



Schools  
Development  
Unit  
School of Education  
**Annual Report**  
2008







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# Chairperson's foreword

We have been producing published annual reports in the Schools Development Unit (SDU) since 2004. Each year we use this publication to explain what we do, advertise our successes and identify our failures. Our reports consistently make clear how busy and engaged the SDU is. Our plate for the last year was full and there are no indications that 2009 will be any different.

We are one of the largest school improvement agencies in the country: our staff complement is sizeable and we draw on a wide range of skills and capacities in the university.

We have a comprehensive suite of activities, including school-based work in mathematics and science, the delivery of courses, and extensive research. This work is by its very nature complex. Victories are often neutralised by factors and events that arrive with little warning. The major challenge in a field that is shaped by so many factors is how one keeps an initiative on track.

Our work in high schools with the Mathematics and Science Education Project (MSEP), for example, has been challenging. Despite having developed extensive plans for 2008, much of these had to be put on ice because our funding streams dried up. We, fortunately, have been able to turn that situation around. Our thanks go to all of those who made that possible.

In our Rural Education Project (REP), we have made great progress but also constantly have to check that we understand the challenges. Clearly this kind of work is never plain sailing, but are we making progress? The answer has to be an unequivocal 'yes'. We are slowly forging ahead in articulating the nature of the problem in our schools. We are beginning to understand and describe the relationship between what happens inside the school and outside it. We can start focusing on what we can control: what transpires in the classroom.

We continue to teach, which is, of course, what we are experts in. Descriptions in this report of our work with principals and teachers give an indication of how excited we are when teachers come to us as students.

We also continue to develop our testing capacity. We are now, we can say with pride, a premier testing agency in the country. We can design, conduct and analyse large-scale testing exercises of learner competence. Our logistical and analytic capacity in this regard is an important resource in the Western Cape and the country.

And while we do this testing for others, such as the Western Cape Education Department (WCED), we continue to learn a great deal from this work. It has provided us with key insights into the kind of intervention work that we do. On the basis of this understanding, we will soon be able to present ourselves as a one-stop shop that is able to handle problem diagnosis *and* solutions.

Lastly, this is the first full year of Dr Jonathan Clark's tenure as the director of the SDU. He has led the organisation with resolve and purpose. This is evident in the way that he has built on the platform of our previous director. He has our thanks, as do all the staff in the unit and the School of Education.

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Schools  
Development  
Unit

"We are one of the largest school improvement agencies in the country."



Professor Crain Soudien

Another busy and productive year for the SDU has drawn to a close. Enhancing teacher efficacy will always lie at the heart of the SDU's work. So it is not surprising that 2008 saw most of the unit's activities focused both at the 'chalk face' and in the lecture room.

- In the Rural Education Project (REP), we continued our extensive primary school intervention in 38 schools across the province.
- Through the 'Out of the box' environmental awareness programme (OOTB), we worked alongside primary school teachers on the delivery of a range of cross-curricula materials.
- At the secondary school level, in the pilot Zenex-Dinaledi English Language Teaching Programme, we took up the challenge of supporting nearly 70 Grade 10 and 11 teachers in 15 local schools.

Once again, we successfully administered a number of system-wide assessment exercises on behalf of the Western Cape Education Department (WCED). These exercises have an impressive scope and definitely showcase the unit's capacity to deliver on large-scale testing tenders. For instance, the execution of the Grade 3 Literacy and Numeracy tests saw us enter the classrooms of close to 1,000 primary schools across the province.

2008 also saw a significant expansion in the number of practising primary and secondary teachers enrolled in the six Advanced Certificates in Education (ACEs) offered by the SDU. More than 200 will move into their second year of part-time study with us in 2009.

A particularly exciting development has been the linking of theory and practice through the enrolment of teachers participating in REP in the Curriculum Leadership ACE.

The ACEs offer staff an invaluable opportunity to develop and deliver educational courses that uphold the high academic standards of the world-class institution to which we belong: the University of Cape Town (UCT). We are suitably proud of the reputation that we have built up in this area; this is reflected in the significant increase in 2009 enrolments.

A key feature of our modus operandi is collaboration with colleagues within and outside the university. The extensive network of organisations and individual educational specialists with whom we co-operate attests to this fact.

- Over the years, the SDU has prided itself on its involvement in a range of materials development projects. This year saw a continuation of our work on the *Maths for all* series of Mathematics and Mathematics Literacy textbooks.
- With colleagues in UCT's Department of Environmental & Geographical Science, a significant effort went into developing a package of teaching and learning materials covering the topic of climate change.
- During 2008, we ran a number of courses at the Cape Teaching and Leadership Institute (CTLI).

## Director's overview



Dr Jonathan Clark

"I believe that our dedicated and committed team of professionals is well placed to deliver on this promise into the future."

## Director's overview continued

The year was not without its disappointments, however. Chief among these were the funding constraints that led to the curtailing of operations of UCT's Mathematics and Science Education Project (MSEP), for which we were the key service provider. However, we are confident that sufficient funding has been secured to ensure that MSEP will prosper anew.

And it is to the future that one eye of the unit is always turned. In response to anticipated shifts in the state's model for teacher professional development, a considerable amount of time and effort went into developing the first in a range of short courses.

Four WCED-sponsored courses dealt with new topics in Grade 12 Mathematics; two dealt with topics in the Grade 12 Physical Sciences curriculum.

On the personnel front, 2008 saw a number of long-serving staff leave the unit: Cindy Fuller, our senior secretary, finance, left us to take up a post at UCT's Finance Department; in June we took leave of Clive Newman, the SDU's finance officer; and at the end of the year Andrew Kruger, our literacy discipline leader, and Linda le Roux, production manager, moved on. They all served the unit with distinction and we wish them well for the future. Yunus Omar, Catherine Jourdan and Mbuyiselo Manzi left after fairly short stints with us; they too will be missed.

We welcomed three new staff members: Sandra Adams (finance officer), Wadeah Fisher (ACE administration assistant) and Janine Rich (senior secretary, finance). On the administrative and financial front, a considerable amount of thought and effort has gone into refining the SDU's systems and procedures, in pursuit of a more efficient unit.

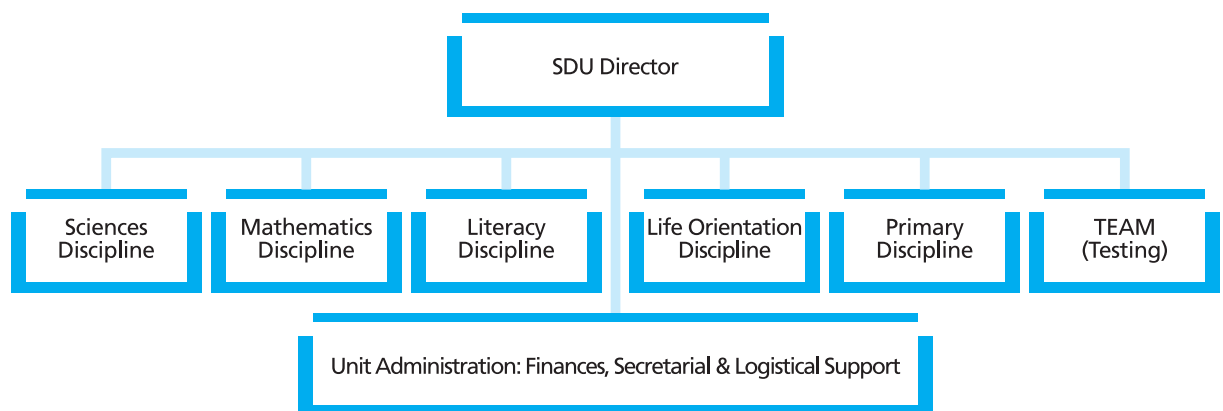
Because the SDU is largely self-funding, the pressure to maintain financial stability remains a challenge. We were most fortunate to end 2008 on a sound footing, with sufficient funds and guarantees of work for the year to come. We owe our funders a large vote of thanks.

The SDU is committed to strengthening and deepening its delivery capacity and to promoting excellence in all aspects of its work. Our objective is to deliver work that is at all times research bound, developmental and critically reflective in nature.

I believe that our dedicated and committed team of professionals is well placed to deliver on this promise into the future.

## Operational structure

The SDU is an integral part of the university's School of Education. In order to enhance the functionality of the SDU, a decision was made to restructure the unit in 2008. The new operational structure is depicted below.



The discipline leaders, who also fulfil an academic leadership role, undertake the line management of the various education specialists. In operational terms, the SDU functions as a matrix structure with a high level of co-ordination between staff, who are often involved in a number of different projects/programmes at the same time.





# Staff at the SDU



**Roger Mackay**  
Maths  
Mathematics education specialist



**Gary Powell**  
Maths  
ACE project manager



**Anthea Roberts**  
Maths  
Mathematics discipline leader



**Emmanuel Mushayikwa**  
MSEP  
MSEP project manager



**Diane Hendricks**  
Primary  
Mathematics education specialist



**Cally Kühne**  
Primary  
Primary discipline leader



**Tami Mhlati**  
Primary  
Education specialist



**Zonia Jooste**  
Primary  
Mathematics education specialist



**Norman Davies**  
Science  
Science discipline leader



**Sandra Adams**  
Finance officer



**Wadeah Fisher**  
Courses administrator



**Janine Rich**  
Finance secretary



**Gail September**  
Office manager



**Clive Newman**  
Finance manager



**Linda le Roux**  
Materials production



**Catherine Jourdan**  
Projects administrator



**Jonathan Clark**  
SDU director



**Achmat Adams**  
Life orientation  
Life orientation discipline leader





**Gilbert Dolo**  
Science  
Science education specialist



**Nomvuyo Mgoqi**  
Science  
Science education specialist



**Andrew Petersen**  
Science  
Science education specialist



**Hayley Eyssen**  
TEAM  
Administrative research assistant



**Cynthia Fakudze**  
TEAM  
TEAM Project manager



**JC Fortuin**  
TEAM  
Administrative research assistant



**Lude Galo**  
TEAM  
Administrative research assistant



**Owen Kiewietz**  
TEAM  
Administrative research assistant



**Ferial Parker**  
Life orientation  
Life orientation education specialist



**Andrew Kruger**  
Literacy  
Literacy discipline leader



**Marlene Esau**  
Literacy  
Language education specialist



**Thembeka Mqambeli**  
Literacy  
Language education specialist



**Nalini Parsotam**  
Literacy  
Language education specialist



**Kaashief Hassan**  
Maths  
Mathematics education specialist



**Yusuf Johnson**  
Maths  
Mathematics education specialist

# School-based work

## Maths and Science Education Project (MSEP)

The main activity of MSEP in 2008 was **fund-raising**, to raise money to support the project's ambitious activities to 2012.

In February 2008, the MSEP board requested that the executive committee make a proposal about its future. The board agreed to keep MSEP going and recommended that the vice-chancellor provide financial support to cover outstanding expenses from 2007.

In 2007, the MSEP project manager had contacted the Royal Netherlands Embassy (RNE) with a proposal for funding MSEP. The embassy had responded positively by inviting MSEP to join a consortium of nine projects in its Western Cape initiative.

- Stellenbosch University was appointed the fundholder in April.
- A due diligence financial process was started by the fundholder in May and completed in June.
- A composite consortium proposal was developed and submitted to the RNE in July.
- Dr Wilmot James was elected the steering committee chairperson in September 2008.
- Mr Mike Erskine was appointed the consortium's programme manager and took office in November.
- Memoranda of understanding were signed by the fundholder and the partner organisations in December.
- The contract between the fundholder and MSEP was also signed in December.

In line with the consortium agreement, aimed at rationalising and maximising the impact of the consortium intervention, MSEP agreed with the University of Stellenbosch's IMSTUS to review participant schools. To this end, several meetings were held between MSEP and IMSTUS, and between MSEP, IMSTUS and the WCED. As a result, MSEP and IMSTUS were able to identify schools in areas that were not overlapping.

Three of the original five MSEP schools re-confirmed their continued interest in MSEP and so remain in the project. Four other schools were invited to apply and two of these were selected to be part of the project. The five schools now involved in the project are Harry Gwala (Khayelitsha), Spine Road (Mitchell's Plain), Sophumelela (Phillippi), Rhodes (Lower Mowbray) and Thandokhulu (Mowbray). By December, memoranda of understanding were signed between these schools and MSEP.

"During the course of the year, the disciplines (science and mathematics) held meetings to understand the challenges facing teachers in MSEP schools."



The low level of funding for MSEP in 2008 gave the project team an opportunity to **reflect on the project model** and to redesign and re-establish its thrust. Our analysis, based in part on the matric results, revealed the need to focus on teachers rather than on learners. Teacher efficacy in teaching and curriculum management became the important focal points for MSEP's intervention in the second phase of the project. MSEP therefore became a strongly school-based support project.



During the course of the year, the disciplines (science and mathematics) held meetings to understand the challenges facing teachers in MSEP schools. These meetings culminated in the development of the new **research agenda** that is discipline specific and a new **logic model** linked to the agenda. This new approach was informed by video and classroom observations from the first phase of MSEP.

**Implementation and intervention plans** were developed to meet the requirements of the research agenda and logic model.

**MSEP co-hosted activities with the WCED and the education districts:**

- Two mathematics seminars were held in the first and second semesters. The first seminar was held at Sophumelela in March and the second seminar was held at Rhodes in April. Teachers from surrounding schools were invited to this seminar. Twenty-five teachers attended.
- One science seminar was held in May. The seminar was organised in conjunction with the East District. Forty teachers attended.

In future, MSEP will involve the districts when planning workshops and teacher seminars to ensure that as many teachers as possible benefit from these activities.





# School-based work

## Rural Education Project (REP)

REP is a primary school numeracy and literacy improvement initiative, which is supported by UCT, the WCED, the Claude Leon Foundation and the Foschini Group. This project has received positive coverage in conferences and periodicals.

The project began in November 2005 and set out to improve the quality of teaching and learning in 38 primary schools in the rural districts of Eden Karoo, Breede River, Overberg, Cape Winelands and West Coast. REP is set against a backdrop of poor numeracy and literacy performance, as indicated on national systemic and WCED Grade 3 and 6 diagnostic tests (2002 to 2008).

REP aims, firstly, to **develop a range of differentiated, sustainable strategies** to assist rural schools and clusters of schools to identify the contextual and professional factors related to poor performance, and to **mediate the Grade 3 and 6 results** with schools and districts.

Secondly, the project will **contribute to knowledge on rural education** and deepen our understanding of school practices, programmes and systems. This is done in order to inform policy and programmes focused on teacher practice and learner performance.

The model of intervention includes strategic and participatory planning with all stakeholders, to support curriculum advisers, teachers and principals to improve learner performance and classroom practice through whole school development and curriculum planning. This includes co-teaching with teachers in classrooms, as well as site follow-up meetings with teachers attending a university-accredited course.

A highlight of 2008 was the successful **REP conference** held at Houw Hoek Inn (near Hermanus) in August. This was an opportunity for all stakeholders to network and share ideas in overcoming the challenges facing rural education. Among the issues raised were teacher capacity, content and pedagogic knowledge, and how to bridge the gap between policy, theory and practice. Importantly, the conference placed teachers at the centre of the debates and gave them a platform to respond to the issues raised. This event was attended by a broad range of participants, such as the project trustees from the Claude Leon Foundation and the Foschini Group, members of the WCED head office, education district directors, curriculum managers, curriculum advisers, circuit managers, teachers, principals, the SDU project team and director, and guests from other organisations.

As part of the project's dissemination plans, a paper was presented at the **Kenton Education Association Conference**, hosted by the University of the Witwatersrand in October.



## Out of the box (OOTB)

This project, sponsored by the Old Mutual Foundation, concluded in 2008. The project focused on environmental education using a resource 'box' for integration of learning areas, school projects and joint school-community programmes. In 2008, our implementation strategy supported our original vision for the project: empowered teachers' use of the 'box' to develop innovative ideas for school programmes, activities and projects, and come up with creative learning programmes, work schedules and lesson plans. In total, **242 teachers and 10,982 learners were involved in the project in 2008**. A wrap-up event – an environmental open day – will be held in April 2009.

We were fortunate that six of the 11 schools in the project in 2007 had made considerable progress into 2008 and could continue independently with minimal support from the SDU. This allowed **10 new schools to join the project**. While we continued to work in the same districts, the distribution of schools included 10 in the Overberg, four in the West Coast-Winelands region and one Helderberg school.

To accommodate new teachers in the project, **six cluster workshops** (regionally based) focused on introducing them to the 'box' items. Teachers engaged enthusiastically with the resources and generated wonderful ideas for integrated programmes and activities at their schools. Those who attended were encouraged to share their experiences with other educators in scaled-down workshops at their schools.

**Three combined workshops** were delivered, where teachers from across the districts traveled to the premises of an environmental organisation. The organisations that hosted and partly delivered these workshops were carefully chosen, since our aim was to raise awareness of current global environmental concerns. The following sites were visited:

- Iziko South African Museum and Planetarium in May
- Kirstenbosch National Botanical Gardens in July
- Two Oceans Aquarium in October

To support teachers with implementation, **45 school visits** were completed in 2008. We were impressed with the progress at some of the new schools. We observed innovative lessons and co-taught and demo-taught in some classes where new teachers were still uncertain and fearful. It is encouraging to see how some teachers integrate OOTB with other programmes and in other learning areas at their schools. Unfortunately, due to the closure of the project by the funder, no new boxes were forthcoming. The shortage of boxes became a challenge because teachers found it difficult to share resources, especially in large classes.



Another important component of the project – **the key teacher programme** – continued in 2008. These teachers have been in the project since its inception and played pivotal roles in their schools, by creating environmental awareness that leads to actions such as beautifying school premises and establishing sustainable food gardens. These teachers are currently writing up their schools' contributions for an informative environmental booklet that will be launched at the project's concluding event.

It has been our privilege to work with schools in the project over the last few years. We express our sincere **appreciation for their commitment to the project** and its objectives.



# School-based work

The Zenex-Dinaledi English Language Teaching (ELT) Further Education and Training (FET) Programme

This two-year Zenex-funded programme was developed by Rhodes University's Institute for the Study of English in Africa (ISEA) for piloting with Grade 10 and 11 English (First Additional Language) teachers in selected Dinaledi schools across four provinces. The SDU is privileged to be **responsible for implementation in 15 schools** in the Western Cape.

This pilot programme has the active support of the national Department of Education. It aims to address the following concern: the majority of South African learners have **low levels of competence in English** as the language of learning and teaching (LOLT), contributing to poor performance in mathematics and the sciences.

The key delivery elements of the programme are:

- Sixty hours of teacher professional development focusing on subject and pedagogic knowledge
- Cluster workshops addressing teachers' specific needs arising out of their implementation of the programme
- Classroom support visits

The programme provides teachers with **a range of teaching and learning materials**. This includes copies for each learner of the *Keys to English* textbook (published by Heinemann) and teachers' guides, together with prescribed literature texts, the Principles of English Language Teaching (PELT) materials and work schedules developed by ISEA. An important element is the extensive reading programme. Each participating school is provided with **starter classroom libraries** to encourage independent reading by learners.

During 2008, almost **300 classroom observations** and a further **60 general school visits** were undertaken by SDU staff. Our experience of working alongside teachers at the chalk face has certainly highlighted the challenges they face as they seek to develop the English communicative competencies of their learners. It has also revealed the extent to which English is only nominally the LOLT in most township classrooms.

"The SDU is privileged to be responsible for implementation in 15 schools in the Western Cape."





# Courses

## Advanced Certificate in Education (ACE)

This year saw a total of **217 students registering across six ACE programmes**. These are part of UCT's suite of accredited courses, with qualifications specifically designed to educate and upskill teachers across all phases of schooling.

These two-year, part-time programmes are:

- Literacy, Numeracy and Curriculum Leadership in the Foundation Phase
- Language, Mathematics and Curriculum Leadership in the Intermediate Phase
- GET Mathematics
- GET Natural Sciences
- FET Mathematics
- FET Mathematical Literacy

The **Curriculum Leadership** programmes commenced during the March-April school holiday with the first group of 70 rural primary school teachers. These studies, funded by the WCED, include classroom support that runs in conjunction with the Rural Education Project (REP). Lecturers provide site support to 58 teachers from 35 REP schools and to three curriculum advisers.

The **GET Mathematics** and **GET Natural Sciences** programmes together form the MST ACE programme. This programme is funded by the national Department of Education (DoE). UCT is working collaboratively with the University of the Western Cape (UWC) and the Cape Peninsula University of Technology (CPUT) to deliver this programme to 153 rural and urban teachers in the Western Cape. UCT is the lead agent in this collaboration. Teachers are also supported by two classroom visits per year. The DoE continues to pay regular visits to assess the quality of the programme.

Teachers on the **FET Mathematical Literacy** programme received bursaries from the WCED or Eskom. This programme continues to facilitate a high level of re-skilling in this new subject.

The **FET Mathematics** programme welcomed 20 new students, who received bursaries from the WCED, Eskom or UCT's School of Education. The teachers on this programme were privileged to experience a series of prominent guest lecturers. This enhanced their perspective of the discipline at senior school level.

The development and planning for the new **FET Life Orientation** programme took place during 2008 for implementation from January 2009.



# Courses

## Short course programme

The short course programme offers UCT-accredited courses to teachers and other role players in the education sector. A typical course runs for two hours a week for three weeks. These courses are designed within the unit standards framework so that it is possible to allocate professional development points to each course.

During the first semester of 2008, the SDU launched **pilot programme courses for teachers of mathematics and the sciences**. Funding for the pilot was provided by the WCED, whom we wish to acknowledge for creating this opportunity for teachers from previously disadvantaged schools. Thirty-three teachers benefited from the pilot, with many of these teachers registering for more than one course.

The four courses presented in the pilot were:

- Financial Mathematics (for Mathematical Literacy teachers)
- Transformations (for FET Mathematics teachers)
- Mechanical Properties (for FET Physical Science teachers)
- Industrial Chemistry (for FET Physical Science teachers)

The Financial Mathematics course was presented twice – once on campus to a group of teachers from urban schools, later in Worcester to teachers from rural schools.

The pilot was a valuable learning experience for the SDU and confirmed the **potential of this vehicle for in-service training**, as these courses demand less dedicated time from teachers than other types of courses and are versatile enough to meet teacher needs as they arise.

In the second semester, much time was dedicated to marketing: forays were made into the FET college sector. A series of information-gathering meetings was set up with Northlink FET College and False Bay FET College to assess the needs of the sector. Out of these discussions, course proposals were developed for two courses:

- Classroom Management (for FET college lecturers)
- Curriculum and Classroom Management (for FET college Mathematics and Mathematical Literacy lecturers)

The two course proposals were presented to college focus group meetings in Stellenbosch and Athlone by the relevant SDU teams.

It is encouraging that awareness of the programme is growing. The SDU has been approached from various quarters to **develop course proposals** to meet particular needs. One such course has been developed for Mathematical Literacy curriculum advisers from the Free State Department of Education. This course will be presented in early 2009.

Furthermore, this programme plays a complementary role alongside other SDU projects. In 2009, MSEP will provide an opportunity for the development of a suite of short courses to meet needs identified in the areas of mathematics, the sciences and life orientation.



## Climate Change Education and Awareness Programme (CChEAP)

This project, which was an **environmental science education flagship project** for the Western Cape government in 2008, was the result of collaboration between the Department of Environmental Affairs and Development Planning (DEADP), the WCED and the SDU. In 2007, the DEADP accepted a proposal from the SDU to develop a package of materials on climate change, structured around global concerns stemming from the scientific community's emergent understanding of climate change and its threats to human society and existence.

We set out to **produce a package** that could be used by teachers in a wide variety of classroom conditions. The package featured a range of teaching and learning resources, including a music kit, DVDs, task cards, posters and a teacher resource book. There were two sets of task cards: thematic cards that dealt with the science content in a social context; and cards for life orientation and arts and culture, which allowed integration of the topic into other learning areas in the school curriculum.



Part of the proposal was for training: 43 teachers attended a **four-day workshop on climate change**, held in October 2008. Following an opening address by Minister Uys and a keynote address by Peter Johnston of the Climate Study Group at UCT, workshops introduced teachers to the themes of climate change – earth systems, energy, oceans, clean water, extreme weather, food security, palaeo-climatology, biodiversity and food security. These themes were interlaced with arts and culture, life orientation and an introduction to the resource pack.

**Teachers left feeling confident** that they had the ideas and materials needed to implement this new and vital topic in the school curriculum, in flexible and integrated ways:

- If they have interconnectivity, extensive lists of Web site addresses help teachers collect information.
- If they have computers with a hub, learners can access electronic information pages and video clips off the DVD. The DVD also contains an electronic version of the other print materials in the package.
- If they have a photocopier, teachers can copy task cards for learners to work in groups or alone.
- The posters can be used as visual aids and materials for learner work.
- The music kit can be used to extend the topic into arts and culture lessons.

Some of the attending teachers will be visited by the SDU in 2009, to enable us to **monitor and facilitate implementation of the materials**. Further workshops are planned for 2009 and the materials will be translated into Afrikaans.



# Courses

## Cape Teaching and Leadership Institute (CTLI)

The CTLI is an in-service teacher training unit of the WCED, located in Kuilsrivier at the premises of the former Western Cape College of Education. The institute's main aim is to enhance the professional development of teachers, especially in managing and implementing the new school curriculum.

Over the past seven years, the SDU has been involved in offering professional development courses at the CTLI. In 2008, the following three courses were completed:

- Intermediate Phase Natural Sciences – a single four-week course

A WCED tender won by the SDU gave us an opportunity to present the Intermediate Phase Natural Sciences course at the CTLI for the first time. Staff designed a comprehensive spiral curriculum that built up teacher skills over five iterations of learning programme design and implementation.

Various presenters, including staff from the Primary Science Programme, ensured that the teachers would experience a range of inputs over the four weeks of the course. One teacher was visited in each of the districts to monitor the impact of the training.

- Intermediate Phase Language – two four-week courses

SDU staff also taught on the Intermediate Phase Language course. A direct focus of our literacy/language work is exploring the issues related to the LOLT in the Foundation Phase, particularly isiXhosa as the medium of instruction.

- Grade 8 Reading – two two-week courses

This course tackles a different aspect of literacy, namely the capacity of teachers to help learners to critically engage in written text. The course explores different genres, methods of interpretation and their impact on teaching and learning.

In total, around 250 practising teachers participated in these courses.

## PGCE Physical Sciences Method Course

Following the sudden death of Prof Rochford of the School of Education, the SDU took over the delivery of this course, which was then convened by Norman Davies, the SDU's science discipline leader. It had input from six SDU staff, including Drs Clark, Fakudze and Mushayikwa.

The course comprised modules in lesson planning, worksheet design, practical work, writing in science, learning science and assessing science learning. Assessment was through a number of home tasks, assignments linked to each teaching practice, and a research report on a topic of interest to the student. As there were only two students, they presented their final papers at a seminar attended by lecturers and the external examiner, where a fruitful discussion was had.

“Over the past seven years, the SDU has been involved in offering professional development courses at the CTLI.”



# The SDU at work



# Research

## Grade 6 testing

Numeracy and Literacy Grade 6 tests were conducted throughout the Western Cape in October and November 2007. The tests were as a result of a tender awarded to the SDU by the WCED. This project was divided into three components that carried over into 2008:

- A **learner testing report** was written based on the results of the 2007 testing and submitted to the WCED to be distributed to the various schools.
- In 2006 and 2007, the WCED, on the advice of a task team, initiated a process for promoting the use of mother-tongue instruction in its schools. The SDU was given the task of undertaking **language transformation research** and reporting on the effects of language (home language and test language) on learner performance as reflected in the Grade 6 results.
- A **teacher research report** was written based on an assessment of 1,506 teachers' analyses of learner errors in the Grade 6 learner attainment tests conducted in 2007. The teachers were drawn from all seven districts. The largest number, 373, came from the Overberg and the smallest, 124, from the South district.

## Grade 4 testing

A baseline study of the state of Literacy and Numeracy in NQ1, NQ2 and NQ3 was conducted across the Western Cape. This baseline served as a point of reference for the evaluation of the Quality, Improvement, Development, Support and Upliftment Programme (QIDS-UP). The Numeracy and Literacy tests were administered to 522 primary schools in the province: 31,724 Grade 4 learners were tested in 1,013 classrooms. Testing took place from mid-February to mid-March. One provincial and seven district reports were written and submitted to the WCED in August 2008.

## Grade 3 item bank

The SDU was involved in the construction of item banks for the WCED. A team of SDU education specialists and lecturers from CPUT and US designed **four Numeracy tests**. The Literacy Forum comprising SDU education specialists and lecturers from CPUT and the Institute of Mathematics and Science Teaching at the University of Stellenbosch (IMSTUS) constructed **three Literacy tests**. The tests were structured using the WCED 2002 frameworks. The test designers worked on feedback suggestions from WCED curriculum advisers. All the tests were translated into isiXhosa and Afrikaans.

## Christel House testing

The SDU was tasked with designing diagnostic **Grade 3 and 6 Language and Numeracy tests** for Christel House, a private school. These followed a similar framework to that of the WCED tests. A report on the results of the Grade 3 and Grade 6 tests was submitted indicating problem areas. **Grade 9 Language and Mathematics tests** were designed based on the WCED Grade 9 framework, with a report submitted indicating problem areas.





## Grade 9 testing

Mathematics and Languages Grade 9 tests were conducted throughout the Western Cape in April 2008. The tests were developed by the SDU as a result of a tender that was awarded to the unit by the WCED in December 2007. The purpose of this tender was to assess mathematical and language proficiency, to identify potential and to direct future subject choice.

The tests, grounded in the Learning Outcomes and Assessment Standards of the previous year (Grade 8), were written by all Grade 9 learners in the province. In Mathematics, the results of 60,033 learners were reported on; and in Languages, 61,371 learners. A total of **524 schools participated** in these tests. Each learner received a certificate and a learner report. Each school received a school profile report.

The University of Pretoria (UP) was tasked with **benchmarking** the results against national and international standards.

As part of the preparation for the second round of testing in 2009, **pilot tests** were constructed and administered in nine schools, representative of the spectrum of schools in the Western Cape. The pilot test results were captured and data was sent to UP for analysis. A report-back session on the pilot results was conducted towards the end of November and this informed the setting of the 2009 Grade 9 tests.

## CHEC / WCED project

The Cape Higher Education Consortium (CHEC) requested independent researcher Dr Cheryl Reeves to carry out a study on educator supply and demand in the Western Cape. Some members of the SDU's testing, evaluation, assessment and monitoring division (TEAM) were co-opted to assist in the administration of the project.

## Grade 3 testing

Similar in scope to the Grade 6 testing of 2007, Numeracy and Literacy tests were conducted throughout the Western Cape in late October and early November. Testing was administered to 72,450 Grade 3 learners in 1,061 schools within the eight districts of the WCED. More than 230 field workers were deployed to the various schools after training sessions that took place in four regions. The Numeracy and Literacy scripts were then marked by 232 trained markers and data captured electronically by UCT's Alternative Admissions Research Project in collaboration with the Department of Statistical Sciences. A learner report will be submitted to the WCED in February 2009.



# Materials development

The SDU provided materials for various publications during 2008.

## Maths for all

The *Maths for all* textbook series was developed by the SDU and its predecessor, the Maths Education Project (MEP). The series spans Grades 1 to 12. 2008 saw the revision of the Intermediate Phase (Grades 4 to 6) books, to ensure alignment with changes in the school curriculum.

## Learning Channel

In 2007, the mathematics team at the SDU was commissioned by the Learning Channel to develop a set of materials from our *Maths for all* and *Maths Literacy for all* Grade 11 and 12 titles. These materials took the form of weekly inserts which focused on selected content in the respective curricula. They appeared as part of the Matric Matters insert in regional newspapers and as part of the Matric Herald insert in community newspapers throughout 2008. During the year, we were responsible for checking these inserts on a weekly basis and occasionally provided additional material.

## FET Life Sciences assessment exemplars

As part of a WCED tender, the SDU prepared a battery of assessment tasks for teachers to use. These tasks met the specifications of the assessment guidelines published in January 2008. They were designed as exemplars for teachers of control tests, practical tasks, research projects and assignments. The resulting 160-page document was translated into Afrikaans from English. Documents in both languages were then distributed to all high schools in the province.

## FET Physical Sciences Grade 12 new topics

The SDU has been preparing teacher notes, at undergraduate level, for the new topics in Grade 12. New topics include industrial chemistry, mechanical properties, organic macro-molecules, electronics, lasers, the Doppler effect and motion in 2D. The notes will be translated into Afrikaans. Some topics were written based on our experiences of teaching short courses or of running MSEP workshops. These topics can therefore be used successfully in such programmes in the future.



# Budget matters

The SDU's overall operating budget for the year amounted to just over R22 million.

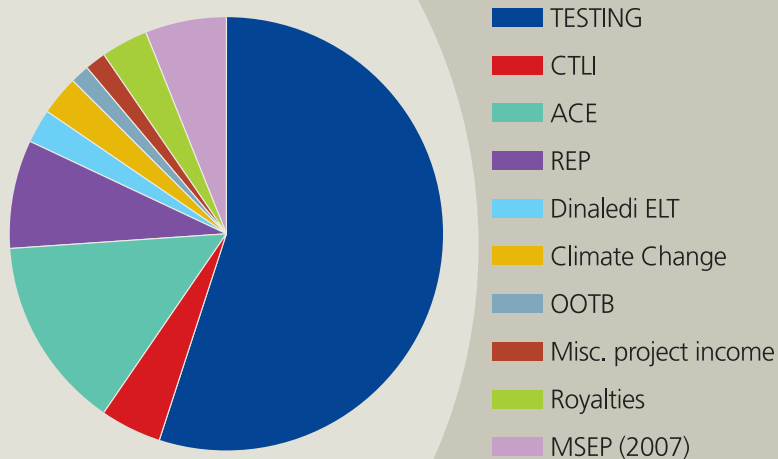
The direct operating costs of the SDU (staff salaries, office overheads etc.) came to just over R6,6 million in 2008; the remaining monies were spent on the operations of the various projects. In particular, the large-scale testing work undertaken on behalf of the WCED accounted for a substantial portion (just over half) of the total operational spend.

The SDU is most grateful to the following funders and clients who have supported us financially over the past year:

TEAM (testing)	WCED
CTLI courses	WCED
ACE courses	National Department of Education; WCED; Eskom
REP	Claude Leon Foundation; Foschini Group CSI
Zenex-Dinaledi ELT	Zenex Foundation
Climate Change	DEADP
OOTB	Old Mutual Foundation
Miscellaneous projects	Learning Channel; WCED
Royalties	Macmillan South Africa

The SDU would also like to acknowledge the role which UCT plays in supporting the unit financially. Two posts, the director and finance officer, are fully funded by the university and the unit is given a generous allocation of office space in UCT's Hoerikwaggo Building.

SDU 2008 Income





# Partnerships 2008

## Department of Education and Western Cape Department of Education

- The SDU is an important service provider in the Literacy and Numeracy Strategy (2006 – 2016) of the WCED
- WCED Dinaledi Programme

## Professional bodies

- The Association for Mathematics Education in South Africa (AMESA)
- The SA Association of Science and Technology Educators (SAASTE)
- The SA Association of Research into Mathematics, Science and Technology Education (SAARMSTE)
- Reading Association of South Africa (RASA)
- South African Women In Science and Engineering (SAWISE)

## Universities and colleges

- UCT: Faculty of Humanities, Faculty of Science, Centre for Higher Education Development (CHED), School of Education, Department of Statistical Sciences, Department of Physics, Department of Chemistry, Department of Mathematics, Department of Chemical Engineering, Department of Environmental and Geographical Sciences, Department of Geology, Alternative Admissions Research Project (AARP), Project for the Study of Alternative Education in South Africa (PRAESA), Centre for Open Learning (COL), Career Development Centre (CDC), UCT Recruitment and Admissions Office, Active Science
- Cape Peninsula University of Technology
- University of Pretoria
- University of Stellenbosch: IMSTUS, RUMEUS
- University of the Western Cape: SSME, Africa Genome Project
- Utrecht University, Netherlands: Freudenthal Institute

## Business and funding partners

- Afrox Foundation
- Claude Leon Foundation
- Colorado Council for the International Reading Association
- DG Murray Trust
- Eskom
- Foschini Group
- Macmillan Publishers
- MNET Learning Channel
- MSEP UCT
- Murray and Roberts
- Nasou Via Africa Publishers
- National Business Initiative
- Old Mutual
- South Africa-Netherlands Research Alternatives in Development (SANPAD)
- Standard Bank
- Toyota
- Upstream Training Trust
- Zenex Foundation

## Other

- Early Learning Resource Unit (ELRU)
- Elgin Learning Foundation
- EQUIP
- Extra-mural Education Project (EMEP)
- Generation of Leaders Discovered (GOLD)
- Globe Learning Communities
- Inset Providers Coalition
- Ithemba Labs
- Joint Education Trust
- Kirstenbosch National Botanical Gardens
- Ort-Tech
- Primary Science Programme
- Protec
- Science And Industrial Leadership Initiative (SAILI)
- Scifest Africa
- South African Astronomical Observatory
- South African National Museum (Iziko Museums)
- Two Oceans Aquarium
- Wildlife and Environment Society of South Africa (WESSA)
- West Coast Fossil Park

# Publications, conferences, service activities

SDU staff produced the following publications and conference presentations during the year, and were involved in the listed service activities.

## Publications

Fakudze, C. & Rollnick, M. (2008). Language, Culture, Ontological Assumptions, Epistemological Beliefs, and Knowledge about Nature and Naturally Occurring Events: Southern African Perspective. *L1—Educational Studies in Language and Literature*, 8 (1). 69-94. Retrieved from <http://l1.publicationarchive.com/public?fn=enter&repository=1&article=>

Mushayikwa, E. & Lubben, F. (2008). Self-directed professional development: hope for teachers working in deprived environments. *Teaching and Teacher Education*, 25 (3). 375-382.

## Conference presentations

Clark, J., Case, J., Davies, N., Sheridan, G. & Toerien, R. (2008). *'Struggling up Mount Improbable' – a cautionary (implementation) tale of a Vision II Scientific Literacy Curriculum in South Africa*. Paper presented at the Canadian Society for the Study of Education's Annual Conference, 31 May – 3 June, University of British Columbia, Vancouver.

Davies, N. & Toerien, R. (2008). *Reflections on the topic 'Chemical systems' in Grade 12 Physical Sciences*. In Proceedings of the 4th Biennial Conference of the South African Association of Science and Technology Educators. 1 – 4 July, Wits University, Johannesburg.

Davis, Z. & Johnson, Y. (2008). *Initial remarks on the functioning of ground in the constitution of school mathematics, with reference to the teaching and learning of mathematics in five working class secondary schools in the Western Cape Province of South Africa*. In M. V. Polaki, T. Mokuku, & T. Nyabanyaba, (eds.) Proceedings of the 16th Conference of the South African Association for Research in Mathematics, Science and Technology Education (SAARMSTE). Maseru, Lesotho, Volume 1.

Esau, M., Mqambeli, T. & Parsotam, N. (2008). *Overview of the Zenex-Dinaledi English First Additional Language Pilot Programme*. Paper presented at the Reading Association South Africa Conference, 7 – 9 November, University of Natal.

Hendricks, D. (2008). *The Development of a Framework for Teaching Reading and Writing in the lower Primary grades*. Paper presented at the Department of Education Foundation Phase Conference, 30 September, Mokopane, Limpopo.

Kühne, C. (2008). *A Learning Pathway for Number: A Trajectory for Early Number Development*. Paper presented at the Department of Education Foundation Phase Conference, 30 September, Mokopane, Limpopo.

Meyer, S. & Kühne, C. (2008). *Grappling with change: Case studies from the Rural Education Project*. Paper presented at the Kanton Education Conference, 23 – 26 October, Magaliesberg.

Mgoqi, N. (2008). *Teaching genetics to Advanced Certificate in Education (ACE) students*. In Proceedings of the 4th Biennial Conference of the South African Association of Science and Technology Educators. 1 – 4 July, Wits University, Johannesburg.

Mushayikwa, E. & Lubben, F. (2008). *Self-directed professional development: Who pulls the strings?* In M. V. Polaki, T. Mokuku, & T. Nyabanyaba, (eds.) Proceedings of the 16th Conference of the South African Association for Research in Mathematics, Science and Technology Education (SAARMSTE). Maseru, Lesotho.

Petersen, A. (2008). *The implications of teacher in-service training for the new curriculum: Geology as a case study*. In Proceedings of the 4th Biennial Conference of the South African Association of Science and Technology Educators. 1 – 4 July, Wits University, Johannesburg.

Roberts, A. (2008). *Understanding the concept 'Equation': What do learners' errors reveal?* Snapshot accepted for presentation in M. V. Polaki, T. Mokuku, & T. Nyabanyaba, (eds.) Proceedings of the 16th Conference of the South African Association for Research in Mathematics, Science and Technology Education (SAARMSTE). Maseru, Lesotho.

## Service activities

Norman Davies. EXPO Chief Judge. Cape Town Region. Member, Committee for University Education in Science, UCT.

Gilbert Dolo. IKS Working Group, UWC.  
Kaashief Hassan. AMESA Executive Council Member.  
Yusuf Johnson. AMESA Executive Council Member.  
Cally Kühne. WCED Foundation Phase Committee.  
Nomvuyo Mgoqi. EXPO Judge. Cape Town Region.  
SAWISE local committee.

Andrew Petersen. Director, Soetwater Environmental Centre, Kommetjie.

Gary Powell. Vice President AMESA Western Cape.

# Abbreviations, acronyms and terms

AARP	Alternative Admissions Research Project
ACE	Advanced Certificate in Education
CCHEAP	Climate Change Education and Awareness Programme
CHEC	Cape Higher Education Consortium
CPUT	Cape Peninsula University of Technology
CTLI	Cape Teaching and Leadership Institute
EDO	Education Development Office
EMDC	Education Management and Development Centre
DEADP	Department of Environmental Affairs and Development Planning
DoE	Department of Education
ELF	Elgin Learning Foundation
ELT	English Language Teaching
FET	Further Education Training Band (Grades 10 to 12)
GET	General Education Training Band (Grades R to 9)
IMSTUS	Institute for Mathematics and Science Teaching, at Stellenbosch University
ISEA	Institute for the Study of English in Africa, at Rhodes University
LOLT	Language of learning and teaching
MSEP	Mathematics and Science Education Project at the University of Cape Town
MST	Mathematics, science, technology
NQ	National Poverty Quintile
OOTB	Out of the box programme
PELT	Principles of English Language Teaching
QIDS-UP	Quality, Improvement, Development, Support and Upliftment Programme
REP	Rural Education Project
RNE	Royal Netherlands Embassy
RUMEUS	Research Unit for Mathematics Education at the University of Stellenbosch
SDU	Schools Development Unit
SSME	School of Science and Mathematics Education at the University of the Western Cape
TEAM	Testing, Evaluation, Assessment and Monitoring
UCT	University of Cape Town
UP	University of Pretoria
US	Stellenbosch University
UWC	University of the Western Cape
WCED	Western Cape Education Department

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