
# GETTING THE TALENTED POOR TO GOOD SCHOOLS:

# THE ISASA MATHEMATICS AND ENGLISH PROGRAMME

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Paper presented at

JET Educational Services / Murray & Roberts Conference

**"WHAT'S WORKING IN SCHOOL DEVELOPMENT"**

28 - 29 February 2008

Birchwood Conference Centre, Johannesburg

# CONTENTS

## THE CRITICAL SKILLS SHORTAGE

Too few **school-leavers** today are equipped with the mathematical skills required to qualify as the artisans, technicians, engineers, computer scientists, accountants and actuaries that South Africa desperately needs:

- Of 508 363 learners who wrote the Senior Certificate in 2005, only 26 383 (5.2 per cent) achieved higher grade passes in mathematics. Of these, 5 to 6 000 were African learners, but only 700 passed with an A, B or C symbol, a level of competence necessary to succeed in any mathematical or scientific field of study in higher education.

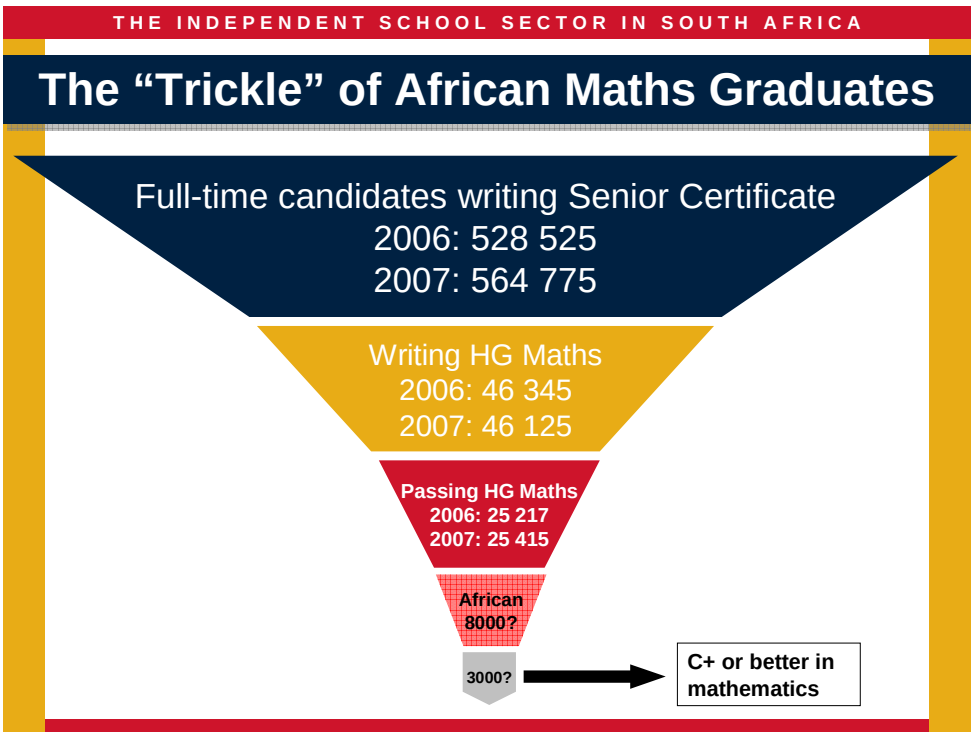
- In the 2006 Senior Certificate examination, 25 217 (only 4.8 per cent of all grade 12 learners) passed higher grade mathematics – fewer than in 2005.

- In 2007, 347 570 learners wrote mathematics but of this number, only 46 125 wrote mathematics at higher grade level. Of these, 25 415 passed at higher grade level, only 4.5 per cent of the whole grade12 group.

These results are closely related to the severe shortage of **teachers**:

- Only 15 per cent of current mathematics teachers have the required qualifications to teach the subject. The Human Sciences Research Council (HSRC) has predicted a shortfall of 32 000 teachers by 2008.

- Currently, only half of the public secondary schools in South Africa are able to offer mathematics at the higher grade level. Yet, the new National Senior Certificate (NSC) makes mathematics or mathematical literacy compulsory for all learners in the FET phase.



To alleviate the skills shortage, it is clear that in the long term the problem will only be solved by improving the overall capacity of the public school system to develop mathematical skills, but in the short term, there is an urgent need to rapidly increase both the number of black school-leavers with university entrance passes in mathematics, and the number of quality teachers in these learning areas.

The key issue is how best to accomplish these goals. To date, interventions to increase mathematics and science passes have usually focused on the most disadvantaged black public schools. However, rigorous evaluations have shown that millions of rand spent over many years have produced little improvement in learner performance or teacher competence. The country clearly needs a different approach to solve this problem.

The most comprehensive research on the mathematics and science crisis in South Africa was undertaken by the Centre for Development and Enterprise (CDE), *From Laggard to World Class* (2005), which recommended that government and private sector initiatives focus on schools with proven capacity to produce more black school-leavers with higher grade mathematics.

Both government and the private sector have realised that a *capacity-based approach* is the way forward. If the problem is to be turned around in the near future, the country cannot afford to keep pouring money into the worst-performing schools. Rather, schools with proven capacity must be targeted and assisted to produce more pupils with university entrance passes in mathematics and related subjects. Moreover, it is vital to expose the learners to experiences and opportunities that promote the requisite skills in information and communication technologies, communication, team-work and life orientation to ensure that they can succeed at the higher education level.

## THE ISASA MATHEMATICS AND ENGLISH PROGRAMME 2007-10

The ISASA Mathematics and English (M&E) Programme is a response by independent schools to the short-term need to rapidly increase the number and quality of grade 12 learners passes in mathematics and English, as well as the number of quality teachers in these learning areas.

*Why independent schools?*

- Independent schools have some of the best resources in mathematics, science and English in the country
- ISASA schools want to help address the national skills crisis
- ISASA members are well-functioning, quality assured schools that provide quality teaching and learning

The Programme, which was launched in 2007, aims to use ISASA member schools to produce 300 black school-leavers with university entrance passes in mathematics and English by 2010. It will also train or retrain more teachers in mathematics and English through teacher learnerships.

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|---|
| ISASA's M&E Programme is aligned with government's initiatives to deal with the skills shortage:<br><br>In 2006, government launched the Joint Initiative for Priority Skills Development (JIPSA) to develop solutions to skills shortages in various |

sectors. JIPSA identified mathematics, science, computer technology and language competence as the fundamental skills required for the future wellbeing of the economy.

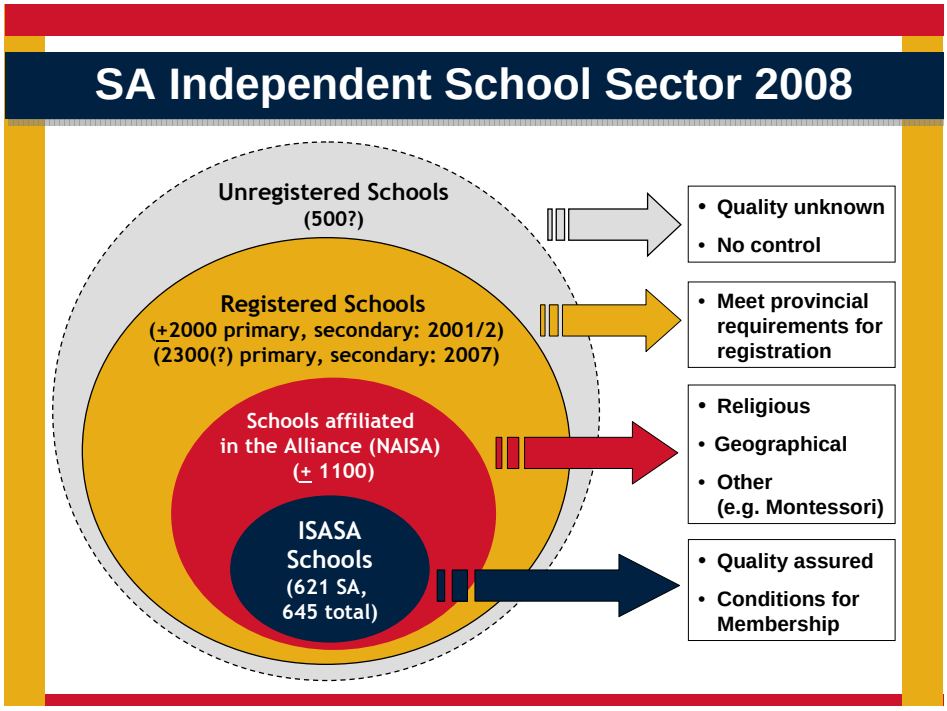
In 2006 the Department of Education launched the Dinaledi II Programme to identify and develop talented learners in mathematics and science. Four hundred public schools all over South Africa are involved, with the aim of doubling the number of African students achieving university entrance mathematics and science passes in those schools by 2009.

ISASA's M&E Programme complements the Dinaledi Programme by using the excellent mathematics and English resources of independent schools to achieve the same goal.

## WHAT IS ISASA?

The Independent Schools Association of Southern Africa (ISASA) is the largest, most inclusive and oldest independent (private) schools association in the region, tracing its origins back to 1929. Today it is a Section 21 company, not for gain, which delivers 50 services to its members.

ISASA is a founder member of the National Alliance of Independent Schools Associations (NAISA), consisting of nine national and eight provincial associations, which interacts with government on behalf of the sector. The diagram below shows ISASA as the largest of these associations with 645 independent schools in South Africa, Botswana, Swaziland, Namibia and Angola, the some 1100 affiliated schools that belong to member associations of NAISA, and the other registered schools who do not belong to any association. Unregistered independent schools exist, although they are illegal, but no-one knows how many there in the country.



**Vision and mission**
ISASA's vision is

- *vibrant independent schools contributing to quality education for all learners in Southern Africa*

Its mission is to

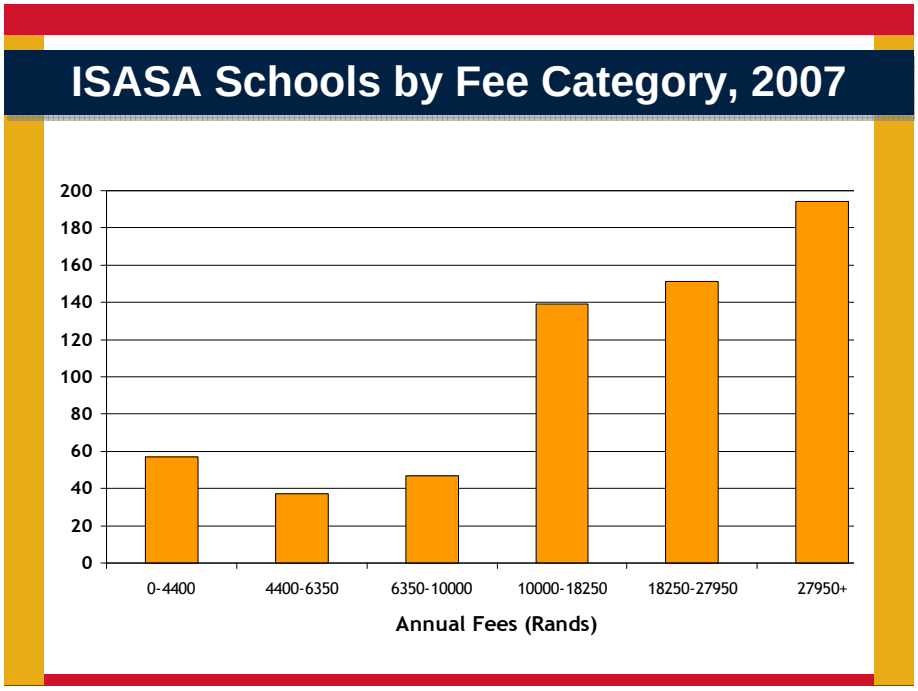
- *articulate the value of quality independent education*
- *build a public-spirited community of diverse independent schools*
- *promote their common interests*
- *provide them with professional services*

ISASA seeks to preserve the independence of its member schools to serve the democratic society from which that independence derives. It also believes that independent schools need to be responsible to their stakeholders and society at large, and must act ethically within the relevant constitutional and legal frameworks.

**Quality Assurance**
As an inclusive, diverse association, ISASA welcomes independent schools of every persuasion which meet its quality criteria and conditions for membership. Every five years schools are quality assured by an independent quality assurance agency on behalf of ISASA. The ISASA brand thus is a public guarantee of high standards of educational and ethical practice and a commitment to "a democratic, non-discriminatory society and a diverse, equitable school community".

**Diverse membership**
ISASA's member schools in South Africa, Botswana, Swaziland, Namibia and Angola represent a broad range of socio-economic and cultural communities, philosophies, religious affiliations and educational levels from pre-primary to post-matric. More than 145 000 learners attend ISASA-affiliated schools, which employ over 14 000 teachers.

The current membership profile is shown graphically below:



The majority of our 25 - 30 new member schools each year qualify for a government subsidy, and most are those charging fees below R6 350 that serve poor black communities. The Association actively seeks members among low-fee schools, which now make up the majority of all independent schools in the sector. Schools regarded by the state as in need of a subsidy make up 30 per cent of ISASA's total membership. Subsidised school fees range from R1 500 to R15 000 per annum.

Member schools understand the importance of contributing to the public interest in education through the development of human and social capital and partnerships with government, business, donors and communities. Most ISASA members operate significant development programmes in partnership with disadvantaged schools and communities, and promote the ethic of service and responsible citizenship.

ISASA derives its income from annual membership subscriptions. There are six categories of ISASA school membership that represent different socio-economic levels of schools. Published school fees are the main indicator of a school's category, but the profile of learner enrolment, sources of income, financial aid and physical facilities are also considered. ISASA's annual subscriptions are levied per learner on a sliding scale, according to the category of school. In 2008, the lowest per capita subscription is R9.10 and the highest is R119.00.

## LEARNER COMPONENT OF THE M&E PROGRAMME

### AIMS

The M&E Programme aims to

- identify the talented poor among black learners in grade 9 who have the potential to succeed in mathematics and English at a university-entrance level, but who do not have opportunities to do so in their current schools
- obtain donor-funded scholarships/bursaries for three years for the learners, and
- place the selected learners in certain ISASA member schools for the FET phase (grades 10 -12) and help them obtain university entrance passes in mathematics and English, and the competencies to succeed in tertiary education.

### MODEL OF INTERVENTION

The M&E Programme model was developed on the basis of empirical evidence from the successful pilot project for black learners in mathematics and science that ISASA ran from 2001 to 2004. Bursaries for three years were granted to 130 selected learners in 11 schools and 76 learners achieved higher grade passes in mathematics.

It was refined through discussions and workshops with key people in schools, education departments, business, NGOs and donor organisations. It was also informed by an independent meta-evaluation of existing impact evaluations of mathematics, science and English interventions by public, private and foreign agencies in South Africa which was undertaken by Eric Schollar and Jennifer Roberts in 2006 for ISASA.

The findings of this "Meta-Evaluation of Intervention Projects in Mathematics, Science and Language 1998 – 2006" indicate that in general, 'add on' remedial or enrichment programmes do not produce a significant impact on learner achievement and therefore a full-time programme of intensive schooling is required.

The M&E Programme has incorporated the following meta-evaluation's recommendations in its design:

- Close attention must be paid to learner selection
- Routine monitoring of performance is important for success
- Time and resources need to be committed to identifying and addressing knowledge gaps from previous grades
- Language competence must be developed. In addition to a mathematics and science support programme, a language support programme should be instituted that focuses on developing both interpersonal communication skills (social and general communication) and academic language proficiency. The academic language proficiency component should prepare learners for reading research texts needed to complete assignments and reading textbooks (in all subjects and with special emphasis on mathematical and scientific language). Writing exercises need to include both creative writing and the ability to express subject-specific ideas in appropriate academic language
- Some form of counselling and psychological support should be provided for learners so that emotional or affective barriers to learning are dealt with effectively
- Career guidance and assistance must be provided to access funding for higher education. The purpose of the project is not just to raise levels of participation and performance in mathematics and English; it is also intended to prepare learners for entry and success in fields of study requiring high-level mathematical skills.

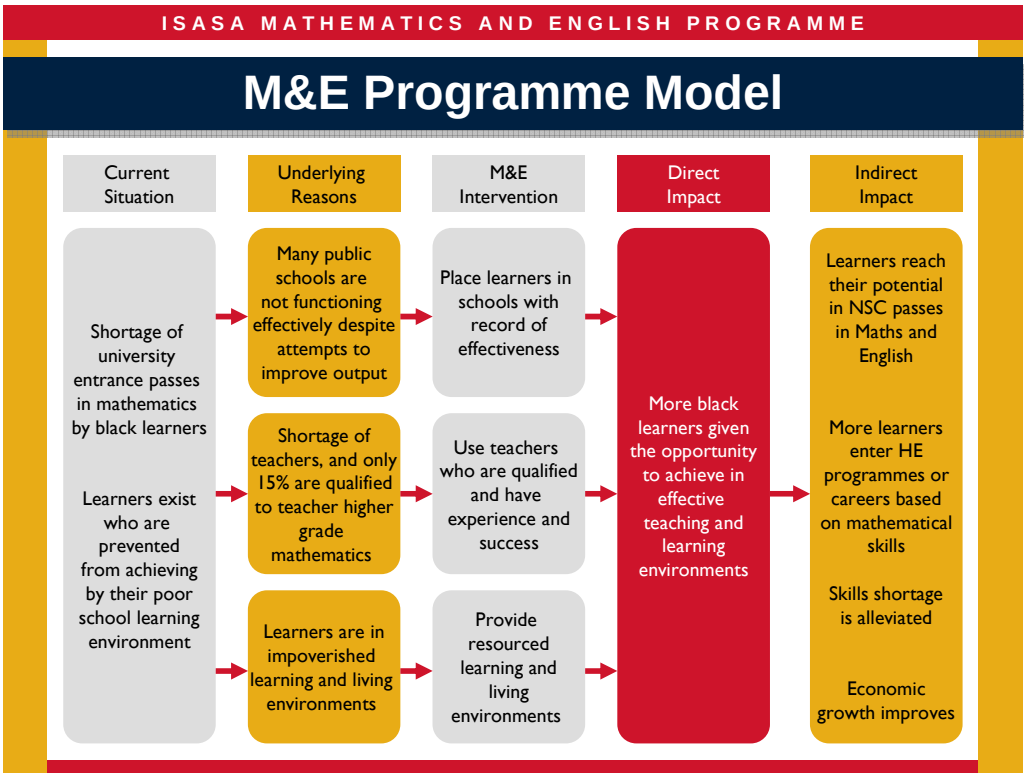
The model of intervention of the M&E Programme is based on the following propositions:

*If learners with potential in Maths and English*

- *can be identified and provided with opportunities they cannot obtain in their present schools, and*
- *immersed in learning environments characterised by expertise, commitment and support,*
- *they will achieve university entrances in mathematics and English and succeed in higher education.*

It is critical that learners attend the school full-time and are immersed in intensive academic study. The ISASA meta-evaluation clearly shows that part-time or enrichment models – such as Saturday schools and holiday schools – are in general inadequate to address the extent of previous disadvantage.

By the end of their schooling, the learners will be expected to have developed the high-level mathematical and English skills, as well as the other skills of a sound education, that will equip them to succeed in tertiary education in the physical and life sciences, business, commerce and management studies, computer sciences and technology, or teaching.




## WHAT SCHOOLS ARE INVOLVED?

The M&E Programme includes a range of ISASA schools that have the commitment and expertise to develop disadvantaged learners in the FET phase.

### Hub schools

The Programme is anchored in three hub schools with special expertise in bridging, remediation and enrichment for disadvantaged pupils. The participating hub schools are Sekolo sa Borokgo (SSB) in Johannesburg, LEAP Science and Mathematics School in Cape Town and Inanda Seminary in KwaZulu-Natal.

Hub schools serve as provincial organising centres of specialist expertise to assist and train teachers in other participating 'host' schools.

### Host schools

ISASA member schools that apply and are selected to participate in the Programme will be clustered around the hub schools. Three types of host schools are involved:

- Low-fee, with a disadvantaged black learner enrolment
- Mid-fee, which are usually the most integrated, and
- High-fee, with excellent resources.

### Scope

The Programme was initiated in 2007, has gone to scale in 2008 and will produce two sets of school-leavers in 2009 and 2010.

In 2008 there are 19 ISASA schools involved, across three provinces (i.e. Gauteng, KwaZulu-Natal and the Western Cape). In 2007, 140 learners were placed in 15 schools,

and in 2008 the Programme expanded to include its second intake of 145 Grade 10 learners.

| Province | School | |
|---|---|---|
| | LEAP | St Joseph's Marist |
| | Cedar House | |
| KZN | Creston College | Durban Girl's College |
| | Epworth | Felixton College |
| | Grantleigh | Inanda Seminary |
| | Kearsney College | St Patrick's |
| | St Dominic's | St Mary's |
| | Seaforth | South City |
| Gauteng | Cornerstone | Edendale |
| | Prestige | Sekolo Sa Borokgo |

ISASA has also issued a challenge to all its member schools to significantly increase the number of their existing learners taking mathematics at the level that will enable them to obtain a university entrance pass. In this way we hope that all members will add to the pool of school-leavers with the requisite skill levels.

## REQUIREMENTS OF THE MODEL

ISASA has very particular requirements for learners and schools in the Programme:

- Learners are required to study mathematics and English First Language higher grade in order to acquire CALP (Cognitive and Academic Language Proficiency), which is essential for understanding mathematical concepts.

- Host schools must have the resources, commitment to diversity and willingness to offer substantial support to the learners.

The fact that learners must study English at the level of a first language comes as a surprise to many people. The ISASA pilot programme, the meta-evaluation and the accumulated evidence from other evaluations point to the key role of language in developing mathematical competence (Taylor and Prinsloo 2005:10; Schollar and Roberts 2006). English at the first-language level provides the necessary cognitive underpinning, without which learners cannot master key mathematical and scientific concepts. Thus ISASA has decided that the 'trunk' of its Programme will be mathematics and English First Language, with the optional 'branches' of, for example, physical and life sciences, business, commerce and management studies, or computer sciences and technology, that learners can choose.

The second requirement relates to the features of the schools that host the selected learners. This includes the necessary resources and a strong commitment to the success of the learners, but also the experience and expertise of the schools staff in bridging disadvantaged learners. Although the high-fee independent schools have the best resources in mathematics, science, English and ICTs, the greatest expertise in bridging disadvantaged learners lies in fact, in low-fee specialised bridging schools. The Programme is centred on these specialist schools as 'hub schools', with the other committed schools serving as host schools. The hub schools lie at the heart of the model, which in essence, turns conventional wisdom on it head, as these schools have the specialist skills and experience but lack the excellent physical facilities of the high-fee schools.

The collaborative interaction among the schools participating in the Programme produces advantages for all types of schools: high-fee schools can learn the necessary teaching

skills and type of support needed by disadvantaged learners from the low-fee schools which serve black communities, and these in turn benefit from the excellent resources of the high-fee schools. Through joining the Programme, the high-fee schools also develop new networks into black communities and insights into how to increase diversity in their learner enrolment.

All schools that participate in the Programme must agree to the following conditions:

- Ideally a participating school should enrol at least *five* additional black learners from disadvantaged backgrounds in Grade 10

- Suitable learners will be identified through the selection process of the M&E Programme in each region

- The school will commit itself, as far it is possible, to help these learners pass the NSC in mathematics at a university entrance level and English First Language. Learners may choose from among other key subject areas that are required by the participating sponsoring companies and donors

- The school will provide the extra tutoring for remediation and enrichment to ensure that learners acquire a solid foundation in these subjects and can progress successfully. The learners must attend two regional camps a year for this purpose

- The school will assign a mentor to each learner who will assist with the learner's academic needs, psychological support and social integration into the school environment. Mentors must attend mentor camps and meetings

- As far as possible, the school will structure regular meetings with parents to give them feedback so that parent support and "buy-in" can be achieved

- The Programme will source bursary funding for each learner for a period of three years. The school must undertake to absorb any additional costs over the bursary as its contribution to the Programme

- A special fund is made available for low-fee schools to cover additional costs including uniforms for the learners, transport costs to and from school every day for those who are not in boarding and the cost of school outings and special events so that the learners are able to participate fully in school life.

## FUNDING

The donors include the Zenex Foundation, RMB through the First Rand Foundation, Epoch and Optima (formerly the Anglo American Chairman's Fund), BoE, BHP Billiton and the Lowenstein Trust.

The total budget for the learner component of the programme for 2007 – 2010 is approximately R30 million. Donors are asked to fund the scholarships at rates of from R17 000 to R26 500 each, depending on school fees and need. The schools in turn contribute by providing each student with extra tuition if required, mentoring and other support, as well as contributing financially to the cost of uniforms, meals, transport, and where available, school boarding.

Although the Programme is still at an early stage, the Programme managers have attempted to calculate a unit cost per learner per year which includes all the direct costs.

The two key factors which determine the amount of each learner bursary are the tuition fees (and boarding where available) of the host school, as well as the number of children on the Programme. The more learners, the greater the economies of scale which reduces the administrative cost per capita.

As the highest bursary given to a learner in an M&E school is R26 500 and the lowest is R17 000, calculating the average involves dividing the total fee cost of R6 719 278.00 in 2008 by the 319 learners on the Programme, to produce an average of **R21 063 per learner** per year. This includes 86 boarders.

When the other direct costs of all the elements of the Programme are added to the school fees, the per capita cost rises to approximately

| | | |
|---|---|---|
| School fees: | R 21 063 | |
| Special needs: | 1 000 | (text books, uniforms, excursions) |
| Camps: | 2 000 | (2 per year) |
| Mentor meetings | 500 | |
| Total | R 24 563 | |
| Administration @ 15% | 3 684 | (including steering committee meetings) |
| **Total:** | **R 28 247** | |

It is important to note that the high-fee schools which charge fees of the order of R55 000 for tuition and R30 000 for boarding per year but only receive R26 500 per pupil for tuition and boarding are subsidising the cost of the learners to a considerable extent and thus making a significant contribution to the national cause.

Of course this estimate does not include the significant indirect costs that all schools bear such as the extra time that mentors, subject teachers and other staff give to the M&E learners.

Certain policy analysts, donors and government officials have asked whether the ISASA M&E Programme might be replicated in public schools. One of ISASA's hopes was that by implementing and evaluating the model, valuable information would be gained that might assist other agencies, including government, to replicate it in the public school sector if it is found to be successful. This would be in line with the key recommendation of the CDE Report of 2005 that the state and donors should provide bursaries for learners with potential in mathematics to study in public and independent schools with capacity.

The highest public school fees at Section 21 schools (ex-Model C) are somewhat lower than the ISASA average. A rough calculation using R16 000 as the average fee reduces the per capita cost to about R25 000, which may well be an affordable amount for the state and donor bursaries.

The issue of cost-effectiveness in terms of the cost of inputs, the throughput of learners, and their achievement at the end of grade 12 is critical in terms of the replicability of the model. This will be examined as part of the external evaluation.

## PROGRAMME IMPLEMENTATION

The implementation process involves three phases.

### PHASE I: PREPARATORY (6 months)

The first phase of selecting the learners and schools is critical because the success of the Programme depends on getting this right. Experience has shown that it takes far more time than initially realized because there are so many sequential stages.

*Applications from schools*
In the first year of operation, predominantly low- and mid-fee black schools applied to host learners because they best understood how to bridge disadvantaged learners. However, as the momentum of the programme grew in the second year, greater numbers of mid- to high-fee paying schools have expressed interest in participating.

*Selection of host schools*
All schools selected to be host schools have to agree to the conditions outlined above.

*Advertising for learners*
Advertisements are placed in national newspapers inviting applications from disadvantaged, African learners in grade 9 level. In 2006, nearly 470 applications were received, while the number grew to almost 700 in 2007.

This increase was due to a more targeted approach in which a mixture of national and regional advertising in the print media and using local radio was adopted. In addition, targeted recruitment was conducted by Programme mentors and school governors and staff; this involved direct contact with feeder middle-schools to identify learners with potential, as well as placing advertisements in local community centres.

*Screening of applications*
All applications are carefully scrutinized for eligibility and suitability, household income levels, the age of the applicant and the nature of current school and academic achievement levels. Certified copies of IDs and recent school reports are required and all the applicants' details are captured on a national data base.

Candidates who are too old, are enrolled at good public schools (ex-model C or Dinaledi amongst others) or are very weak academically are rejected. It is a principle of the Programme that learners are only taken from schools that are not able to deliver the level of education in mathematics and English that would enable them to realize their potential.

*Testing of short-listed applicants*
Entrance tests are conducted at the three hub schools and also at other schools in each of the three provinces to make the venues as accessible as possible to learners and their families. Carefully designed one–hour tests in mathematics and English which have been refined over the last six years are used. These have been endorsed by the Independent Examinations Board. They test mathematical knowledge and skills appropriate to a grade 9 level as well as the ability to think mathematically in solving problems, In the case of English, reading age, writing skills and comprehension are tested. As all learners write these entrance tests they serve as a marker of performance and potential for the external evaluation. In 2008, 350 learners were tested in regional centres in three provinces of whom about half passed.

*Interviews, matching and placement*
In an attempt to ensure that appropriate matching takes place, school interviews of both the candidates and the parents are conducted before a final decision to accept the learner is taken. The nature of the public school that the learners came from is a key consideration in ensuring that learners are able to settle into their new learning environments which often include boarding. Where the learners come from townships or rural environments, experience shows that they will need extensive English language support, so these learners are placed in the hub schools or in host schools which have proven expertise in managing a positive transition for such learners.

In the case of placement of learners in mid- to high-fee schools, strong academic achievement, personality factors, English language proficiency, confidence levels and the home background of the learner are carefully considered. It has been found that in such cases, class factors can be an important criterion in making placement decisions. For example, a learner might come from a background where parents are teachers, nurses, business people or journalists. Such learners are likely to have had exposure to books in a home environment and educational aspirations. This increases the chance of their succeeding in the privileged environments of high-fee schools.

A letter of understanding between the school and parent is signed clarifying the reciprocal obligations which are placed on the school and the learner.

In 2007, 145 learners were accepted, and in 2008, 148.

**PHASE II: LEARNING PROGRAMME (3 years)**

In addition to their immersion in a full school curriculum, learners are provided with additional enriched learning experiences supported by mentoring and learner camps to help them obtain university-entrance passes in mathematics and English at the end of grade 12.

*Immersion in school curriculum*
Learners take part in all academic and extramural activities in the school.

*Assignment of mentors for academic and pastoral support*
Each school is required to appoint a mentor to monitor and support the integration and development of the pupils in the school. The role of the mentor is three-fold: academic, social and emotional.

*National mentor workshops (two per year)*
The first national mentor meeting was held in March 2008 to allow mentors from all three regions to meet so that general problems could be identified, solutions discussed and networks set up. One of the most valuable parts of the meeting occurred when the mentors work-shopped the role of the mentor. A very useful document was produced and circulated to all mentors. It is envisioned that subsequent mentor meetings will be regional.

*Learner camps (two per year)*
Towards the end of the first term when the M&E learners have had an opportunity to adapt to the challenges in their new school environments, they are brought together in regional camps to have some ‘time out’ in relaxing environments which provide adventure and social activities, life skills training and academic remediation in mathematics and English in areas identified by the entrance assessments or their schools.

The mathematics sessions concentrate on the overall structure of mathematics, building up the various elements that allow for mathematics manipulation. A very different approach is used from normal school mathematics and parallels are drawn with the structure of language. Areas that proved to be problematic for all applicants are covered. There is an additional focus on problem solving which has proved to be a very exciting session with the pupils actively engaging with one another in their groups to solve selected problems.

An important result of the first grade 10 camps is that the learners understand that they are part of a special Programme and this gives them a sense of identity with it. The opportunity to participate in fun-filled experiences that stretch the participants mentally as well as physically is a novel experience for them.

The first camp also allows the organizers and their mentors to observe the dynamics of the group as a whole and deal with any individual problems that may have arisen during the first term.

A second grade 10 camp is held before the final examination sessions to address areas in mathematics that learners have found challenging. These are identified by the mentors. This final camp also allows the Evaluation Team to carry out tests on the whole group thus causing minimal disruption in the schools at this busy time of year.

This second camp experience also allows the Programme Managers to observe how the dynamics of the whole group have developed, assess motivational levels and to identify ideas for future camps.

Regional camps are also planned for the grade 11 learners from the 2007 intake which will address key areas of the mathematics and English curriculum, offer opportunities to improve communication skills, provide career guidance (with special attention paid to the computational, technological and scientific fields), and help in identifying and applying for funding for higher education.

*Additional tuition*

Schools provide extra tuition for learners in mathematics and English in areas identified either through the camps or by class teachers and mentors.

**PHASE III: OVERSIGHT (Continuous)**

*Steering committee meetings*

National meetings of the steering committee and its executive committee are held five to six times a year. These bodies include representatives of the three hub schools, ISASA staff, the Programme Manager, Academic Co-ordinator and donors.

These meetings are critical for forward planning, reviewing funding and finances, implementing necessary changes, co-ordinating regional activities and monitoring leaner results.

Three part-time staff are employed by the Programme: the Programme Manager and Academic Co-ordinator as consultants and the Project Administrator whose job responsibilities in the ISASA central office include administrative support to the Programme.

*Academic co-ordination, monitoring and school liaison*

A high level of co-operation and support from the participating schools is developed through regular communication and interaction with the consultants and administrator. All schools receive regular memos that keep them fully informed about developments and

requirements, such as camps, meetings, the submission of marks and reports on learners.

The close interaction of the Academic Co-ordinator with the mentors has proved to be a vital feature of the Programme. This strong regional co-ordination and ongoing liaison with schools results in a continual "ear to the ground" with respect to learner progress and emerging challenges.

*Tracking of learners (quarterly)*
A tracking mechanism is in place within ISASA to record and monitor learner progress. A database has been established and comprises:

- Learner identity number, name, gender and address
- Host school and donor
- Selection test marks
- Mid- and year-end marks for 2007/2008 and 2009
- Remarks and observations by mentors and Programme consultants

*Reporting to donors and ISASA (quarterly, biannual or annual)*
Regular progress reports on the implementation of the Programme, supported by documentation, photographs of key activities and events, and learner marks are submitted to the donors.

In addition, ISASA reports to its governing body and its wider school membership through the quarterly Executive Director's Reports and regular newsletters.

## PROGRAMME EVALUATION

The learner component of the M&E Programme is being evaluated by an independent evaluation agency in order to answer the key evaluation question:

> *Does the intervention model of*
> - *selecting learners with potential in M&E,*
> - *placing them in independent schools with capacity, and*
> - *providing an intensive enriched full-time learning programme*
>
> *successfully improve the quality of their performance in mathematics and English in the National Senior Certificate, such that they can access and succeed in appropriate higher education, and how cost-effective is the model?*

The evaluation began in 2007 when, after a closed tender process to evaluation agencies with proven capacity, Professor Paul Hobden of Quality Projects in Education (QPiE) was awarded the tender contract.

### Evaluation of the Learner Programme

The objective of the learner evaluation is to gather information for both formative and summative purposes in order to answer the following questions

- How successful has the Programme been in improving individual learner performance in mathematics and English language over the three years up to and including matriculation?

- What further value has the Programme added to the lives of participating learners?

- What challenges did the Programme face in recruiting learners?

- What challenges have the participating schools faced in integrating learners and how have these challenges been addressed?

- How have the participating schools dealt with the issue of addressing prior educational backlogs of learners in the Programme?

- How have the schools coped with the issues of language of instruction and the 2nd language choice of participating learners?

- How do the variations in the model of intervention within the Programme compare in terms of impact on
  - Learners placed in specialist bridging schools
  - Learners placed in participating high-fee schools
  - Learners placed in participating mid- or low-fee schools

- What elements of the Programme intervention worked well or should be improved (e.g. selection, mentorship, learner camps, additional classes, etc.)?

- What factors mitigated against the Programme achieving its outcomes and how can these be addressed in future interventions?

- How does this Programme compare in terms of its cost-effectiveness with similar South African programmes or projects designed to address the same problem?

- What happened to learners after they left school? What were their higher education opportunities, study paths and work choices?

To achieve the objectives of the evaluation, QPiE will follow the implementation of the model and the progress of the 2007 and 2008 learner intakes over a four-year period, testing both the project group and a control group of peers, visiting schools and interviewing and observing all stakeholders.

**Baseline testing**
In order to provide a benchmark from which to assess the progress and success of the learners for both formative and summative purposes, testing of learners from the 2007 and 2008 cohorts has taken place. The common selection tests in 2006 and 2007 provide the first benchmark but QPiE have administered their own baseline tests to the M&E learners.

Control groups made up of peer learners have been also tested.

**Monitoring of results**
End-of-year results of learners in the Programme will be monitored for three years. The 2007 cohort has completed the Grade 10 final examinations and these results have been collated and analysed. This monitoring will continue until the group completes grade 12 in 2009. The second cohort which started in 2008 will complete grade 12 in 2010.

**Observation and Interviews**
Close observation of and independent interaction with learners by evaluators in camps will take place over three years. Interviews with learners, teachers and mentors will be conducted over the three year FET phase of each cohort.

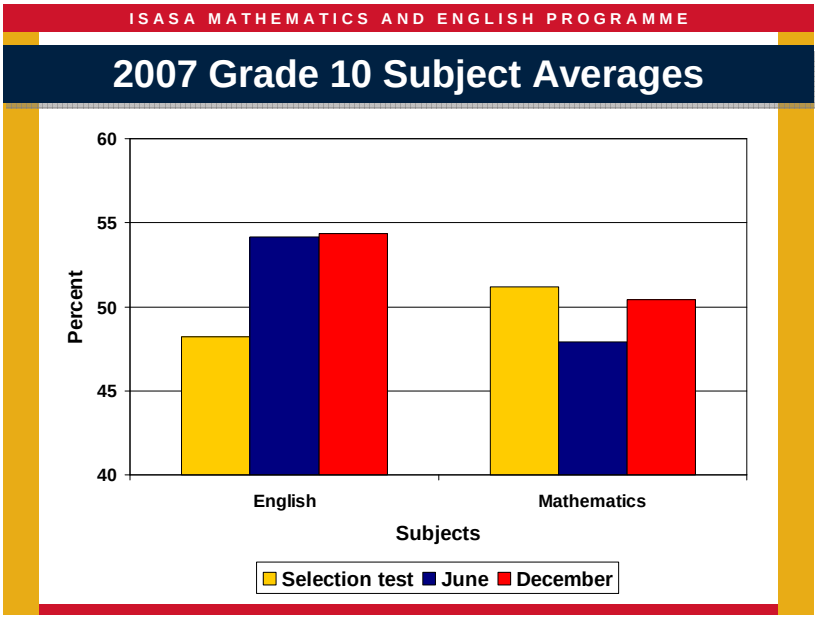
**End-project testing**
The final evaluation of learner achievement will take place at the end each cohort's three years at school, using a repeat of baseline tests and the grade 12 examination results.

**Follow-up in higher education/job**
The evaluators will, in addition, track learners' study choices and progress in higher education or work for one year after they leave school.

## EVIDENCE OF SUCCESS TO DATE

1. **Learner performance** is tracked term by term and year by year.

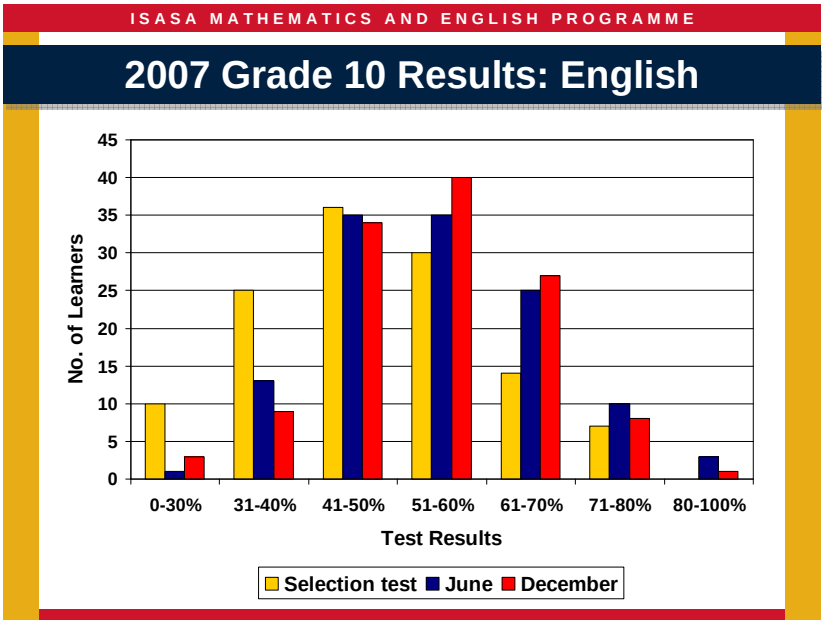
   In 2007, the Grade 10 intake (Cohort One) end-of-year results have been compared with the selection test results as shown in the graphs below:

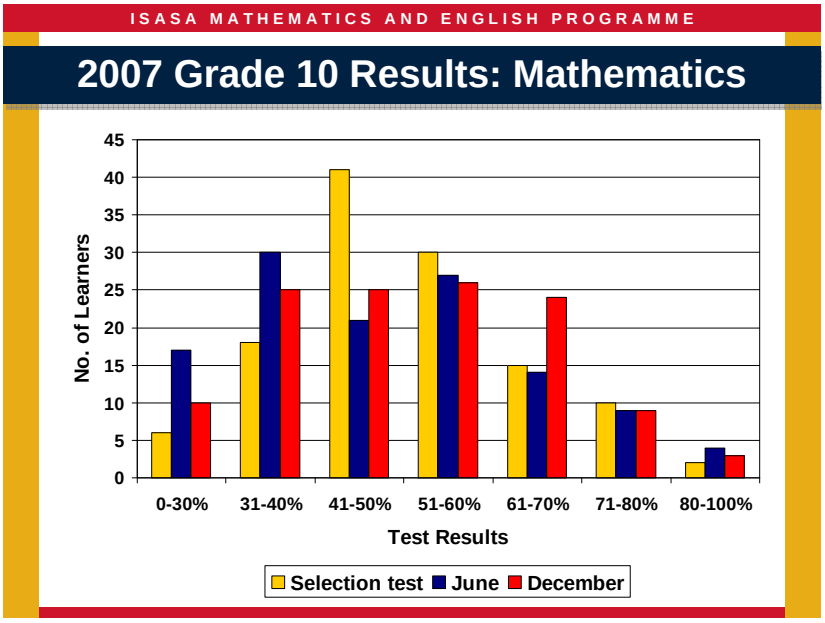



   Given the base from which the learners started, these marks are good. From the pilot programme, we know that in their first year learners' marks tend to drop in the mid-year school examinations when compared with the results of the selection tests. There are a number of factors that explain this. The selection tests and the school examinations test different things: potential and general mathematical ability as opposed to mastery of the grade 10 curriculum. Learners have had to adjust to strange and demanding school environments and lose some confidence. In addition, many of the schools write the IEB examinations and follow its challenging curriculum. As expected from experience in the pilot programme, by the end of the year, these marks had already increased, especially in mathematics. In subsequent years the improvement continues.

   In 2007, however, there was also another key factor at work: the teacher strike which disrupted classes and delayed exams. This affected the mathematics results, in particular, because learners need to practice mathematical skills every day to stay mentally fit, and most of them wrote the examinations after a four- or even five-week break. English on the other hand is not a competence that you quickly lose.

   There were a few failures, and these learners have been advised that their scholarships have been withdrawn.




From these graphs above it is clear that learners' results covered the full range of poor to very good. Indeed, some achieved outstanding academic results: one learner was top of the class (Prestige, in Hammanskraal, an IEB school).

2. **General all-round participation and achievement in extra-mural activities** is also monitored by both mentors and the evaluators. Some learners have participated very meaningfully in cultural, sporting and outreach activities.

## LESSONS LEARNT

Although the Programme has not yet run its full term, nor has there yet been a formal evaluation report, ongoing monitoring of the Programme has already produced some valuable lessons:

### Selection

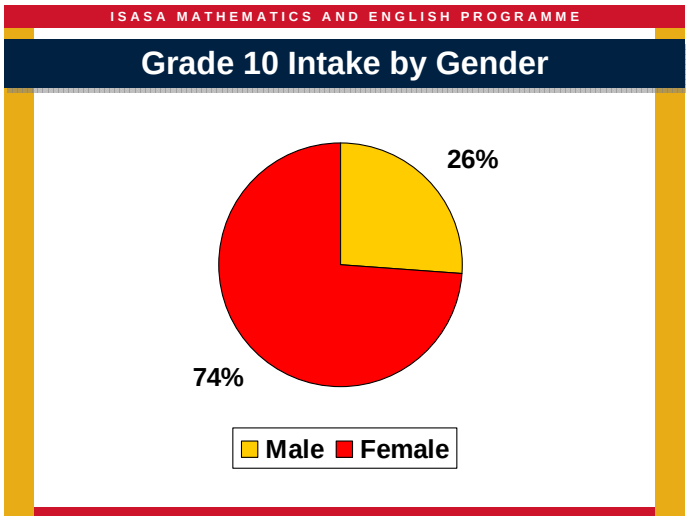
1. Identification of potential learners by schools at regional level is a valuable recruitment strategy. Open national advertisements did not yield commensurate returns; targeted identification processes are more effective.

2. The use of a combination of diagnostic and achievement tests and interviews is most effective in yielding a group with a high-level of potential and ability.

3. Sufficient lead time is essential to promote the Programme among ISASA schools, especially the high-fee schools. This process requires effort and engagement with these schools. The process of enrolling them in the Programme has to start early in the year, as most schools tend to have already accepted a full complement of learners later in the year.

4. Careful matching of learner to school environment is essential to ensure the smoothest transition.

5. Females predominate among selected learners, as shown in the 2008 Grade 10 intake:




### Schools

6. The financial stability, infrastructure and resources of the critical hub schools around which the whole Programme is centred must be secured. Both Sekolo sa Borokgo and the LEAP schools have required additional learners with bursaries from the Programme to secure sufficient income to balance their budgets. In addition, where the hub schools bear the costs of co-ordinating the Programme activities for the satellite schools in the region, they need to be reimbursed accordingly.

7. A boarding school environment provides a highly supportive environment to support disadvantaged learners as it provides an English-rich experience, counteracts poor nutrition, frequent absence from school or late-coming, the lack of parental

understanding about the importance of study time, and limited work space in the home environment.

**Learners**

8. The emphasis on English for academic language proficiency is essential to ensure the development of concept formation and comprehension.

9. The Learner support programme adds great value to the Programme. The learner camps are especially valuable as an opportunity for tutors and mentors to observe pupils closely in an informal setting. Learners gain a sense of identity as part of a larger "special" group and the recipient of donor funding which reinforces their commitment and understanding of their responsibilities.

10. Dealing with social and emotional challenges of the problems of pupils is key. It has been found that a significant number of pupils have many negative factors to overcome and consequently are very vulnerable. Their home environments can impact negatively on progress and general security. As such, mentors in schools need to be alert to symptoms and share concerns with the Academic Co-ordinator. Rapid, sensitive and constructive problem-solving to address problem areas needs to be in place.

**Management**

11. Central co-ordination though regular national meetings is essential.

12. On-going communication and interaction with schools is vital for co-ordination, monitoring and relationship-building.

13. Bringing mentors and learners together nationally and regionally has forged significant programme identity and buy-in.

14. Professional development of in-school mentors has been a spin-off.

15. Extra targeted funding is needed for identified needs such as school uniforms, equipment for participation in sport and other extra mural activities, books and study materials and transport for learners who are day scholars.

## CONCLUSION

ISASA recognises the need to address the critical skills shortage facing South Africa and has developed the learner component of the Mathematics and English Programme as a means of improving the number and quality of passes of black learners in these key learning areas.

The Programme is based on the fact that independent schools have some of the best resources and expertise in mathematics, English and science in the country and want to contribute to the national effort. ISASA member schools have risen to the national challenge of increasing the pool of black school-leavers with high-level mathematical and English skills.

A desired outcome of the Programme is that the evaluation of the model of intervention will show it to be successful in terms of learner achievement and cost-effective for possible replication by donors and government in both the public and independent school sectors.

Urgent action for the sake of social and economic development of the country is essential but improving the life chances of individual learners is equally important. Disadvantaged black learners with potential must be given every chance for good education to fulfil their potential. In the words of one of the bursary-holders:

> *Thank you for giving me steps to a brighter future, keys to success. Thank you for recognising me out of a crowd, encouraging me to reach my goals and showing me that through perseverance and hard work I can achieve great things …*
>
> Aphiwe Zintle Mafunda

## REFERENCES


Schollar, E and Roberts, J *Meta-Evaluation of Intervention Projects in Mathematics, Science and Language 1998 – 2006* ISASA, August 2006

Taylor, N and Prinsloo, C *The Quality Learning Project: Lessons for High School Improvement in South Africa* JET, September 2005