

# Critical Appraisal of the System of Education and Prospects of Meeting the Manpower and Developmental Needs of South Africa

*The main purpose of this article is to review the South African system of education and assess the country's prospects of meeting current and future manpower and developmental needs. This inquiry is based primarily on an assessment of the current status quo in education in South Africa in order to gain a better understanding of the problems facing education and to devise measures to solve these problems, and thereby help meet the manpower and developmental needs of South Africa.*

**Jacobus Gideon (Kobus) Maree**

Kobus Maree is a Professor in the Faculty of Education at the University of Pretoria

## Introduction

In South Africa, as in many other countries, there is great concern about the underachievement of Grade 12 learners in particular, and its impact on tertiary study and, eventually, the national economy. A review of the literature on the South African schooling system reveals that, at present, education is tending to reinforce the social and economic marginalisation of the poorest and most vulnerable people in South Africa (Bloch, 2009).<sup>1</sup> Research on the impact of current intervention programmes shows that the state's education goals have not been achieved. Much has been written about the endemic problems in education that have played a key role in the country's failure to achieve the required 6% economic growth rate. It seems that teachers need to be provided with vision and motivation, and learners with something to strive for – a reason for working hard and realising their potential. This article will enumerate the challenges facing education in South Africa and suggest intervention measures to improve the education system.

The challenges that manifest on the macro-, meso- and micro-levels will be dealt with in terms of the following four structures: state,

society (which, for the purposes of this article, includes various social networks such as the corporate world, teacher training institutions and private persons – in collaboration with the state), school and family. First of all, the argument focuses on the role that the state should play in adopting a teaching and learning philosophy that is appropriate for and conducive to facilitating better career opportunities for the vast majority of learners in South Africa, as well as the provision of infrastructure and the upliftment of poor communities in order to create the circumstances in which learners can perform optimally. At the same time, society should play its part in bringing about the required changes. Since what happens in the classroom will eventually determine whether or not lasting change can be effected, the role of the school is also crucial in creating an optimal learning environment. Equally important is the involvement of parents in their children's learning endeavours. Families should be activated as a major asset in bringing about change. Learners should not only perform better at school and thus obtain admission to more sought-after fields of study, they should also leave school after Grade 12 better equipped to cope with the challenges of university study and life itself. They need to be empowered to choose appropriate careers, enter society and make meaningful social contributions.

## Research Questions

Questions guiding this article:

1. What are the challenges facing the South African education system?
2. What are some of the major factors in the development of education?
3. What intervention measures could improve the education system?

Education analysts and universities across South Africa have repeatedly expressed their concern about the academic quality of the students produced by the schooling system. Some of the most serious challenges facing the system are dealt with here.

## Challenges Facing the Education System

### Schools in crisis

According to Bloch (2009, p. 58),<sup>2</sup> “[s]chooling in South Africa is a national disaster”. This is exemplified by the fact that a black<sup>1</sup> South African schoolboy in 2003 had only a 28% chance of achieving a Grade 12 pass, while 58% of his original grade peer group would have dropped out of school before grade 12. A white schoolboy, on the other hand, had a 10% chance of achieving an A aggregate in 2003. While only 0.1% of black learners achieved an A aggregate, more than 0.05% of these children were not attending historically black schools (ELRC, 2007;<sup>3</sup> Jansen, 2009).<sup>4</sup>

### South African learners' achievement in benchmark studies

Researchers agree that the subject matter knowledge (SMK) of the majority of teachers and learners in South Africa is woeful. Comparative international studies consistently confirm that South African learners lag far behind their counterparts in terms of language literacy, language skills and reading ability. South African learners time and again perform extremely poorly, if not the worst, in international studies (Howie, 2001)<sup>5</sup> such as the Progress in International Reading Literacy Study (PIRLS) (Mullis, Martin, Kennedy & Foy, 2007),<sup>6</sup> the Third International Mathematics and Science Study in 1995, the Third International

Mathematics and Science Study – Repeat (TIMSS-R) (Howie, 2001),<sup>7</sup> and the Trends in Mathematics and Science Study (2003)<sup>8</sup> (Bloch, 2009;<sup>9</sup> Fleisch, 2008;<sup>10</sup> Horne, 2007).<sup>11</sup> After the 2009 general elections, the presidency and commentators agreed that the schooling system was underperforming and that urgent interventions were needed (Mosuwe, 2010).<sup>12</sup>

### Skills shortage

New teacher enrolments remain inadequate. Factors that contribute to Grade 12 learners' lack of interest in studying in this field include the low image and status of the profession, pessimistic perceptions about the job opportunities and environments for new teachers, and the many opportunities that have become available to especially black students in fields that were formerly constrained by apartheid legislation and institutional practices at the time. The teaching profession continues to fail to attract academically strong males and black students. Sadly, for many students, education is often a last resort field of study.

According to Kraak (2007),<sup>13</sup> the skills demand in South Africa far outweighs the skills supply. Ray (2008)<sup>14</sup> maintains that South Africa has a shortfall of 68 000 engineers and artisans. The country is a major exporter of, for instance, medical doctors and engineers, and, at the same time, there are increasing skills shortages in virtually every sector of the economy. This situation is exacerbated by the disjunction between the woefully inadequate supply of skills and the ever-growing demand for them (*Financial Mail*, 2008).<sup>15</sup>

### High levels of learner dropout

The discrepancy referred to is heightened by South Africa's unacceptably high level of learner dropout – a problem that starts at primary school level. The so-called “revolving door

syndrome” continues to be a major headache. In the period 2001-2005, 38% of undergraduate students dropped out from university after four years, 58% dropped out at university of technology level, and 71% dropped out at distance education level (Kraak, 2008).<sup>16</sup> The situation looks gloomy at present given the decreasing number of primary school learners enrolling in schools in the 2000s and a drop in access to high school education after the 1990s. The upshot is a diminishing number of primary school children gaining access to secondary school and, eventually, tertiary education (Paton, 2007).<sup>17</sup>

### Remaining apartheid fault lines (Vavi, 2010)<sup>18</sup>

Generally speaking, white learners still have access to vastly superior education and training opportunities than their black counterparts. Vavi (2010)<sup>19</sup> maintains that these inequalities are also evident in healthcare, housing provision and income. It is consequently of particular concern that only a small, elite band of black people have gained significantly from the changed dispensation since 1994: “In all these aspects of our economy and society apartheid fault lines remain.” (Vavi, p. 3)<sup>20</sup> Inequality, unemployment and poverty (often referred to by education analysts as a trap in which most learners find themselves) are probably more rife in South Africa in 2010 than they were in 1994. It is not an overstatement to say that the country is in a state of crisis, especially if one takes into account that 74% of the youth under the age of 24 are unemployed (Altman, 2010).<sup>21</sup>

### Poor living conditions of families

The high incidence of HIV and AIDS, severe unemployment and widespread poverty often result in the inability of parents to provide even the most basic nutrition to their children, overcrowded homes and single-parent families. Also, many parents are illiterate and cannot,

therefore give their children the support that is needed to facilitate effective learning.

### Low staff morale at training institutions

Low staff morale (HSRC, 2005),<sup>22</sup> uncertainty among staff members and large-scale resignations (Akoojee, 2009)<sup>23</sup> characterise many tertiary training institutions. Ways have to be found to attract well-trained, motivated people to lecture at these institutions and to improve the morale of those currently teaching or lecturing. The National Mathematics Advisory Panel (2008)<sup>24</sup> maintains that a significant part of student achievement is facilitated by teachers. Unless teachers and lecturers are motivated to teach and to facilitate meaningful learning, the chances of an improvement in the current situation are slim.

### Unemployment in South Africa

The official unemployment rate in South Africa stands at 32.6% and, unofficially, it is estimated to be even as high as 50% (Maree, 2009;<sup>25</sup> Mkhize, 2004).<sup>26</sup> These figures indicate that South Africa is heading for a crisis due to the high population growth rate and the inability of the economic sector to create enough job opportunities for young work seekers. Nielsen (2004)<sup>27</sup> reports that while 75% of the white South African Grade 12s of 2001 have found employment, only 18% of their black counterparts have found jobs. The corresponding figures for coloured and Indian Grade 12s are 45% and 32% respectively. One in every 20 Grade 12s has simply given up trying to find a job. Reddy, Dlamini and Ntshingila-Khoza (2004)<sup>28</sup> attribute the discrepancy mainly to the unequal achievement in Mathematics and Physical Science (numerous black learners still underachieve in these subjects in Grade 12, which has a far-reaching negative effect on their chances of gaining access to tertiary institutions and eventually securing employment).

### Statistics to contextualise the discussion

Vally (1998)<sup>29</sup> stated that in a country that annually spends approximately R10 billion on defence, a radical adjustment of priorities was needed. Yet, despite education currently being the portfolio with the biggest budget, the massive expenditure on education has not translated into tangible results. Kraak (2004)<sup>30</sup> provides the following statistics on the transition from schools:

- 7% of Grade 12s enter public higher education
- 12% enter other forms of further and higher education (private higher education, public and private Further Education and Training [FET] colleges and pre-employment training)
- 30% find some form of employment
- 51% end up unemployed or even in prisons.

The Human Sciences Research Council (HSRC) (Mdladlana, 2006)<sup>31</sup> confirms that only 33.6% of FET college students find employment after graduation. Bloch (2009)<sup>32</sup> provides the following figures on school categories:

- A small cohort of 20% of South African schools, half of which are former Model C (currently Section 21) schools and the other half well-performing black schools, delivers the vast majority of the country's eventual graduates. The marked discrepancy between the achievements of former Model C schools and most black schools warrants the attention of all stakeholders
- South Africa has nearly 12 million learners in 27 000 schools serviced by roughly 400 000 teachers
- Half of all university students drop out by their third year
- The National Student Financing Scheme (NSFAS) only covers students' classes and part of their book fees
- Roughly 20 000 schools have no library facilities, and 17% of these schools also have no electricity

- 60% of secondary schools have no laboratory facilities, and 68% of all schools have no computers
- 31% of all schools are reliant on boreholes or rainwater for their water (DBSA, 2008).<sup>33</sup>

Cloete (2009)<sup>34</sup> states that those who have not completed their schooling earn less than R1 100 a month; Grade 12s earn R1 600; diplomats earn R3 200, and graduates earn R5 500. In 2000, those with tertiary education were twice as likely to be employed as those with less than Grade 12, and, in 2007, those with tertiary education were three times as likely to be employed as those with less than Grade 12. In 2002, white South Africans were twice as likely as blacks to get a university education and, in 2007, this figure had increased to 3.5 times.

According to the Education Labour Relations Council (ELRC) (ELRC, 2007;<sup>35</sup> 2009),<sup>36</sup> South Africa faces a shortage of up to 94 000 teachers by 2015, by which stage at least 18 000 teachers are expected to have died of AIDS-related illnesses, and 42 000 to have retired. Furthermore, although Limpopo Province, for example, desperately needs 1 600 mathematics and science teachers, it has managed to persuade only 97 learners to train as such teachers since 2007. This is despite the fact that the Department of Education (DoE) has offered 500 bursaries, each worth R50 000 per student per year. The ELRC (2009)<sup>37</sup> states that whereas 20 000 new teachers have been needed every year for the past few years to replace those who have left the profession, only 6 000 have qualified and only 4 000 of these have entered the system – the remainder have left South Africa to teach in the United Kingdom, Australia and Dubai.

Following is a summary of some of the most important facets of the challenge of under-achievement in South African schools (Figure

1). Most authors (Bloch, 2009;<sup>38</sup> Christie, Butler & Potterton, 2007;<sup>39</sup> DoE, 2005;<sup>40</sup> Development Bank of Southern Africa, 2008;<sup>41</sup> Fleisch, 2008;<sup>42</sup> Jansen, 2002;<sup>43</sup> 2005;<sup>44</sup> Kraak, 2004;<sup>45</sup> Kraak, 2008;<sup>46</sup> Motala & Pampallis, 2005;<sup>47</sup> OECD, 2008;<sup>48</sup> Ramphela, 2008;<sup>49</sup> SAIRR, 2009;<sup>50</sup> UNESCO, 2007)<sup>51</sup> agree that the major problem areas in the education system are the following:

- Political decisions that have impacted negatively on education
- The legacy of apartheid
- The overhasty introduction of an outcomes-based education (OBE) teaching philosophy. Whereas the idea appeared laudable on paper, OBE was introduced long before the necessary steps had been taken at ground level to ensure its successful implementation (that is, to the extent that successful implementation of this education system was possible)
- Increasing poverty levels in society in general but in the black population in particular. The chances seem remote that the state's Millennium Development Goals (which include the halving of poverty) will be met by 2015
- The perceived unwillingness of labour unions to play a more constructive role in dealing with the challenges
- Vast differences in the quality and quantity of teaching and learning in private and former Model C schools (Section 21 schools) on the one hand, and public schools (impoverished rural and township schools in particular) on the other
- The inadequate training of many teachers (under-qualified teachers) in terms of content knowledge (what to teach) and didactic knowledge (how to teach), resulting in poor teaching and learning
- The poor management of many schools by headmasters (together with school governing bodies (SGBs)). Finding people who are

trained, able and willing to manage schools is the key to success in school education

- The poor infrastructure in many schools
- The inadequate career counselling and guidance provided to learners
- The insufficient time spent at schools (by teachers as well as learners)
- The failure on the part of the DoE (national, provincial, district) to communicate with and support schools adequately
- The lack of communication between schools and communities.

The main challenges facing the education system at various levels of intervention (as outlined) are summarised in Figure 1.

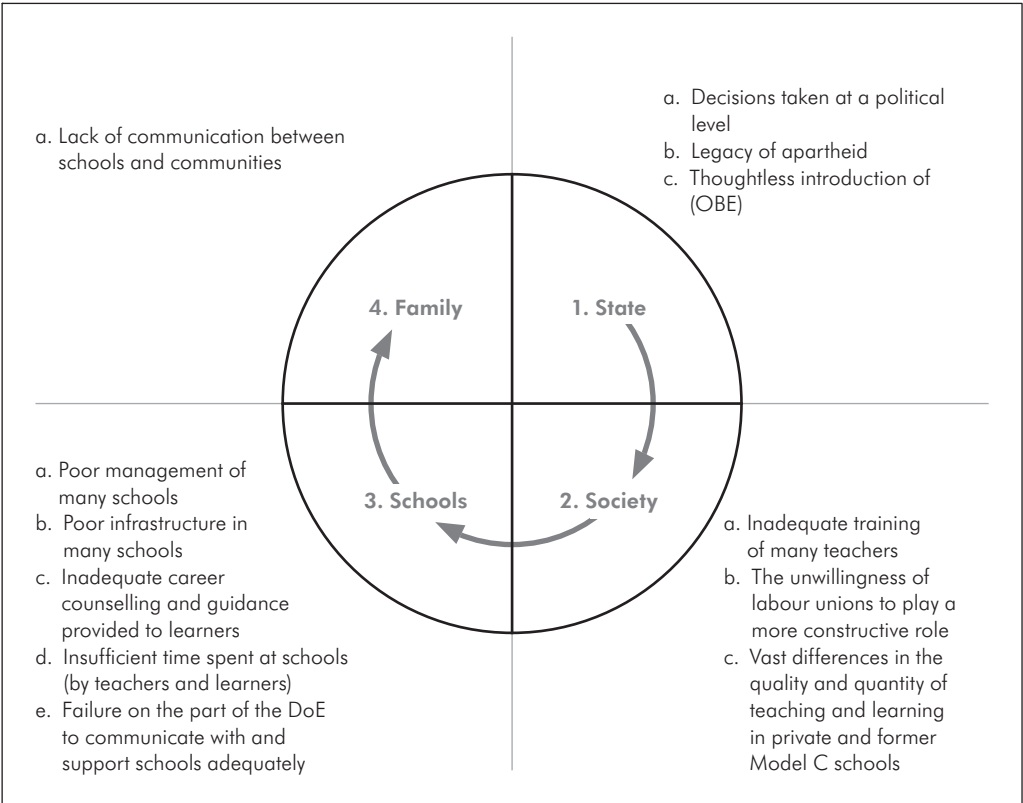
This article will now focus on influential factors in the development of education and indicate why any improvement in South African schools is largely dependent on the degree to which these factors can be addressed.

**Influential Factors in the Development of Education**

**Need for a holistic approach to the challenge of underachievement in South Africa**

It seems essential to approach the challenge of underachievement in South Africa from a holistic approach. Inasmuch as this is possible, all facets

**Figure 1** Challenges facing the education system





of this challenge need to be taken into account and dealt with if the situation is to be improved.

### **Meta-approach to the challenge of underachievement**

Following talks with Proff. Mark Savickas (2009),<sup>52</sup> Elias Mpofu (2010)<sup>53</sup> and Tom Oakland (2010),<sup>54</sup> world leaders in the fields of counselling and career psychology, rehabilitation psychology and assessment in education respectively, the authors believe that South Africans can deal with the challenges referred to earlier without having to re-invent the education wheel. These colleagues use the term “meta-approach” to indicate that existing approaches can be integrated into a more streamlined functional approach to deal with challenges. In this article, such an approach will be used to meet the challenge of underachievement in South African schools.

### **View of OBE as an epistemological point of departure during learning facilitation**

Despite general realisation and acceptance of the fact that education (not unlike the country itself) was and still remains “a project under construction”, characterised by staggering inequalities and fault lines, and that any new teaching system would need much time before showing significant gains, OBE was widely considered problematic from its introduction in 1998 because it pre-requires well-trained teachers and well-equipped classrooms, both of which are sorely wanting in most South African schools. Teacher support has also been inadequate: “Teachers have suffered the most from the effects of policy overload and the failure to ask crucial micro-level questions as to what could enhance classroom success.” (Bloch, 2006, p. 8).<sup>55</sup> Most teachers experience OBE as stressful and believe that all the paperwork associated with it should be drastically reduced. However, it is not the intention of this article

to advance arguments for or against any particular approach to learning facilitation (such as the traditional approach, rote learning or social constructivism). It is, in any case, difficult to formulate comparative or evaluative criteria from the different approaches or to provide a framework within which the newer approaches and the traditional and other approaches can be assessed and compared.

An empirical comparison of the more recent approaches and the more traditional approaches is similarly complex because they have different goals and different theoretical and philosophical premises. It may be possible to construct tests to evaluate the degree to which the set objectives have been achieved and to decide which approach is the “best”. In the current case, however, the only possible base for evaluation would be a theoretical appraisal and comparison of the respective objectives, which would inevitably be tainted by the subjective theoretical views of the researcher concerned (Maree, 1995).<sup>56</sup> The author's view on the OBE approach is that the government should listen to what the teachers and researchers say and make timely and appropriate changes where necessary – above all, with regard to the manner in which OBE is implemented. The recently released report by the Task Team on the Implementation of the National Curriculum Statement (Task Team, 2009),<sup>57</sup> followed by the Minister of Basic Education, Angie Motshekga's (2010)<sup>58</sup> announcement “Action Plan 2014: Toward the Realisation of Schooling 2015” that significant changes are to be made to the system with immediate effect (the new system will be piloted from Grades 1 to 6 in 2011 and rolled out to Grades 7 to 12 in 2012), provide ample evidence of a long-awaited and sobering approach to education in South Africa. Significantly, the minister confirmed in 2010 that “We [will] now talk of a national curriculum and not OBE”.

The pre-July 2010 OBE approach to teaching and learning emphasises the importance of social interaction, working together in groups, problem solving, cooperative learning, an investigative mind-set, and learner involvement in classrooms (Volmink, 1993).<sup>59</sup> Years ago, Lakatos<sup>2</sup> (1976)<sup>60</sup> made the following comment about the theoretical approach to teaching and learning in mathematics: the discovery or creation of new knowledge is not considered merely a logical deductive activity – discussions, the negotiation of meanings, quasi-empirical criticism and testing, logical argumentation, and opportunities for independent development in the construction of new knowledge must inevitably be part of the deal (Maree, 1995).<sup>61</sup>

Against this background, the following points should be kept in mind in the current reflection on teaching.

- Learning by oneself can be meaningful. Often, when work makes sense to them, children will tackle problems they consider difficult, but they will ask for help when they need it
- The ability to master content is not genetically inherited but is carried forward from one generation to the next. Children need not recreate the entire syllabus – they can acquire it with the help of their parents, brothers, sisters, friends, the radio, television, books and their cultural milieu
- Children do NOT learn entirely on their own – there is always some balance between the personal and the cultural. Children integrate the cultural inheritance into their own frame of reference (assimilation) and adapt the knowledge they possess to their cultural inheritance (accommodation)
- Learning is much more than mere coaching. To the extent that children are dependent on their culture for information (for example, they can learn to count only once they have

been taught the names of the numbers), to the same extent they themselves will guide the process of learning. Thus, they decide what they are interested in, when they want to learn or practise something, and when they want to ask for information

- Problem solving, problem-centred learning, social constructivism, and learner involvement during which learners discover, construct or shape their own standard strategies to solve problems are quite acceptable, but only as one approach, one way of discovering “truths”, in conjunction with other approaches
- Discovery or creation in classrooms should not occur in a logical-deductive manner only – classroom discussions, own activity, and independent work can contribute to the construction of new work (Maree, 1995).<sup>62</sup>

A meaningful combination of teaching and learning approaches, shaped by our idiosyncratic circumstances, provides us with the best chance to achieve successful teaching and learning.

### **Facilitation of learning at tertiary level: inconsistency between school and university**

Feedback from universities indicates that in 2009 the Mathematics achievement of first-year students was generally 10-20% lower than in earlier years. The first-year students apparently struggled to transfer the thinking skills they had mastered at school to the university context. Some explanations offered for this are that learners are not given the opportunity to engage actively with the content while at school. Vinjevoldt (2009)<sup>63</sup> argues that Mathematics at school is not studied in-depth and that consequently there are gaps in learners’ understanding of the subject when they arrive at university.

Most of the attention is focused on what happens in school classrooms without considering



whether the teaching and learning styles on tertiary campuses are on the same wavelength as the OBE approach. Feedback from colleagues implies that this is not the case, and although specific teaching and learning styles should be imposed on tertiary institutions, learners should not – after 12 years of schooling – suddenly be confronted with a situation with which they are not at all familiar. The uneven transition from one situation of learning facilitation to another is undesirable and can lead to underachievement.

### **Assistance to teachers: realising the importance of language in classrooms**

The fact that many different languages are spoken in South Africa; that learners often speak one language (their mother tongue) at home but are taught through the medium of a second regional language during the first four school years; and that they subsequently receive further instruction in English (an international language), contribute to teaching and learning problems in South Africa. It should be taken into account that code switching (switching from one language to another in the course of the teaching situation) is often indispensable for the smooth progress of tuition. Based on the author's own experience, especially in traditionally disadvantaged schools, it is essential to make available – from the outset – complex, as well as less complex problems in learners' mother tongues, as well as in the language of instruction especially where information is deliberately restricted to a minimum in order to compel learners to investigate problems and find information by themselves. Sentson (1994, p. 110)<sup>64</sup> points, for instance, to the relationship between Mathematics achievement and learners' levels of proficiency in their first and second languages: "When Mathematics is learned in a second language it is not only the learner's proficiency in this second language (L2) that affects the nature and quality of learning,

but also the learner's proficiency in his/her first language (L1)."

### **Instruction in the learner's mother tongue**

Research (Strauss, 2006)<sup>65</sup> has shown a direct relationship between learners' achievement and the language of instruction (Maree, 1994b).<sup>66</sup> Learners who receive instruction in their mother tongue perform consistently better than those who do not. One would have expected that, from the state's side, mother-tongue instruction until at least Grade 7 would have been non-negotiable. Should learners decide – after completion of Grade 7 – to receive instruction in a language other than their mother tongue, the negative impact of tuition in a foreign language should already have been discussed with them in some detail. Those who have received instruction in their mother tongue generally find it much easier to acquire the capacity to express themselves in a second or even a third language. Mother-tongue instruction in the early years, in particular, is essential. However, many teachers who teach in English are not fluent in English, which inevitably impacts negatively on the literacy levels of learners. Protecting all 11 official languages cannot happen at the expense of not educating learners who are internationally competitive in the pivotal fields of, for instance, scholarly writing and communication in the business world.

The next section will focus on a number of intervention measures that could help improve South Africa's education system.

### **Intervention Measures to Improve the Education System**

The challenges facing the education system should be dealt with on four broadly distinguishable but closely intertwined levels:

- State

- Society
- School, and
- Family.

The levels on which the challenges facing the education system should be dealt with are summarised in Figure 2.

Some of the challenges the state should deal with are summarised in Figure 3.

**State (in Collaboration with Society, Schools and Families)**

**Amending OBE and Curriculum 2005: implementing the Minister of Education’s (Motshekga, 2010) recommendations for the implementation of the National Curriculum Statement**

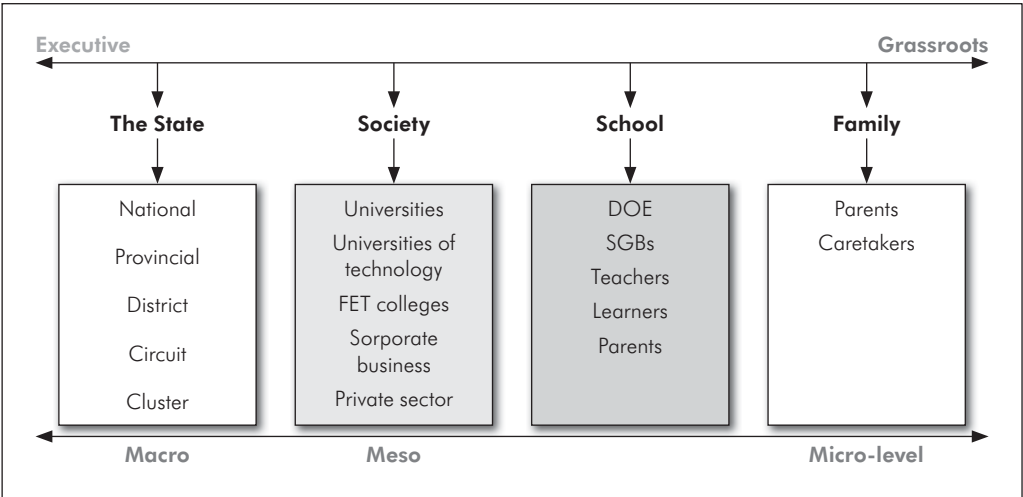
According to Jones (2010),<sup>67</sup> OBE failed mainly because of a combination of the following and other reasons (highlighted earlier in this article):

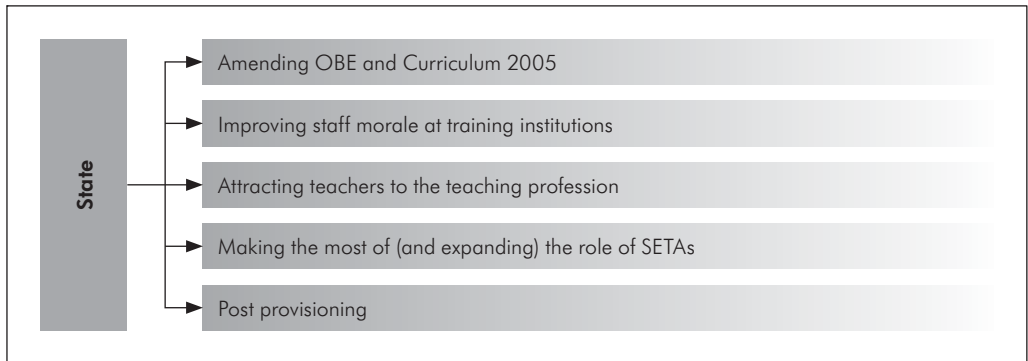
- Lack of appropriate infrastructure in schools, (including lack of libraries and access to the Internet

- A syllabus which required learners to complete too many projects and the fact that textbooks and workbooks were not used in numerous classrooms
- Learners taught certain skills at school, only to discover that they did not have adequate knowledge to succeed at tertiary level
- Teachers being overburdened with numerous administrative tasks, and expected to develop teaching and learning material themselves with little support from education departments.

Prompt implementation and monitoring of the minister’s recommendations are crucial. The author support the emphasis that is placed on issues such as streamlining and clarifying education policies, clarifying the role of subject advisors, ensuring that every learner will be taught in his or her mother tongue and chosen language of teaching and learning from Grade 1 and not Grade 2, regular, system-wide, externally set assessment of the SMK (literacy and numeracy) of learners in Grades 3, 6 and

**Figure 2** Levels on which Challenges Facing the Education System Should be Dealt With



**Figure 3** Challenges the state should deal with

9, easing the workload and administrative burden of teachers, ensuring that every learner from Grade 4 to 12 has a textbook for each learning area or subject and that workbooks are distributed to every learner in 2011 (especially to improve achievement in numeracy and literacy), simplifying, streamlining and improving the process of learner assessment (which includes amending the weighting of continuous assessment) and examinations at the end of each year, centralising the quality assurance and catalogue development of textbooks and other learner and teacher support material, ensuring that teacher training to support curriculum implementation is subject-specific and targeted only where needed, including support staff in the training on curriculum and assessment policy, and doing all of this over a period of five years at which time progress will be evaluated.

Syllabuses should be “streamlined” to a greater extent and teachers given more time to do what they are supposed to do, namely teach (Motshekga in Rademeyer, 2009;<sup>68</sup> Vinjevoldt, 2009).<sup>69</sup> Pandor (2008b)<sup>70</sup> argues that the mastery of particular facts is indispensable for Mathematics: “Facts and knowledge are important and learners need support from competent and knowledgeable teachers. We need to devise

interventions that restore the confidence of teachers.” (Pandor, 2008b, p. 1).<sup>71</sup>

### **Improving staff morale at training institutions**

The personal values, motivation and personality of teachers have a direct effect on learners. The state should, therefore, put the necessary measures in place to ensure that teachers feel happy, motivated, safe and secure. Mechanisms should be introduced for listening to the legitimate complaints and grievances of teachers and solving their problems. Emotional, psychological and practical problems both in and out of school should be resolved in good time, to the satisfaction of all parties concerned.

### **Attracting teachers to the teaching profession**

Considering that many teachers today did not choose to study teaching and chose the career only because it was one of an extremely limited number of careers (especially in the case of black teachers) open to them, it is not surprising that many teachers are not motivated to teach. Furthermore, the vast majority of education students are white while the vast majority of public schools (roughly 90%) are predominantly black. The state clearly needs to find a way to attract some of the brightest young minds (black students in particular) to

the teaching profession and to lure white teachers to formerly disadvantaged black schools. At present, there are simply not enough qualified black teachers to fill all the vacant posts in predominantly black schools.

**Making the most of (and expanding) the role of Skills Education Training Authorities (SETAs)**

The central role that SETAs can play in meeting the skills demand should not be underestimated. However, various issues need to be taken into account in this regard (Benya & Mavuso, 2008).<sup>72</sup> First, learners should be recruited into specific fields on the basis of real interest in a specific career or job, and not of need. Second, close collaboration is required between the

state, SETAs and private companies to ensure that learners receive training in skills needed by the economy to pre-empt a situation where learners graduate from the SETA system only to discover that their qualification does not “guarantee” employment.

**Post provisioning**

The ELRC (2007/<sup>73</sup>2009)<sup>74</sup> highlights the following factors in connection with teacher post provisioning decisions. First, teacher-pupil ratios, with an average ratio of 1:30 in primary schools and 1:35 in secondary schools, should be regarded as the norm. Second, excluding the headmaster from formulae used to determine the provisioning of calculate posts seems

**Figure 4 Challenges Society Needs to Meet**



necessary, as does the ring-fencing of a percentage of the education budget at national level to cover post provisioning for rural schools. Third, teacher training should be controlled centrally by the state though the provision of bursaries to attract prospective teachers. Fourth, where serious teacher shortages occur (for instance, in rural schools), priority should be given to recruiting teachers from the same communities rather than appointing teachers from urban or other external areas, and an allowance should be made available for teacher transport (especially for qualified teachers in rural areas). Fifth, teachers in rural schools should receive additional remuneration (for instance, in the form of a rural allowance), and local government should be involved through the building of houses and provision of solar electricity for teachers. Lastly, promotion criteria for teachers and principals in rural areas should be relaxed, including lowering the years of experience required for particular post levels.

Some challenges that society needs to meet are summarised in Figure 4.

## Society

### Providing support to trainee teachers

From 2002 to 2008, the author and his colleagues were involved in a project aimed at recruiting rural, economically marginalised students to study in the Education Faculty of the University of Pretoria (UP). The project gave them the opportunity to learn from these students and to find out what works and what does not work. Of the 58 students who enrolled in 2003, only six eventually graduated in education. The rest decided after some months to enrol in different faculties, for instance Engineering, Medicine, Town and Regional Planning, Actuarial Sciences, and Nursing (for

a full report, see Maree, 2005a).<sup>75</sup> Above all, the author and his colleagues learnt the following:

- Negative perceptions of education as a career pathway were so strong among the recruits that most of them would rather drop out than proceed with their studies in education
- The rural students, in particular, struggled to adapt to university studies because of their poor grasp of English as a medium of instruction, their perceptions of lecturers and administrative staff as lacking empathy and being unhelpful, racism, financial concerns, and an inability to adapt to a “foreign” environment.

This was the case despite the fact that the faculty, under the expert management and guidance of Jonathan Jansen, had devised and implemented a comprehensive support package that included the following. First, the students entered a rigorous four-year teacher education programme with at least 40% of their time spent working under the mentorship of the top teachers in Science, Mathematics and the Humanities in the faculty's partnership schools. Second, the students were involved in a comprehensive programme of development support, especially during the first two years of their training, which complemented their academic work. As many of the students had lost their parents and were without other kinds of home-based support, the faculty offered career guidance, emotional and spiritual counselling, academic tutoring, life skills and physical development support. This support was provided in partnership with experts, including some drawn from the private sector. For example, a workshop on practical financial skills (“How to manage my finances”) was held in partnership with First National Bank. Third, each of the students was assigned a personal mentor who met

the particular student at least once a week for general support, guidance and encouragement. Among these mentors were senior leaders of the university, including the vice-chancellor and the dean, as well as other academic role models at the UP. The university's Department of Educational Psychology supported the mentoring process through regular monitoring of and provision of feedback to each student.

Eight years later, looking back at this project, the author can probably best summarise the lessons learnt during the time in the words of three of those students, all of whom are currently enrolled on either Master's or doctoral degree studies (one of which in education), when they stumbled upon him late one Sunday evening in Hatfield: "What initially seemed like an impossible assignment and a disastrous choice (that is, to study at UP) turned out to be a life-defining moment for virtually all of 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." Indeed, there is no good excuse for failure.

### **Helping graduates find work after their studies**

The crucial issue of helping students find jobs receives scant attention in many institutions. Students across disciplines should be exposed to the world of work from an early age in order to facilitate a smoother entrance into the workplace. No aspect of career counselling is more important than helping people find jobs as a means of income. Bloch (2009)<sup>76</sup> and Blumenthal (2009)<sup>77</sup> agree that universities, in particular, should do much more to assist graduates find work after their studies – at present, only 30% of university graduates manage to

secure employment. Blumenthal (2009)<sup>78</sup> maintains that the learnerships offered by the SETAs, which combine academic training with actual work experience, provide an ideal opportunity for hands-on training that will help graduates find employment. Both these analysts believe that greater cooperation is needed between training institutions and potential employers, including those in the private sector.

### **Making community service compulsory for all teachers**

In order to facilitate and expedite equity, access and redress, teachers who have just completed their training should be compelled to do community service by teaching in remote rural schools (Maree, 2008).<sup>79</sup> Teachers working in distant schools should receive emotional and psychological support and financial incentives, and the necessary steps should be taken to ensure their safety.

### **Providing teacher education and professional development**

Teacher training institutions should serve as sites for pre-service teacher education and teacher professional development. Distance education and information communication technology (ICT) should be used in the provision of teacher education and professional development (ELRC, 2007).<sup>80</sup> The issue of continuing professional development for teachers also requires further consideration. The principle of facilitating life-long learning is crucial, but threatening teachers with deregistration should they fail to accrue a certain number of Continuing Professional Development (CPD) points each year is counterproductive and, in fact, impossible to carry out. A respectful and helpful attitude should characterise any such endeavour. This matter is best handled by professional teacher organisations, in collaboration with labour unions.



### Dealing with employee relations and conditions of service

As part of sound employee relations, greater emphasis should be placed on teachers' social commitment to the profession, including the inculcation of a strong work ethic. Teacher unions should take the lead in fostering a cooperative and non-antagonistic relationship in the provision of quality public education.

### Ensuring timely assessment and intervention

Mosuwe (2010)<sup>81</sup> highlights the establishment of a ministry dealing with monitoring and performance evaluation, which represents a significant step in the right direction. Through the introduction of systemic evaluation on Grade 3 and Grade 6 levels, learners' basic skills can be assessed at a much earlier stage, enabling timely remediation where necessary (Ngqengelele, 2008).<sup>82</sup> The problem of underachievement may well originate early in a learner's career, and early assessment and intervention is therefore indispensable for future academic success. The reasons for inadequate performance on these levels should be investigated, aggressive intervention should be undertaken, measurable objectives should be set, and "rolling plans" of three to five years should be put in place (Maree, 2002).<sup>83</sup>

### Determining learners' potential for passing

Much uncertainty exists on issues such as how learners' potential for achieving in Grade 12 examinations can be determined, how proficiency tests should be interpreted and how the impact of socio-psychological factors on achievement can be ascertained. Teachers too often interpret test results unscientifically without adopting a holistic and dynamic approach and without giving due consideration to the personality traits and idiosyncratic contexts of learners. Teachers require training in these issues, and due heed should be given to the research currently being

undertaken by the national DoE, universities, individual researchers, private research institutions and others on "fair" admission tests for use by universities countrywide. Admission criteria should not only "reward" existing achievements but should also be designed to identify unrealised potential. A particular criterion such as Grade 12 marks should not be overly emphasised (Foxcroft, 2009).<sup>84</sup> Criteria should be available to evaluate learners on a national level and to help determine who has a realistic chance of passing and who not. Attention should also be given to remedial strategies for "recovering" those learners who have lost their way but still have the potential to catch up. It is tragic that so many learners who may have been able to pass are "lost" every year.

### Conducting national teacher audits

Without accurate figures on the precise number of trained teachers in schools, as well as their qualifications and where they are teaching, the steps needed to deal with the challenges our education faces cannot be taken. Regular audit checks should also be carried out to assess the viability of qualifications (Simkins, Rule and Bernstein, 2007).<sup>85</sup> If it is found that qualifications do not lead to employability in some form or other, consideration should be given either to adapting those qualifications to suit the needs of the market or, in extreme cases, to close down departments that offer such qualifications.

In the light of the severe teacher shortages the country is experiencing, the services of retired or retrenched teachers should be obtained as a matter of urgency. Many thousands of teachers left the profession (either by choice or because they were offered attractive severance packages).

### Improving the training of prospective teachers

Far more teachers need to be trained if a long-term solution is to be found to the education

crisis in the country. In-service training, and correspondence and holiday courses should be considered in this regard, particularly training based on the principles of OBE. Continued training and retraining are also essential to cope with the changing needs of a rapidly changing society.

### **Improving the poor socioeconomic circumstances of communities**

School reform is impossible unless drastic improvements are made to the poor socio-economic circumstances of the communities in which many schools (especially those in rural areas) are situated. The state (at macro-level) can neither change the situation in our schools nor can one expect it to do so (despite some arguing that taxpayers give the state enough money to do so!). The key role of society (at meso-level) in bringing about much-needed change is indisputable (Bloch, 2008).<sup>86</sup> Society should contribute to the building of sports fields and swimming pools, and can be expected to contribute financially to the building of private libraries, the provision of feeding schemes, books, computers, toilets, electricity, science laboratories and communication systems (including telephones, personal computers and access to the Internet). While vast inequalities continue to exist in teacher provision (better-trained teachers inevitably move to the cities) and infrastructure, predominantly black rural and township schools cannot be expected to match their counterparts in former Model C (currently Section 21) schools. Where schools do not yet have their own libraries, community libraries should be made available to such schools (Sibiya, 2007).<sup>87</sup>

### **Providing training in emotional intelligence (EI)**

Schools generally welcome research on any aspect of Mathematics, for example. However, they are reluctant to give time to research

programmes on EI, the standard excuse being that overcrowded syllabuses allow no room for facilitating the “softer” skills. This, despite the fact that research has time and again shown that school achievement, aptitude and IQ predict only about 9% of learners’ future success, while EI predicts between 36% and 40% of such success (Bar-On, 2006).<sup>88</sup> The excessive emphasis placed by departments of education on only certain facets of the comprehensive syllabus at the cost of programmes that have greater meaning for learners in the long term is plainly short-sighted. All teachers should be trained on how to promote EI in their classrooms, and they should be encouraged to apply these skills on an ongoing basis.

### **Importance of teachers’ working knowledge of the learning theories and psychological principles that underlie teaching and learning**

The National Mathematics Advisory Panel (2008)<sup>89</sup> maintains that changing learners’ beliefs from the belief that ability alone will facilitate success to the belief that other factors, including effort, will increase their engagement in learning, which, in turn, improves the outcomes achieved. The focus in South African schools falls too often on the teaching of content without taking into account that it is not only the learner’s brain that is involved, but the person as a whole. It is short-sighted and counterproductive to concentrate on content alone – the underlying theoretical principles should also be applied in practice. Matters such as the preparation of learners for examinations and tests, the importance of group work and the long-term purpose and goals of adequate achievement should be discussed frequently in the classroom.

A thorough knowledge of the learning theories and psychological principles (Piaget, Bronfenbrenner, Vygotsky, *et al.*) that underlie

teaching and learning, as well as the application of these theories and principles, is a prerequisite for establishing teaching that links up with learners' level of cognitive development. The search for appropriate problem-solving strategies, as well as the added ability to recognise opportunities, should be accorded high priority in any classroom. Functional knowledge of technical terminology is essential. Teachers should ensure that learners understand the relevance and use of school subjects in postmodern society, and they should also instil a positive attitude to learning in every learner. High priority should be given to training teachers who can teach non-English-speaking learners.

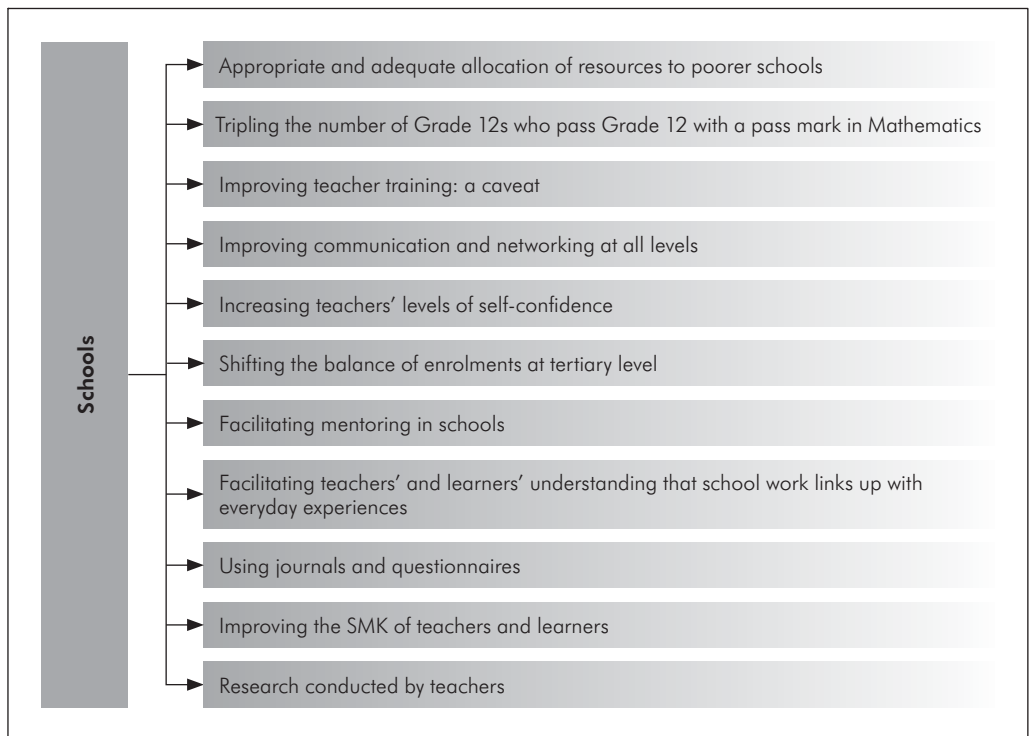
Some of the challenges that schools need to deal with are summarised in Figure 5.

## Schools (in Collaboration with the State, Society and Families)

### Appropriate and adequate allocation of available resources to poorer schools

Many schools are still hamstrung by poor infrastructure and inadequate physical facilities, including broken furniture, inadequate library services and poor electricity supply. A very high teacher-learner ratio (often with learners of different ages in one class) and disciplinary problems are still cause for concern. The allocation of available resources to poorer schools, the adjustment of the school funding model, and the elimination of "wastage such as the high salaries of functionaries and exorbitant consultancy costs" (Vally, 1998, p. 4)<sup>90</sup> should therefore receive urgent attention.

**Figure 5 Challenges Schools Need to Deal With**



### **Tripling the number of Grade 12s who pass Mathematics and Physical Science, and improving the achievement of black learners**

Pandor (2010)<sup>91</sup> states that South Africa has to triple the number of Grade 12s who pass Grade 12 with a pass mark in Mathematics and Physical Science in order to keep up with the rest of the world. The situation of black learners in particular is worrying. Despite significant improvements in black Grade 12 learners' results since the late 1980s, today, 16 years after the demise of apartheid, the ratio of black Grade 12s to white Grade 12s who pass Grade 12 with a pass mark in Mathematics and Physical Science is totally disproportionate. Although the establishment of the Dinaledi schools was a step in the right direction, the situation in these schools has to be monitored carefully to establish why the pass rates seem to have dwindled over the last year or two. All learners should be granted access to these schools, not only those in close proximity to the schools.

### **Improving teacher training: a caveat**

Vinjevoldt (2009)<sup>92</sup> contends that Mathematics teachers, especially Grades 10 to 12 teachers, should rather have a BSc qualification than a four-year BEd degree. Various universities are currently moving in this direction, to general acclaim. These attempts to improve teacher training (the requirement of a BSc degree followed by a teaching diploma instead of a four-year BEd degree) are to be welcomed, but the fact remains that education as a profession simply does not attract the best talent in Grade 12. Unless more and brighter students are attracted to the profession, fewer teachers will qualify in the foreseeable future in the twin gateway subjects of Mathematics and Physical Science. Ways have to be found to make teaching attractive to teachers and to motivate them to teach with enthusiasm. A recent Human

Sciences Research Survey (Cosser, 2009)<sup>93</sup> revealed that only 3% of the Grade 12 learners in the study considered teaching as a career. If this figure is disaggregated further, it emerges that the black learners in the study were far less interested in becoming teachers than their white counterparts.

### **Improving communication and networking at all levels**

Teachers should network and communicate with colleagues and share their knowledge. Affluent schools should partner with disadvantaged schools and share their facilities with these schools. Rural settings should be regarded and used as resources; that is, an asset-based approach should be implemented instead of focusing on deficits or weaknesses and implying that being disadvantaged or being black is the problem.

### **Increasing teachers' levels of self-confidence**

Increasing teachers' levels of self-confidence is also crucial. All too often, teachers state that they are uncertain whether their teaching constitutes "best practice". Many problems in classrooms can be traced to teachers' feelings of disempowerment. They need support so that they can accept full responsibility for what they do.

### **Shifting the balance of enrolments at tertiary level: the pivotal role of career counselling**

Career counselling as a strategic facet of support for all students at all levels is needed if South Africa is to stand any chance of reaching university enrolment ratios of 40%: 30%: 30% in the humanities: business and commerce: science, engineering and technology respectively (Pandor, 2008c).<sup>94</sup> The critical significance of career counselling and guidance as a major factor in success at school, university and, eventually, one's career and life itself cannot

be denied. The author therefore concurs wholeheartedly with the following sentiments expressed by Blade Nzimande, Minister of Higher Education, on 7 July 2010, namely that South Africa needs to strive for the establishment of an educational system where every teacher is trained as a counsellor capable of administering career guidance (counselling): “Career guidance must be built into teacher education. We must work to strengthen that” during the launch of the ministerial flagship programme on career counselling and guidance in Pretoria. Nzimande (2010)<sup>95</sup> emphasised the importance of making this service available to learners in rural areas. Both career counselling (individual psychological intervention used to promote development and help persons clarify their identity to enable them to make career-related decisions) and vocational guidance (which can take place in either individual or group contexts and uses educational methods to promote adjustment and to give advice) should be implemented in South African schools (Savickas, 2009).<sup>96</sup>

### **Facilitating mentoring in schools**

Bringing in successful people to motivate learners, especially former learners from a particular school, can be very useful. A successful black pilot or a black engineer could, for instance, explain why it is necessary to study trigonometry in Grades 11 and 12.

### **Facilitating teachers’ and learners’ understanding that school work links up with everyday experiences**

Teachers and learners should be helped to understand that school work links up with everyday experiences and career choices. Every learner should receive guidance on and be exposed to the different study fields on offer. Contemporary career counselling is currently not available in the vast majority of schools in the country, especially in disadvantaged schools.

### **Using journals and questionnaires to facilitate meta-cognition and reflection during class discussions**

Researchers such as Wong (1992)<sup>97</sup> and Cobb, Wood, Yackel and Perlwitz (1992)<sup>98</sup> have indicated a statistically significant positive correlation between aspects of study orientation, such as absence of fear, motivation, a positive attitude towards a subject, the use of meta-cognitive learning strategies, effective time management, concentration, the will to perform well, parental expectations, and a learning environment that is conducive to learning and adequate achievement. Meta-cognition includes prediction (of ability to solve a problem), monitoring (of behaviour), assessment (of progress) and reflection (learners’ ability to explain why they make particular mistakes). In essence, this amounts to learners’ awareness of the necessity of timely and ongoing regulation and reflection in respect of their cognitive processes (Fortunato, Hecht, Tittle and Alvarez, 1991, as quoted in Van der Walt, Maree and Ellis, 2008).<sup>99</sup>

Reflection and communication in class are crucial for achievement. As indicated earlier, the emphasis on the mastery of particular outcomes requires teachers to reflect continuously on the effectiveness of their own tuition.

Discussion documents should be provided in classrooms to promote reflection and meta-cognition (thinking about thinking). Based on such documents, tuition and teaching strategies can be planned to help learners acquire more effective study methods and habits and to develop more positive attitudes to subjects. Communication with learners can also take place through journals and questionnaires. The use of informal questionnaires (Maree, 2005b)<sup>100</sup> can contribute to the collection of information on learners’ habits and attitudes to particular subjects. They can also help teachers design discussion documents through which learners can gain insight into their own situation in class.

**Improving the SMK of teachers and learners**

As was pointed out earlier, researchers agree that the SMK of the majority of teachers and learners in South Africa is woeful. It seems essential to ensure that both teachers and learners acquire basic content knowledge (SMK) before leaving school. There needs to be a strong emphasis on the acquisition of basic content knowledge by teachers who, in turn, should facilitate this knowledge to learners.

**Research conducted by teachers**

Teachers at all levels should be encouraged to conduct research on what is happening in their classrooms and schools. The DoE should consider launching a journal on teaching in South Africa in which teachers could publish their research results. Teachers should be rewarded financially for the publication of their peer-reviewed articles in the same way that researchers in higher education are rewarded for their publications. After every examination or test, teachers could, for instance, analyse learners' marks (with the aid of diagnostic questionnaires) to identify the questions and subsections of questions in which learners did particularly well or poorly. Basic statistical calculations should also be done, including the mean score for the questionnaire as a whole as well as for each question, the mode, the median, the standard deviation, and learners' standard scores (the basic z-scores). Compiling frequency tables and

drawing basic graphs are equally important since they help to create a visual representation of achievements. Basic t-tests will reveal quickly whether the boys in Grade 11, for example, performed significantly better or poorer than the girls in (say) trigonometry. Without such information, it will not be possible to analyse the learners' achievements, either individually or collectively.

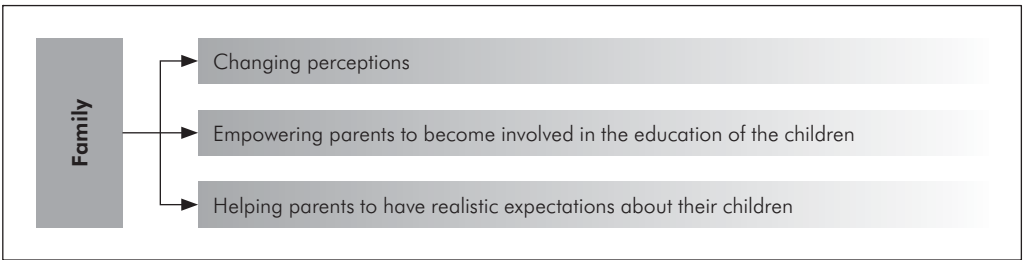
Some of the challenges the family needs to deal with are summarised in Figure 6.

**Family**

**Changing perceptions about the status of tertiary training institutions and the skills shortage**

Until such time as popular perceptions of the status of training institutions, such as further education and training colleges and universities of technology, change, the discrepancy between supply and demand will continue to exist. The vast majority of learners, parents and teachers still believe that it is far more prestigious to study at university than elsewhere, (such as a university of technology or FET College), often resulting in learners choosing fields of study that are not in great demand, such as the humanities, where graduates have the least chance of finding employment (Castrillon, 2005),<sup>101</sup> instead of following their natural inclination to study practical electricity to become an electrician,

**Figure 6** Challenges the Family Needs to Deal With





for example. Learners and their parents should be informed of the importance of acquiring degrees or diplomas wanted by employers and of coupling these qualifications with critical “softer skills”, such as the ability to communicate fluently in English (*Financial Mail*, 2008).<sup>102</sup>

Many people are under the erroneous impression that the so-called skills shortage refers to technical people only, such as electricians, fitters and turners and diesel mechanics. There is an equally large shortage of managers, administrators, typists and others (Hindle, 2007).<sup>103</sup>

### **Empowering parents to become involved in the education of their children**

Parents should be empowered to involve themselves in the education of their children. Guidance programmes that can enable parents to help their children at home are of special importance. Attention could, for example, be given to the training of some parents to train other parents.

### **Helping parents to have realistic expectations about their children**

Experience has shown the importance of educating parents to have realistic expectations regarding their children's achievement. Many parents do not understand the difference between Mathematics and Mathematical Literacy themselves and are under the impression that the latter is “Standard Grade Mathematics”, which still gives admission to sought-after fields of study. Children are also inevitably affected by the attitude of their parents. Parents who do not take an interest in their children's work, who fail to motivate and encourage their children, who say they themselves were not good at school and that Mathematics is only for “highly intelligent” learners, can be held partly responsible for the underachievement of their children.

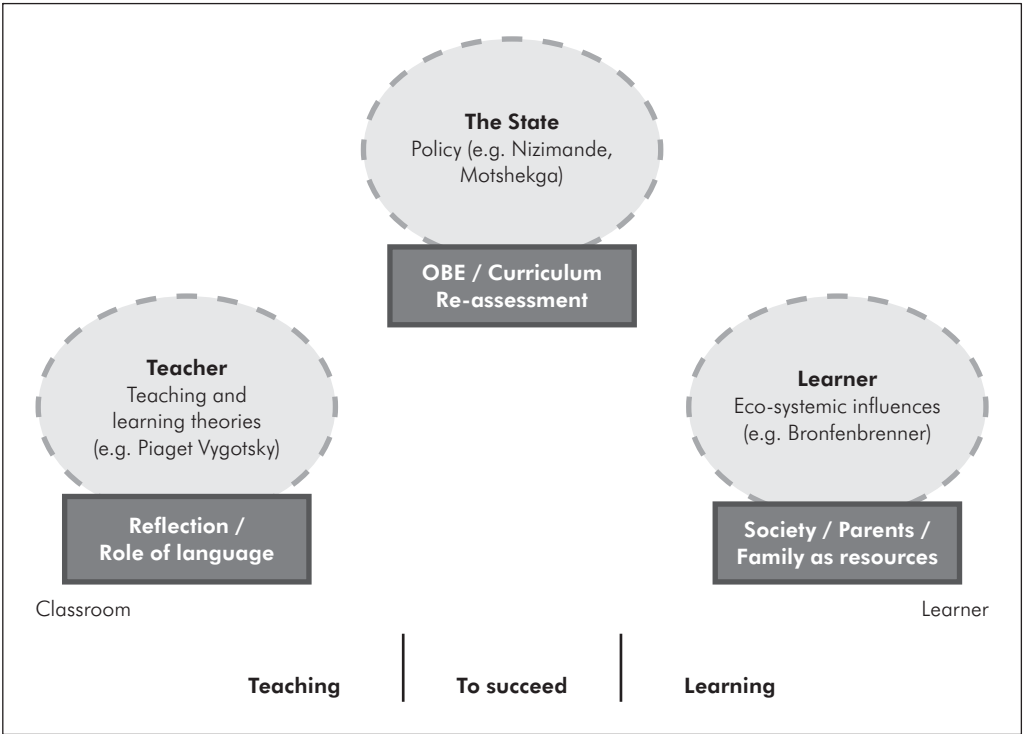
## **Conclusion**

In South Africa, as in many other countries, there is serious concern about the underachievement of especially Grade 12 learners and its impact on tertiary study and the national economy. In this article, a holistic view is given of the educational challenges and factors that manifest on the macro-, meso- and micro-levels. The author indicates the role that the state and society should play in the provision of infrastructure and the upliftment of poor communities so as to create an environment in which learners can achieve. The training of teachers is a priority, and, on the micro-level, parents should take an interest in their children's school work and create a climate in their homes that supports learning. Furthermore, politics should never be allowed to influence decisions that impact our learners' education and thus their future.

The ten-point programme outlined in the “education roadmap” (Bloch, 2009)<sup>104</sup> is a good starting point for interventions aimed at dealing with the numerous challenges discussed in the article. However, merely improving the financial situation of schools and teachers or upgrading the infrastructure at schools will not yield the desired results. Unless the state, society, headmasters, teachers, learners, SGBs and parents all work together to facilitate first-rate teaching and learning, the current situation will not improve. The “bigger picture” should be kept in mind at all times so that the numerous multi-dimensional problems referred to in the article can be dealt with effectively (Figure 7).

The author concurs fully with the following assessment of the current situation as regards FET colleges (an assessment that applies equally well to schools and, indeed, all tertiary training institutions): “The mix of policy incoherence and the ‘structural disconnect’ between policy intention and operational reality have resulted in a

**Figure 7** Meta-theoretical overview of the system of education: blending policy perspectives, ecosystemic influences, and teaching and learning approaches



sector that has ‘fallen through the cracks’. The rhetoric of skills development to which the South African government is purportedly committed is not borne out by this locational disjuncture.” (Akoojee, 2009, p. 134). Stakeholders need to be sensitised to the fact that mere talk about the

challenge of achievement is futile and that purposeful action is now needed. The author trusts this article will help clarify what intervention strategies may best instil hope and thereby help schools deal with the challenges posed by local shortcomings and an evolving global world.

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