of different approaches are used, is likely to yield the best results.
6. Discovery or the creation of meaning need not occur in a logical-deductive manner only. Classroom discussions (especially in group contexts), own activity and independent work can promote the mastery of new knowledge.
7. Parents’ and teachers’ expectations and encouragement are significant predictors of achievement in mathematics and physical science and, consequently, teachers’ and parents’ low expectations of learners can often act as self-fulfilling prophecies (Maree 2005). Parents’ and teachers’ support, example, motivation and passion are central to teaching and learning success and will impact all teaching and learning contexts.

RESEARCH QUESTIONS

The main research questions guiding this article were:

1. What are some of the influential factors in the facilitation of access to and success in higher education?

2. What intervention measures can help deprived learners in particular navigate the often uneven transition from the teaching and learning situation at school to the situation at tertiary institutions?

Next, I draw on the results of recent research in an attempt to answer these questions.

EXAMINING THE OUTCOMES OF RESEARCH ON PREDICTORS OF SUCCESS IN HIGHER EDUCATION

Various predictors are being investigated globally to determine those that will help to improve throughput rates rather than focusing on a single predictor of success. Many researchers argue that a combination of high school achievement and admission test scores can predict success at university more accurately than possible predictors of university success considered in isolation (Maree, Pretorius and Eiselen 2003; Ramist, Lewis and McCamley-Jenkins 1994).

Grade 12 examination marks are typically included in admission strategies, yet some researchers (Maree and Eiselen 2007; Mitchell and Frijdohn 1987) argue that, in the case of disadvantaged students in particular, there is insufficient evidence to suggest that the inclusion of Grade 12 marks guarantees more accurate and fair admissions procedures at universities or that such inclusion necessarily means that the selected learners actually possess the skills needed for success in higher education. Other researchers argue there is sufficient evidence to support the inclusion of these marks.

I now consider the critical role that contemporary career construction can play in any discussion on ways to enhance access to and success in higher education.

THE EMPOWERING ROLE OF CAREER COUNSELLING

Only a small percentage of learners across the country ever receive career counselling, and it remains the almost exclusive preserve of learners from affluent homes. Based on research conducted over the past 15 years (aspects of which will be discussed below), I contend that this situation can be turned around if the education authorities can succeed in administering present-day, integrated quantitative + qualitative career counselling (Maree 2015) to every learner. This proposed career counselling will:

1. enable counsellors to elicit individual learner's life stories (including identification of their idiosyncratic strong and weak points);
2. facilitate progress by learners;
3. promote self-advising and action by learners.

The theoretical underpinnings of this approach are discussed in the next section.

Drawing on career construction counselling to inform and advance intervention

I contend that the many challenges facing students today can best be met using a multi-pronged approach. A career construction counselling approach (as explained below) will provide counsellors with an ideal mechanism and strategy to help learners: (a) choose appropriate fields of study and achieve success in their studies; (b) construct themselves adequately; (c) construct their sense of self (self-concept); and (d) design successful lives and make meaningful social contributions. This approach provides a conceptual framework for explaining inadequate access to and success in higher education and for guiding the planning of intervention strategies that will be in the best interests of all learners irrespective of colour, creed, financial situation or geographic location (Maree 2013). Emphasis is placed on identifying clients' deep-seated strengths and motives and on using innovative techniques to enable them to: (a) reflect on their careers and life stories; and (b) reflect on these reflections to initiate appropriate action. The approach assumes that self-construction, self-realisation and self-development will occur when people make a purposeful attempt to let them occur (Savickas 2011a and 2011b; 2012). It is based on the belief that mere desire or motivation, without action, to do something (study, work hard, achieve, succeed, obtain a degree) means little, as does merely 'taking' a decision, without follow-up action: to work harder; to study harder; to improve throughput rates at university; to help more students gain access to sought-after fields of study; or to 'do better' (Krieshok, Black and McKay 2009; Maree 2013; Savickas 2011c; Watkins 1984). It thus stresses the fundamental importance of merging clients' intentions with their actions (Polkinghorne 1990; 1992).

The value of movement (action) as the ultimate aim of career construction counselling is widely acknowledged. Cochran (1997), Rogers (1942), Young, Valach and Collin (1996) and Young and Valach (2004) emphasise making plans, setting goals and predicting consequences, which can help clients to make sense of themselves and the social world they live in.

The main aim of career construction counselling in the 21st century is to help people become more adaptive (Hartung 2011; Savickas 2011a; 2011c; Subich 2011). The concept of career adaptability is discussed in the next section.

Career adaptability

The adaptability section of career construction theory covers career development tasks, role transitions and strategies for working through such tasks and negotiating such transitions (Savickas 2006). Career adaptability refers to people's readiness to manage transitions and changes in their study and work-related roles and construct themselves accordingly. It is a psychosocial process that includes the setting and pursuing of goals aimed at dealing with work role changes (such as accessing and

succeeding in higher education) and helping people to establish balance in their work and in their lives generally (Savickas 2008).

Career construction counselling helps people to make appropriate choices by increasing their career adaptability in terms of the following:

1. *concern* for their work role, career and future life;
2. *control* of their chosen field of study and career;
3. *curiosity* regarding their opportunities and options;
4. *confidence* in making appropriate study- and career-related choices (Savickas 2010).

The value of a combined approach to career counselling in helping learners acquire construct careers and design successful lives is discussed next.

Value of an integrated quantitative + qualitative approach to career counselling

The changes in the world of work described earlier led to a paradigm shift in research theory and practice culminating in global acceptance of the value of an integrated qualitative + quantitative approach to career counselling (Maree 2015). The value of qualitative approaches to career counselling has been increasingly recognised with the design, development and implementation of narrative-based theories and assessment instruments and strategies receiving particular attention. Career construction counselling holds that incorporation of the objective and subjective meanings people attach to their career and life stories is central to successful career choices and life designing. Career counsellors who follow this approach are as interested in interpreting the subjective aspects of career counselling (i.e. eliciting clients' career and life stories) as they are in interpreting clients' 'objective' test results. This approach stresses the vital merger between learners' intention and action (Polkinghorne 1992). The value of activity and movement (essential ingredients of academic success) as the ultimate aim of career counselling is generally acknowledged. Young, Valach and Colin (1996) and Young and Valach (2004) describe 'action' and forward movement in terms of three steps: constructing a meaningful perspective on which possibilities are available; devising a life design to enable clients to achieve these possibilities; and, eventually, accomplishing these possibilities through action.

Using this approach, career counsellors can help people find meaning in their lives and accept authorship of their careers, their life stories and their actions thereby becoming more adaptable, employable, lifelong learners. This approach also demonstrates how contemporary theories and goals in career counselling can be merged to provide a viable framework for interpreting, explaining and directing career-related behaviour and, ultimately, assisting people to choose and construct meaningful careers, design successful lives and make social contributions through

work (Savickas 2011c). (For a case study illustrating how this can be achieved, see Maree 2013.)

In this section, I draw on lessons learnt from recent projects on how to construct intervention guidelines for counsellors. Such guidelines can help to improve the situation in the following four broadly distinguishable yet closely intertwined levels of education.

1. national education;
2. higher education;
3. basic education;
4. initial education.

Interventions that can be regarded as the sole responsibility of national education are discussed below.

INTERVENTIONS AT NATIONAL EDUCATION LEVEL

Combating poverty

My own research over time has shown that poverty continues to impact negatively on students' access to and success in tertiary education. Despite improvements in this regard, current student financial aid schemes still do not cater adequately for the needs of most students. According to Firfirey and Cornelissen (2010, 1001): 'Social justice is more likely to be achieved when macro-level interventions (such as policies) are augmented by micro- and meso-level interventions in supporting students who are struggling to survive financially in higher education.'

Ensuring that teachers teach

It is the responsibility of national education to ensure that teachers have the ability to teach particular subjects and teach professionally, that is, that they arrive at school on time and that they remain in their classrooms for the stipulated length of time.

Ensuring the availability of sufficient teachers

It is the responsibility of national education to ensure the availability of sufficient teachers. Since 1994, large numbers of skilled and experienced white teachers in particular have either resigned or been offered and accepted severance packages. In the short-term (while steps are being taken to attract more students to the teaching profession), a way has to be found to lure these teachers back to the teaching profession. Teachers could also be given the choice as to when they wish to retire

instead of being compelled to do so at the age of 65 or even 60. In this desperate situation, the age of teachers is irrelevant. All that matters is whether teachers are available and willing to serve the profession.

Making community service compulsory for all teachers and educational psychologists after completing their studies

Teachers and educational psychologists who have just completed their studies should be obliged to do community service, especially by teaching in township and remote rural schools (Maree 2008). These professionals should be given appropriate emotional, psychological and financial encouragement during their community service, and the necessary steps should be taken to ensure their safety.

Expanding the Dinaledi schools initiative

Establishing the Dinaledi schools initiative was an important step forward. However, unless all learners are granted access to these state-of-the-art facilities, resentment will grow among excluded learners and their parents.

Three recent research projects provide guidelines for intervention at national education level. I first discuss the Limpopo Project, then the Youth Foundation Project and, finally, the Junior Tukkies Project. I previously reported on the first project as a stand-alone project, and here, I will attempt to identify patterns that can be used to facilitate access to and predict (as far as it is possible to predict human behaviour) success in higher education.

INTERVENTION AT TERTIARY EDUCATION LEVEL

The Limpopo Project (2003–)

As stated previously, disadvantaged students from (but not limited to) rural and township regions in particular struggle to adapt to university for reasons such as: a poor understanding of English as the medium of instruction; perceptions of lecturers and administrative staff as unhelpful and lacking empathy; perceptions of racism; financial concerns; and an inability to come to terms with a 'foreign' environment. In an earlier project conducted at the University of Pretoria (UP) (Maree 2011), 100 learners were recruited from seriously disadvantaged regions to enrol for degrees in education with a view to becoming teachers. These students were eager to learn and excited about the prospect of becoming teachers, yet all of them matriculated at schools functioning under severe disadvantages. In some cases, between 70 and 130 learners were crammed into a single, often ramshackle classroom. To facilitate smooth transitioning from school to university, and to ensure that these first-time

students' dreams of becoming teachers were realised, the Faculty of Education adopted an innovative approach to teaching and learning. This project and its results may provide some pointers as to what can be done to improve achievement at university level:

1. At least 40 per cent of the students' time was spent working under the mentorship of the top teachers in the sciences, mathematics and the humanities in the Faculty of Education's partnership schools to ensure that the students mastered the subject matter and also became competent in teaching and assessment.
2. All the students were enrolled in a comprehensive programme of development support to complement their academic work. Because many of the students had lost their parents and had little other home-based support, the Faculty of Education offered them career counselling (the lack of which emerged as arguably the biggest single challenge); emotional and religious counselling; academic tutoring; life skills training; and physical development support. Experts from the private sector assisted the Faculty of Education in the development programme (e.g., the students attended workshops run by a leading banking group on how to manage their finances).
3. A personal mentor was assigned to each student to give general support, guidance and encouragement at least once a week. Mentors included the vice-chancellor, deans of faculties and other senior staff members at UP. The Faculty of Education's Department of Educational Psychology participated in the mentoring process by monitoring and providing regular feedback on each student, thereby ensuring the provision of the best possible levels of sustained support.
4. UP invested extensive financial and other resources in this project including hosting the 100 prospective students at UP's annual Open Day. Furthermore, thanks to the good offices of the then dean, Professor Jonathan Jansen, the Faculty of Education set aside some R300 000 to cover initial entrance test fees; hostel fees; stationery, book and clothing costs; and pocket money. Faculty members (administrative staff and lecturers alike) dedicated considerable time and expertise to the programme by, for instance, serving as mentors. In addition, a dedicated tutor was appointed to meet with the students every second Thursday (with me as the project leader) to afford them the opportunity to verbalise their experiences; state their needs; discuss their studies; and examine their progress, and for the tutor to provide assistance when needed.

The rationale for this support package was that predominantly poor, rural students from disadvantaged educational backgrounds require sustained support when brought into a competitive university environment. The students achieved outstanding results, but only a small minority graduated with degrees in Education. This occurred

because exposure to quantitative + qualitative career counselling (i.e. simultaneous, integrated quantitative and qualitative assessment) alerted the students to the wide variety of fields of study and careers on offer. Most of them migrated to and succeeded in other fields of study. A decade later, I can probably best summarise the lessons learnt during that time in the words of one of the students, currently enrolled in doctoral degree studies, whom I bumped into late one Sunday evening in Hatfield:

What initially seemed like an impossible assignment and a disastrous choice (i.e. to study at the University of Pretoria) turned out to be a life-defining moment for us. We have learnt that there is no substitute for hard work, dedication, and being mentored by persons who genuinely care, not only about us but about the country and humanity at large. But this process needs to start while students are still at school. If we can help you to help others, please allow us to do so (Maree 2012, 16).

Youth Foundation Project (2007–)

In 2007, and again in 2008, I was invited by the Youth Foundation to assess approximately 100 Grade 11 learners from disadvantaged backgrounds in order to identify suitable candidates for tertiary study at different types of tertiary training institutions throughout South Africa. The assessment included aptitude tests, scholastic achievement tests, interest tests and study orientation questionnaires.

As most of the students came from severely disadvantaged backgrounds and had to study in their second language, we realised that unless they received strong support throughout their study years, their chances of achieving success would be limited.

Only a relatively small percentage of the students have provided feedback on their academic and professional progress over the years, yet the following types of support were identified as contributing to the students' success (Maree 2013):

1. Financial support; lecturer support; consistent motivation from friends, lecturers and significant others; emotional and spiritual support; guidance; counselling and a positive peer environment.
2. Guidance and support from 'understanding' tutors. This included help with the language of instruction (which was rarely the students' mother tongue), especially since language-related problems often led to communication and study-related problems.
3. Guidance and counselling on study orientation including help with the use of the most effective learning and study strategies.
4. Guidance on acquiring more adaptive behaviour, accepting responsibility for their actions and becoming more resilient.

5. Guidance on knowing where to find help when needed. This was one of the most common themes in all the projects reported on in this article. Universities should, therefore, take special steps to ensure that new students in particular know where to find help when needed.

An important lesson from both projects is that learners' personal circumstances must be taken into account at all times. In a traumatised society such as that in South Africa, it is common to encounter learners whose personal circumstances are so depressed that 'expected/normal' learning and achievement are virtually impossible unless they receive therapy, counselling and/or guidance. These learners require the utmost care and respect. In many instances, learners who perform poorly, both at school and during the actual assessment, are eventually accepted into sought-after fields of study and go on to obtain their degrees. However, most of these students should be channelled into foundation programmes for extra tuition in (for instance) mathematics, physical science, English and computer literacy.

Overall, the results indicate that all students should participate in a comprehensive development support programme, especially during the first two years of their studies. This programme should include career counselling; emotional and spiritual counselling; academic tutoring; social skills training; and physical development support. Ideally, each student should be assigned a mentor and a tutor to give him/her general support, guidance and encouragement at least once a week. There should be regular monitoring of and feedback on each student so that optimal levels of sustained support can be provided.

Lastly, every effort should be made to ensure that all students are mainstreamed in academic programmes rather than isolated as 'special students' during their tertiary studies.

INTERVENTION AT BASIC EDUCATION LEVEL

In this section, I briefly discuss the results of the Junior Tukkies Project, which highlight some intervention guidelines that can facilitate access to and success in tertiary education.

Junior Tukkies Project (2006–)

I have been participating in the Junior Tukkies Project (a project aimed at recruiting promising students to study at UP) since 2007. Prospective students from disadvantaged backgrounds who had obtained a minimum of 60 per cent in mathematics and physical science in their Grade 11 examinations in 2009 attended a week-long winter school at the university followed by brief interventions of various kinds spread throughout the year. UP wishes to develop effective selection mechanisms to increase the number of disadvantaged students in particular in the natural sciences field and to improve the

pass and throughput rates of these students. The main purpose of the programme is to develop strategies to select disadvantaged black students (females in particular) who stand a reasonable chance of studying successfully at the university and to determine predictors of academic success of the students enrolled in the programme (Maree, Fletcher and Sommerville 2011). During the early part of the project (2006–2007), the Senior Aptitude Tests (advanced) (Owen 1999); the Bar-On EQ-I: YV™; the Bar-On Emotional Quotient Inventory: Youth Version (Bar-On and Parker 2000a and 2000b); and the Study Orientation Questionnaire in Mathematics (Maree 1997) were administered to determine possible predictors of success. After three years, it was evident that the Bar-On EQ-I: YV™ did not yield meaningful results, and it was accordingly decided to discontinue using the test. In 2010, the predictability of the scores of the other two instruments was investigated, with the following findings (Maree, Fletcher and Sommerville 2011):

- a. Aspects of emotional-social intelligence (either in isolation or collectively) did not emerge as predictors of (short-term) academic success in Grade 11.
- b. Aspects of language (vocabulary and reasoning ability) emerged strongly as predictors of success.
- c. Reading ability emerged as a predictor of success.
- d. The ability to do mechanical calculations to solve arithmetical problems (number ability) emerged strongly as a predictor of success.
- e. Study habits, study attitudes and confidence in mathematics emerged as predictors of success.

Maree, Fletcher and Sommerville (2011) recommend that the focus in basic as well as higher education should be on improving the basic contextual vocabulary of disadvantaged students studying physical sciences. They should be provided with copies of leading physical sciences journals and encouraged to read these journals to gain a better understanding of the technical vocabulary of the physical sciences.

Students with an adequate study orientation are more likely to do well in the natural sciences than students with an inadequate study orientation; accordingly, Maree, Fletcher and Sommerville (2011) recommend that disadvantaged female students in the natural sciences in particular should receive guidance on appropriate study methods and habits in order to instil in them a positive attitude towards the study of mathematics and natural sciences. Other researchers also stress the importance of study skills in success at school and university (Visser 1989; Van Aardt and Van Wyk 1994). They maintain that in the teaching of mathematics, the focus should be on mastering basic skills in the subject. Also, students with a satisfactory contextual vocabulary are more likely to achieve success in physical science than those with an inadequate vocabulary.

Recommendations of a general nature

Emotional-social intelligence may not predict short-term academic success, but its longer-term predictive value has been proven conclusively. Universities should, therefore, encourage students to acquire this ‘softer skill’ during their studies. Because of the pivotal importance of English in the world of work, both locally and internationally, everything possible should be done to ensure that students are capable of expressing themselves fluently in English (*Financial Mail* 2007).

In the next section, various intervention strategies pertaining to the basic education level are discussed.

Developing the necessary academic, contextual and cognitive skills at basic education level

Teaching content only, without taking into account that the whole learner is involved in the learning process and not only the learner’s brain, is short-sighted. Learners should be taught how to study for examinations and tests and how to study in groups, and the importance of school achievement should be impressed upon them. Today, it is essential not only to teach solution-focused (problem-solving) strategies, but also to teach students how to recognise and use opportunities. Helping students to master the particular technical language (vocabulary) and structure of all subjects is equally important. Students should familiarise themselves with this vocabulary and use it continually. Above all, a positive attitude towards learning should be inculcated in all students.

Dealing with language-related challenges in the classroom

A direct, positive relationship exists between learners’ achievement and their knowledge of the language of instruction (Maree 1994; Strauss 2006). Learners taught in their mother tongue consistently outperform those who do not. Given that 11 official languages are spoken in South Africa, that learners speak their mother tongue at home but are taught through the medium of English during the first three school years and that they are then taught in English, it is hardly surprising that teaching and learning in South Africa is in a precarious state. My own experience, especially in disadvantaged schools, has taught me the importance of explaining concepts in learners’ mother tongue as well as in English.

Many teachers who teach in English are not fluent in the language, which inevitably impacts negatively on the literacy levels of learners. All qualifying teachers, therefore, need to master basic communication skills in English during their studies. The training of teachers who have to teach non-English-speaking learners should be accorded high priority.

Improving teaching by promoting networking, mentoring, linking and career counselling

Achievement in the natural sciences in particular is highly dependent on good teaching practice (Maree 2011). Teaching practice itself, therefore, has to be addressed and improved before positive change can be expected in the country's classrooms and in higher education (Freudenthal 1980; Maree 1999). Intervention at four levels is needed:

Firstly, teachers should network and communicate with colleagues at as many schools as possible and share their knowledge. More affluent schools should partner with disadvantaged schools, sharing their facilities with teachers and learners at these schools. Staff exchange programmes should be implemented to enable teachers to share their insights and learn from one another.

Secondly, 'mentoring' of teachers and learners should be promoted by inviting successful people, especially former learners from schools in a given geographical area, to address and motivate teachers and learners. A successful black actuary, headmaster, businessperson, pilot or engineer could, for instance, be asked to tell learners at his/her former alma mater why it is important to do well in mathematics in grades 11 and 12 in particular.

Thirdly, teachers and learners should understand that school work is closely linked to everyday experiences and, particularly, to career choices and life designing.

Fourthly, all learners should be assessed and subsequently counselled on fields of study and the choice of a career. Learners who have received career counselling are more motivated to study hard in order to gain entry into sought-after fields of study. These learners almost always achieve better marks at the end of Grade 12 than their peers who did not receive career counselling, thereby opening up more tertiary education study opportunities for themselves. I agree with Nzimande (2010) when he says that every teacher should become a career counsellor in his/her own right.

Promoting reflexivity in the classroom

Reflexivity and sound communication should be promoted at three levels in the classroom:

1. reflection-in-action (teachers and lecturers reflect on their practice while they teach);
2. reflection-on-action (after having taught a class, teachers and lecturers think about what happened during the class);
3. reflection-for-action (teachers and lecturers build on lessons learnt during teaching and by reflecting on their teaching practice plan improved interventions in the future) (Farrell 2004; Killion and Todnem 1991; Kuenzli 2006; Schon 1987). Reading matter on the importance of discussion and debate should be

made available in the classroom to promote learners' and teachers' reflection upon reflection (meta-cognition; thinking about thinking) and to improve their communication with one another. This reading matter should also assist learners in acquiring effective study methods and habits; developing a positive attitude towards their subjects; and promoting their overall study orientation. Journals as well as formal and informal questionnaires should be included in such reading matter (Maree 2005). Questionnaires (or data collection instruments) can provide useful information on learners' study habits and attitudes and help teachers to guide learners towards gaining insight into their study orientation. To encourage reflexivity, teachers should ask learners to complete the following statements at the end of a class (Bagley and Gallenberger 1992; Cole, Coffey and Goldman 1999):

- Today I achieved the following aim(s): I ...
- I learnt more about the following topics today: ...
- I mastered the following strategies today: ...
- I had the following positive discovery ('Now I understand!') experience(s) today: ...
- I still do not understand and want to learn more about ...
- I felt ... in class today because ...
- I experienced my teacher as ... today.

Classroom research

To promote their own reflexivity, teachers should analyse learners' marks after an examination or a test (using diagnostic questionnaires) to see in which questions and subsections the learners did particularly well or badly. Basic statistical calculations should be done, including calculating the mean mark for the examination as a whole and for every individual question and subquestion (Van der Walt and Maree 2007). Simple analysis of the marks will yield vital information on which sections of the syllabus the learners understood well and which sections they struggled with. This kind of information can indicate to teachers (and lecturers) which aspects of the work need revision and re-explanation. It can also enable analysis of learners' achievements individually and collectively.

Drawing on the success stories of other schools

The success stories of schools delivering good results in the face of serious challenges should be investigated and reported on. Lessons learnt from these schools should be applied at other schools.

Recommendations of a general nature

The following requirements/guidelines are key to the success of any school.

1. Professional management of the school by a committed headmaster with emotional-social intelligence.
2. Optimal involvement of and communication with parents.
3. Doing the basic things correctly: teachers being at school for the duration of the teaching day and learners studying hard.
4. A culture of learning and teaching at the school.
5. Dialogue between teachers, learners and parents at all levels.
6. Participation of learners in the running of the school instead of applying a 'top-down' (learners being told what to do) approach.

Intervention strategies that can be implemented at initial education level are discussed in the next section.

INTERVENTION AT INITIAL EDUCATION LEVEL

Obtaining a clearer understanding of learners' potential for success

Uncertainty abounds about how best to determine and interpret learners' potential to achieve in higher education. Unfortunately, teachers often interpret test results in an 'isolated' way rather than adopting a holistic and dynamic approach and taking learners' idiosyncratic contexts into account. In the case of disadvantaged learners in particular, admission criteria should not be based solely on achievement (performance) at the end of Grade 12 (Foxcroft 2009). All possible steps should be taken to ensure that learners with potential obtain admission to their chosen fields of study. The value of Grade 12 marks should, for instance, not be over-emphasised, and corrective strategies should be devised to help learners who are failing but have the potential to do better.

The 'value' of certain subjects

Learners and their parents should be informed about the advantages of obtaining sought-after degrees or diplomas and about the importance of the gateway subjects (mathematics, physical sciences and English) in gaining entry into higher education. The difference between mathematics and mathematical literacy, as well as the opportunities afforded by obtaining good marks in mathematics, need to be explained clearly.

Educating parents about factors other than mere content knowledge that co-determine success

Parents, teachers and learners should be ‘educated’ not to over-emphasise ability (‘I do not have the ability to do well’ – an external locus of control), but rather to focus on effort (‘The harder I work, the better my chances of achieving success at school and at university’ – an internal locus of control). A statistically significant correlation exists between study orientation (including self-confidence, motivation, attitude towards subjects, the use of meta-cognitive learning strategies, effective time management, concentration, the will to perform well, parental expectations as well as the social, physical and experienced milieu of learning at home and in school in general) and achievement at school and university.

Changing the perceptions of stakeholders about the relative ‘value’ of different fields and levels of study

Learners’ choice of subjects, fields of study and careers are influenced by the views of their parents. Parents and learners alike need to be informed about the admission requirements for different fields of study. Parents should also be ‘educated’ to have realistic expectations about what their children can or cannot study as well as about how well they can or perhaps cannot perform.

Many parents believe that non-university qualifications (e.g. the practical-technical qualifications of electricians, millwrights and plumbers) are ‘inferior’ to qualifications obtained at university level, and they then often advise their children to enrol for general degrees in the humanities, which offer limited employment opportunities, rather than to enrol for ‘technical’ qualifications, which offer a far better chance of finding employment (Castrillon 2005). These popular perceptions of the ‘status’ of certain fields of study and of training institutions, such as further education and training colleges, must be changed.

Parents’ role in motivating their children

Fathers’ and mothers’ expectations and support co-determine their children’s aspirations and achievements. Parents should, therefore, take a keen interest in their children’s work; motivate and encourage them continually; and communicate regularly with their teachers.

CONCLUSION

A lot has been written about the issues covered in this volume and the changes needed to improve education in South Africa, yet no discernible changes have so far taken place. One such issue is the impact of inadequate access to and poor achievement at

secondary and tertiary level on the national economy. Here, I have proposed that the various challenges should be treated holistically at the different levels of education (national, higher, basic and initial education).

I have also proposed the adoption of a career construction counselling approach to interpreting and analysing the challenges related to access to and success in higher education. Such an approach should, above all, give learners a sense of direction and destiny by helping them to reflect on and find answers to the following questions: Where am I going? Why am I studying? What do I want to become? Why is it important to study hard and to achieve good marks? Why is it important to make social contributions? Also, in a constantly changing world, learners need to acquire career adaptability to enable them to deal with repeated crossroads throughout their working lives. An integrated quantitative + qualitative approach to career counselling combines the best elements of both approaches (Maree 2015). Such counselling should be made available to every learner in the country irrespective of their geographical location or socio-economic situation.

The notion of ‘best practice’ lies at the heart of any intervention regardless of the level at which it takes place. The only criterion for evaluating the relative ‘value’ of an intervention should be whether it is in the best interests of the learner and the country. Full collaboration and networking at all levels of education is also required.

Intention should be transformed into action. It should also be realised that there are no ‘quick fixes’, no shortcuts. Success will eventually be achieved if the various stakeholders commit themselves fully and devote themselves tirelessly to the individual and collective cause. The ‘bigger picture’ should be kept in mind at all times: education is about enabling learners to choose a career, construct themselves (realise their potential), design successful lives and make meaningful social contributions.

All stakeholders involved in helping learners gain access to and succeed in higher education need to realise that purposeful and considered action is what is needed at this stage. Hypothesising, speculating, talking and writing about the challenges now needs to find expression in concrete action.

NOTE

1. Any classification on the basis of ethnic or population group is used in this article merely to reach meaningful conclusions, identify the inequalities that have existed in South Africa for so long and make recommendations to redress the situation.

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