

Towards a framework for
improving academic support to
improve student success
in FET Colleges

4492

Human Sciences Research Council

May 2006

F



4492

**TOWARDS A FRAMEWORK FOR ORGANISING
ACADEMIC SUPPORT TO IMPROVE STUDENT SUCCESS
IN FET COLLEGES**

Report conceptualisation and writing
Cheryl Reeves

Literature reviewers
Chrissie Boughey
Judy Harris

Researchers and case study college reports
Carel Garisch
Angela Schaffer
Vanessa Taylor
Kathy Walters

Project Management
Glenda Kruss

Education, Science and Skills Development Research Programme
May 2006

CONTENTS

List of Tables, Figures, Appendices.....	iv
Acknowledgements.....	vi
Acronyms and abbreviations	vii
Executive summary	ix
Chapter 1: Introduction: Context, scope and aim.....	1
<i>PART 1: Perspectives from student academic support in the South African higher education and international FET college sectors</i>	
Chapter 2: Concerns, debates and approaches	12
Chapter 3: Lessons learnt in the South African context.....	32
Chapter 4: Practices and models.....	53
<i>PART 2: Student academic support case studies from the South African FET college sector</i>	
Chapter 5: Student support concerns and practices.....	87
Chapter 6: Models, resources and responsibilities.....	118
<i>PART 3: Conclusions and recommendations</i>	
Chapter 7: A framework for organising student academic support in FET colleges..	141
Appendices	148
References	154

LIST OF TABLES, FIGURES AND APPENDICES

TABLES

Table 5.1: Student interview - gender	104
Table 5.2: Student interview - population group	104
Table 5.3: Students by field of study and gender	104
Table 5.4: 'High risk' course subjects identified by college leadership	105
Table 5.5: 2005 results of course subjects of the observed lessons	106
Table 5.6: Eleven areas of greatest concern for college students and lecturers	111
Table 5.7: Factors perceived as contributing to student absenteeism	117
Table 5.8: Lecturers' language use in observed lessons	122
Table 5.9: Students' reports on language use to discuss work outside of the classroom	124
Table 5.10: Extent of classroom opportunities to practice using new terms	128

FIGURES

Figure 2.1: Range of contextual support and degree of cognitive involvement in communicative activities (Cummins & Swain 1984)	31
Figure 2.2: The 'dual iceberg' representation of bilingual proficiency (Cummins & Swain 1984)	31
Figure 4.1: Theory-led processes	73
Figure 4.2: Kolb's Experiential learning cycle (Kolb 1984)	73

APPENDICES

Appendix A

Table A: Percentage of lecturers who agreed with each problem statement and rank order from highest to lowest levels of agreement	168
Table B: Percentage of students who agreed with each problem statement and rank order from highest to lowest levels of agreement	170

Table C: Comparison of lecturers' and students' perceptions: percentage of lecturers and students who agreed with each problem statement and ranking of problems from highest to lowest levels of agreement for both groups 172

ACKNOWLEDGEMENTS

The following individuals and institutions are acknowledged for their contributions and participation in the research for this report:

The two literature reviewers:

- **Professor Chrissie Boughey, who reviewed student academic development practices in South Africa higher education institutions; and**
- **Dr Judy Harris, who reviewed student academic support practices in the international vocational or FET college sector.**

The four FET colleges where the case study research was conducted. Thanks go particularly to the students, lecturers and senior management who so generously gave of their time and insights. The identities of participating colleges, staff and students are confidential.

Carel Garisch; Angela Schaffer; Vanessa Taylor; and Kathy Watters - the researchers who collected the data and conducted the case study research at each of the colleges.

Dr Glenda Kruss, the project manager.

Dr Jeanne Gamble for her contribution to the initial conceptualisation of the research and for developing the research proposal.

Dr Glenda Kruss and Mignonne Breier, the critical readers and editors.

Ms Priscilla Barnes and Fredericka Davies, for administrative support.

DANIDA for giving the HSRC the opportunity to conduct the study and thereby make a contribution to the FET college sector.

DANIDA for providing the funding for the research.

ACRONYMS AND ABBREVIATIONS

ABET	Adult Basic Education and Training
AD	Academic Development
BICS	Basic interpersonal communication skills
CALP	Cognitive academic language proficiency
CEO	Chief Executive Officer
CHE	Council on Higher Education
CHED	Centre for Higher Education Development
CRT	Critical Reasoning Test
DANIDA	Danish Ministry of Foreign Affairs
DoE	Department of Education
EAP	English for Academic Purposes
ESP	English for Special Purposes
FET	Further Education and Training
HE	Higher Education
HEI	Higher Education Institution
HELTASA	Higher Education Learning and Teaching Association of Southern Africa
HEQC	Higher Education Quality Committee
HoD	Head of Department
HRD	Human Resource Development
HSRC	Human Science Research Council
IHEDSA	Institute for Higher Education Development in South Africa
LOLT	Language of teaching and learning
LPU	Linkages and Programmes Unit
MCU	Marketing and Communications Unit
MEDUNSA	Medical University of South Africa
NATED	National Technical Education
NCOR	National Certificate Orientation
NIC	National Intermediate Certificate
NQF	National Qualifications Framework

NRDC	National Research and Development Centre for Adult Literacy and Numeracy
NSC	National Senior Certificate
SAAD	South African Association of Academic Development
SAQA	South African Qualification Authority
SESD	Support to Education and Skills Development
SMME	Small, medium and micro-enterprise
SSU	Student Support Unit
UCT	University of Cape Town
UK	United Kingdom
UNITRA	University of Transkei
USA	United States of America
USAID	United States Agency for International Development
VET	Vocational Education and Training
WILRU	Work Integrated Research Unit

EXECUTIVE SUMMARY

The aim of this research report is to develop a framework for organising student on-course support that relates specifically to the FET college sector and the nature of the programmes offered at these institutions.

1. Research methods

Methodology for the research took the form of two literature reviews, four FET college case studies, and synthesis of data from the reviews and case studies. The two literature reviews are of a) student academic development practices in *South Africa higher education institutions* (Boughey 2005a); and b) student academic support practices in the *international vocational or FET college sector* (Harris 2005).

The case study colleges comprise four Support to Education and Skills Development (SESD) Programme colleges spread across three provinces. Data collection for the case studies took place during the period 8-20 February 2006 and included four activities: lesson observations; post-lesson interviews with lecturers; focus group interviews with students; and focus group interviews with college leadership. Data analysis entailed making generalisations from aggregated data on the case study colleges.

Synthesised data from the literature reviews and the case studies was then used to answer the main research questions: What framework could best serve for organising student academic support at FET colleges? What are key recommendations or criteria for organising academic support in FET colleges? What are the main implications or requirements for this?

2. Structure of the report

Chapter 1 introduces the context, scope and aim of the report. Part 1, Chapters 2-4, comprises perspectives on student academic support in the South African higher education and international FET college sectors. Part 2, Chapters 5 and 6, describe the empirical work and findings from the student academic support case studies of FET colleges. Part 3, Chapter 7, presents the study's conclusions and recommendations.

3. Main findings

Main student academic support concerns identified at the FET case study colleges are:

- students' low levels of foundational knowledge and understanding of particular subject areas, including their lack of general knowledge;
- students' proficiency in the language of instruction and assessment or examination;
- issues related to the development of 'academic' literacy, particularly reading and writing, and the development of concepts and the conceptual language to talk about the way things work in particular technical or vocational areas of study;

- issues related to practical applications of theory. Concerns that students are not being given opportunities to apply what they have learnt because of lack of time and facilities, and because this is not necessarily 'part of the curriculum';
- the development of problem-solving thinking skills in particular areas of study. Students experience difficulties with solving unpredictable or unfamiliar problems independently;
- students' learning histories. The view is that student 'success' is constrained by attitudes to learning formed through their prior school learning experiences;
- student absenteeism. 'Lack of motivation' is seen to contribute to student absenteeism. This is largely attributed to a) lack of post-course employment opportunities and the fact that performance is 'not tied to employment prospects' or work contracts; and b) poor initial career guidance and inadequate pre-course assistance with programme and course selection;
- lecturer knowledge and workplace experience. In particular, concerns about lecturers who do not exhibit sound content knowledge, appointees with trade and industry backgrounds and experience who do not have formal teaching qualifications, and staff who lack workplace experience in the technical areas they teach;
- curriculum and examination alignment and coherence. In particular, concerns about 'big gaps' between different levels of syllabi, and 'poorly conceived and worded examination papers'; and
- availability of textbooks, equipment and study resources for students such as libraries and study centres.

Five main models of incorporating academic support are identifiable in the literature:

1. **foundational models** which provide a 'gateway' into mainstream courses by developing the necessary subject knowledge base and conceptual or 'vocational' language for coping with mainstream courses;
2. **'catch-up' models** - features include course-based targets of improving average performance, pace setters with built-in assessment points, and compulsory 'catch-up' sessions;
3. **'slower stream' models** - features are similar to the 'catch-up' model, however, students cover the curriculum at a slower pace over an extended period of time;
4. **literacy 'in context' models** where language and literacy development is located in the context of the subjects. Support focuses on assisting lecturers in better understanding the relationship between language and learning; and
5. **'separate' literacy models** which focus on developing students' language proficiency, communication, reading and writing skills separately from course content.

Additional models identified in the case studies as relevant in the South African FET college context are student 'extension or enrichment' models. These are models which provide students with opportunities to acquire necessary background and practical experiences as well as general knowledge.

Six key recommendations for a framework for organising academic support at the FET colleges are derived from data synthesis. These are:

1. Student support to promote academic success entails the institutionalisation of academic development efforts and changes in institutions as a whole. Student academic support should be part of overall institutional development (improving institutional functioning and systems) and planned within the context of a concern for overall institutional quality. Student support programmes should be integrated into mainstream curricula provision. Support structures such as *student support units*, and strategies such as foundational modules, and tutorials should be viewed as resources for institutional development rather than student development. College environments that are not characterised by order and effectiveness do not lend themselves to managing and implementing academic development and curriculum improvement.
2. Student academic support should be theoretically grounded and not deployed in commonsense, ad hoc or faddish ways. The idea that students need to gain access to occupational identities which characterise the worlds of work they will interact with is of importance in conceptualising student support. This means that students need to access necessary knowledge and skills, the values and attitudes that give rise to exemplary practices, and the language or discourse for the specialisation of their occupational identities.
3. Student academic support, such as literacy and language development, should be integrated into mainstream teaching with vocational education content knowledge. The overall problem to be faced, it seems, is the issue of time and the practicability of incorporating components of academic support into the mainstream curriculum.
4. No one generic model for incorporating student support should be considered appropriate in all study fields and subjects and at all levels at FET colleges. Different models are appropriate for different subjects and at different levels. Foundational models are appropriate for addressing the issue of fundamentals in terms of subject knowledge; 'catch-up' models are appropriate for students 'whose performance is lagging'; 'slower stream' models are appropriate for providing 'extra time' for lecturers to spend more time on sections which students find difficult; literacy 'in context' models are appropriate for developing subject specific language and literacy; 'separate' literacy models are appropriate for preparatory literacy provision where intensive literacy learning to reach a certain threshold or for 'interfaculty' language and literacy support. An eclectic approach, combining features or dimensions of different models, is also a viable approach.

5. **Pre-course guidance and placement of students should be an important component of student academic support. Course selection should be linked to employment prospects. This entails programme and enrolment planning with industry and business partners that is linked to or increases students' work opportunities or chances of being offered jobs when they finish their studies. Placement should entail selecting students on the basis of career interest assessment and alternative admissions tests. Students' entry-level abilities, knowledge and language proficiency should be used to feed into curriculum development.**
6. **Student academic support interventions should be empirically-validated and tested through research. The impact of academic support efforts on student achievement needs to be tracked and evaluated in terms of cost per successful student.**

Main implications of the framework are that:

1. **Dominant constructions of what it means to offer student academic support will probably need to be challenged and shifted towards a more embracing understanding of the notion of academic support as taking place through work in the mainstream. Adjunct student support programmes do not address poor teaching on the part of academics, or poor course design which does not take into account students' learning histories and academic needs.**
2. **Policy frameworks, the support and authority of the national and provincial education departments, and the ability to sustain funding systemically are crucial in order to maximise the opportunities for institutionalising and 'mainstreaming' student support work. For example, in terms of offering more responsive programmes, accountability and incentives, and funds to cover research and monitoring of support efforts.**
3. **Additional human and infrastructural resources will be needed. For example, the availability of well- and relevantly- stocked libraries, resource and study centres at each campus.**
4. **Professional development for mainstream teaching staff will be required. The FET college case study classroom observations showed evidence of good expository teaching by those lecturers who exhibited sound discipline knowledge, however, there is scope for vocational educators to become much more aware of strategies for:**
 - o **developing thinking skills with content knowledge and engaging students with content at different levels of cognitive demand. For example, students need to access rules and procedures as well as the underlying principles and reasons for them;**
 - o **integrating language and/or literacy development with vocational educational content by using a wider variety of strategies a) for assisting students to develop independent reading and writing skills; and b) for**

developing conceptual and technical language, particularly in an additional language;

- providing adequate opportunities for practical consolidation of applications of theory through sufficient opportunities for independent, individual practice work; and
- deploying a mixed pedagogy which includes routine and open-ended tasks to stimulate problem-solving thinking skills. Students need to develop acceptable habits as well as to practise making theoretically informed judgements in the face of uncertainty in real world situations.

With the proviso that:

- attention to these areas enhances rather than detracts from the learning of specialist content or vocational knowledge; and
- teaching practices are theoretically grounded and are not deployed in inappropriate, *ad hoc* and instrumental ways.

With regard to responsibility for the various academic support needs (planning, structuring, staffing, etc.) the view of college leadership is that:

- overall responsibility should reside with the person in charge of academic affairs, and be located and implemented through academic structures;
- appropriate models for incorporating academic support should be based on ongoing tracking data of student and course results, and decided on in consultation with academic staff. These should be implemented through academic support and programme managers and through campus-based academic heads and campus heads;
- the Student Support division could take responsibility for aspects such as intake testing and guidance, pre-course support and advice as well as generic academic support needs with regard to study skills, the provisioning and running of resource centres, simulation facilities and student study areas;
- the Linkages and Marketing divisions could be drawn on in respect of partnerships and programme planning with business and industry partners, institutional capacity to organise practice-based experience and improve employment prospects, and any necessary revisions of college recruitment and admission materials.



Chapter 1

INTRODUCTION: CONTEXT, SCOPE AND AIM

INTRODUCTION

The focus of this research report is on organising support for students' academic success in FET colleges. Chapter 1 provides:

- the context and rationale;
- scope and purpose;
- research approach used; and
- aim of the report.

It concludes with an outline of the structure of the report and its chapters.

CONTEXT AND RATIONALE

The Support to Education and Skills Development Programme

The research for this report takes place within the context of the Support to Education and Skills Development (SESD) Programme. The SESD Programme is an intervention that seeks to develop replicable good practices in a selection of seven Further Education and Training (FET) colleges in the three province of North West, KwaZulu-Natal and the Western Cape. The Programme is funded by the development division of the Danish Ministry of Foreign Affairs (Danida) in cooperation with the Department of Education (DoE). The development aim of the Programme is to increase employability in South Africa by supporting the development of a high quality delivery of labour market orientated education and skills training, predominantly through the FET sector.

To date, HSRC research focused on the identification of good practices in three areas of student support, namely academic support programmes, HIV/Aids awareness interventions

and guidance and counselling systems, at a sample of four of the seven SESD Programme's FET college sites. Whilst this research produced a wealth of data on the area of student support, it was decided that, instead of focusing on all three elements, the phase of the research reported here should limit its focus to *academic support*. This is as opposed to economic or extra-curricular support such as social/cultural support, or health education. Academic support should be the focus, as:

- the area of student support that has a pervasive influence on the quality of all programmes; and
- an activity which is undertaken by all staff and not necessarily by academic support specialists.

Restricting the research focus to this one area of student support is not intended to imply that the other two areas are not important. Indeed, the contention is that colleges are already making strong interventions in the two other areas and that many of these innovations are already being shared in 'best practice' forums, specialist conferences and other knowledge sharing events at provincial level. Rather, a weakness identified is that there is less in the way of 'best practice' available from the colleges in terms of academic support, as this has not as yet been as much of a priority.

The current South African context

A focus on supporting student academic success is considered to be a priority area in the current South African context, particularly in terms of building FET colleges that are responsive to:

- students' teaching and learning needs,
- the needs of the world of work; and
- curriculum change.

The majority of students now entering South African colleges are not first language speakers of the language of tuition and, because of the legacy of apartheid, are more likely to have had poor formal schooling. Most students are likely to have specific teaching and learning support needs regarding language issues and forms of under-preparedness, particularly in relation to mathematics and science. As Harris (2005:3) observes in her review of international FET student support literature, given that the majority of students are likely to need the sorts of things traditionally defined as characterising academic support, it is difficult to draw boundaries between academic support and teaching and learning more generally.

However, available evidence is that educators and lecturers themselves are also often inadequately prepared and supported to cope with the linguistic needs and learning histories of students, and make unrealistic demands on them which results in both parties becoming discouraged (Olivier-Shaw 1994). Yet it is often assumed that 'problems' are only located in the students; primarily manifest in communicative, cognitive and subject deficiencies and can be 'cured' through separate academic support or bridging programmes (Olivier-Shaw 1994). Hence lecturers too need to be supported in adapting to and catering for the learning needs of students who are at risk.

Colleges themselves have new support needs. The primary aim of vocational college tuition is 'employability' and 'work preparedness'. Indeed, a distinctive feature of the FET college curriculum has traditionally been the link between theory, practice and workplace experience, or the world of work. However, because there are now fewer traditional apprenticeships offering opportunities for structured on-the-job workplace learning, new needs have arisen in colleges to relate theory and practice and to get students 'work ready'. Colleges need to find innovative ways to expose students within the college and classroom setting to workplace applications of the theory and skills they have learnt.

Expectations are that colleges will be responsive to the needs of the labour-market and the economy for a professional, knowledgeable workforce capable of higher order thinking, problem solving and decision-making. They are being encouraged to open routes for lifelong learning and for students to progress to higher tertiary study and qualifications through the educational or academic development of 'core skills for life and work' (McGrath 2004:168). Both of the above not only require strengthening learners' general disciplinary knowledge, in particular their 'English, mathematics, science and technology capabilities' (McGrath:162), but also represent a broadening and deepening of the FET curriculum across all fields of occupationally-related study. Moreover, as a result of policy reform and the different kinds of work opportunities available, there is potentially a much wider range of FET programmes and curricula that can be offered in terms of fields of study, modes and level of study. FET colleges and lecturers are likely to encounter many challenges as they respond to new developments and move into new curriculum areas.

Yet, in South Africa as in many other countries, student support has traditionally been concerned with guidance and counselling, the administration of bursaries, tutorials, study skills and life skills. In other words, student support strategies have mainly remained outside academic (and vocational) qualifications (Young 1992). There is, thus, a growing realisation that academic support and development are complex areas, which most institutions and individual lecturers are under-equipped to handle. There is also increasing understanding that the relation between theory and practice cannot be taken for granted and that 'academic support' is critical to bridging the gap between the two.

Finally, this research takes place in a context where Vocational Education and Training (VET) is being prioritised in South Africa as is evidenced by the Government's re-capitalisation of the FET colleges in 2006-2009. An emphasis in this process has been placed on the importance of student support, including staff development for improving retention and pass rates for the sector.

SCOPE AND PURPOSE

Essentially the report focuses on developing a framework for student academic support that will assist colleges and lecturers in meeting the challenge of ensuring the educational 'success' of students:

- with poor educational preparedness for college courses; and
- whose home language is not the official language of instruction and assessment (as opposed to support specific to, for example, the needs of students with physical disabilities).

Indicators of student success are achievement, pass, progression and completion rates that exceed expectations in 'high risk' course subjects. 'High risk' subjects are those where student pass, progression and completion rates are low, that is, subjects that students evidently find difficult.¹

Earlier research findings in SESD-supported colleges pointed, firstly, to a need for the colleges to extend the depth of their current academic support activities. A main finding was that there is, at this time, little variation in the form that academic support (as one form of student support) takes, with the inclusion of a 'tutorial' session in the timetable undoubtedly the most widely used remedy. Tutorials are usually treated as opportunities for one-to-one contact between students and lecturers, and they serve a diagnostic rather than a remedial or academic extension purpose.

Secondly, despite variations in the functions performed by student support units found in SESD-supported colleges and their respective campuses, evidence from the earlier research was that existing academic support practices are predominantly targeted at full-time students in the Grade 10 to post-matric category. While support available to students has increased in both quantity and quality, provision does not yet extend to the full range of students (for example, those in learnerships which have replaced the apprenticeship model;

¹ Increasing participation rates in FET college courses is a pre-entry access issue not covered in this research. Similarly, increasing the number of college students that obtain employment or start their own businesses in the field for which the college trained them, and the number of such students who continue with higher academic education is a post-course exit issue not covered in the research.

students undertaking skills programmes in skills centres that cater mostly for adult learners; and students undertaking part-time or full-time evening class tuition). Findings from the research pointed to the possible need to extend the scope of student academic support services to the full cohort of college students.

This research seeks to facilitate a better understanding of the on-course academic support challenges that FET college staff are currently encountering in the main areas of college provision. These are the areas of Business Studies and Engineering Studies, both predominantly formal theory-driven programmes with course subjects requiring high levels of conceptual understanding. However, the primary purpose is to begin to develop a conceptual model to serve as a framework for organising student on-course support that focuses on improving student 'success' in *all* 'high risk' course subjects. Thus:

- the scope of empirical research includes academic support needs in relation to both 'initial' and 'non-initial' college students. 'Initial' students are those on courses such as National Intermediate Certificate (NIC), National Senior Certificate (NSC) and National Certificate Orientation (NCOR) or N1. 'Non-initial' students are those taking more senior courses; and
- the report attempts to develop a conceptual framework that informs student academic support that applies for 'high risk' course subjects for both general vocational (National Technical Education/NATED) modes of curriculum, where standards are defined in terms of content/knowledge to be learnt as well as occupationally directed (National Qualifications Framework/NQF-aligned) modes of curriculum, where standards are defined in terms of learning outcomes.

Finally, the research focuses on student academic support that relates specifically to the FET college sector and to the nature of the programmes offered at these institutions, as opposed to ordinary school and other types of more academically orientated post-school educational institutions, such as universities. The links between theory, practice and workplace experience in the vocational education and training context requires that the term 'academic support' should be applied in both a broad and more specialised sense than is usually the case because, for some of the reasons already outlined, FET students need to be provided with disciplinary and theoretical knowledge as well as practical knowledge and skills and workplace training.

THE RESEARCH APPROACH

The research includes an external as well as an internal college-directed research focus. Methodology takes the form of:

- two literature reviews;

- four college case studies; and
- synthesis of data from the reviews and the case studies.

The external focus: literature reviews

The 'external' empirical focus of the research examines what can be learnt through two commissioned literature reviews of the experiences of:

- student academic development practices in South Africa higher education institutions (with reference to universities of technology and comprehensive universities) (Boughey 2005a); and
- student academic support practices in the international vocational or FET college sector (Harris 2005).

The reviews were undertaken to ascertain the kind of difficulties students encounter in both sectors, as well as the lessons learnt from the local Academic Development (AD) movement and the international FET sector. A second set of questions for the reviews related to approaches and practices found to be beneficial in addressing recognised obstacles and barriers to learning with regard to, for instance, concept formation and language (especially where the language of tuition may not be a first spoken and written language). The rationale for adopting this particular research approach is that, while FET colleges in South Africa do not yet have strong expertise in academic support and academic development, many South African higher education institutions (HEIs) and FET colleges internationally have established track records in this regard, from which valuable guidelines can be obtained.

Indeed, key questions addressed through this review process are:

1. What are the main themes or areas of concern? What obstacles and barriers to learning are identified as requiring learning support at South African higher education institutions and internationally at FET/VET level?
2. What approaches to student support are recommended? What are the key theoretical debates underpinning approaches to student academic support? What evidence or arguments are there to support the adoption of particular positions on student support in relation to FET?
3. What crucial lessons can be learnt from South African higher education institutions and the international FET college sector?
4. Which teaching practices from both reviews appear to hold promise for on-course student academic support purposes in relation to vocational education and training in South Africa?

5. What main models of student academic support are evident?

The internal college-directed focus: four college case studies

The 'internal' empirical focus of the research entailed using findings from both literature reviews to develop a set of structured questionnaires and an observation schedule for use with FET college staff and students on fieldwork visits to a sample of four of the SESD-supported colleges spread across three provinces. However, rather than focusing on current academic support practices in the colleges, the aims of the case study research were to investigate:

1. **What are the main areas of concern at the FET colleges? Which areas of concern, identified as obstacles to student 'success' at South Africa higher education institutions and at FET/VET level internationally, are confirmed by staff and students at the case studies colleges as areas in need of academic support in the South African FET college context? What additional factors emerge from the data collected as possible barriers to learning in the South African FET college context? What, if anything, appears to differ?**
2. **What mainstream teaching academic support needs are evident? What is the extent to which some of the classroom practices that seem to hold promise for student academic support purposes in FET are evident in classroom observations in the South African colleges?**
3. **What models for academic support seem viable for the FET college sector? Which models for academic support are perceived by college leadership at the case study colleges as viable for addressing obstacles to student 'success'? Which features or dimensions of these models already exist? What alternative models emerge or are proposed? What support and resources are needed to offer the kind of support required? Where should responsibility for the various academic support needs be located within college structures?**

In order to collect relatively comparable data, the focus at all four colleges is on the two main areas of provision, Business Studies and Engineering Studies.

Data collection for the case studies comprised four activities, each of which used a specific instrument based on a common set of dimensions and characteristics. The four activities at each college comprised:

- lesson observations;
- post-lesson interviews with lecturers;
- focus interviews with students; and

- focus interviews with college leadership.

These took the form of:

1. Eight direct lesson observations of classes in eight different subjects considered to be 'high risk' in the two main areas of provision at each college. Researchers were required to observe four Engineering and four Business Studies courses. Identification of 'high risk' subjects in each study field was left to the colleges who were asked to identify course subjects in terms of evidence of poor results and low pass rates. Although, ultimately it did not particularly matter if the courses were NATED or Non-NATED, the idea was to try to ensure the inclusion of variations in terms of curriculum structure and programme organisation in the sample. Ideally, four of the courses were to be with students at the 'initial' level and four with students at the 'non-initial' level. Researchers were provided with an observation protocol for each observation.
2. Eight post-lesson interviews with each of the lecturers in the classes observed. Lecturers were asked to indicate which difficulties or blockages to learning they encounter on a regular basis in relation to the different study fields. Here researchers used a structured interview schedule provided.
3. At least four interviews with three students from each of the observed classes with 'non-initial' or senior students. 'Non-initial' or 'senior' students were targeted for the focus group discussions on the understanding that they would be better able to comment on student support needs than 'initial' students. The plan was to interview three students from each of the four 'non-initial' classes observed, giving a total of twelve students at each college. However, if fewer than three of the classes observed had 'non-initial' students, then students from other 'high risk' classes were identified and interviewed. Students were asked to indicate which concerns they encounter on a regular basis in relation to 'difficult' course subjects in different study fields. Researchers used a structured interview instrument provided.
4. A focus group interview with as many as possible of the college leadership or senior management (rectors, heads of departments, programme managers) at campus or head office level, including the head of student support. As far as was possible, this focus group interview was conducted on the first day of the research so that college leadership could be asked to identify 'high-risk' courses within Business Studies and Engineering at their college. Staff at each college was then asked to respond to specific models of student academic support drawn from the literature reviews. A secondary activity of the interview was to establish i) what support and resources are needed; and ii) which organisational structure is considered most effective for the academic support requirements of their colleges. Here reference was made to the functions of the Linkages and Programmes Unit (LPU), Student Support Unit (SSU) and Marketing and Communications Unit

(MCU) established in each SESD-supported college.² Once again researchers used a structured interview schedule provided. However, in order to provide the academic leadership with an opportunity to consider the models of incorporating student academic support, the descriptions of the models were emailed to the relevant staff at the college in advance. Where it was not possible to get everybody together (largely because of multi-site campuses of merged colleges), focus interviews were conducted more than once.

Participation in the research was voluntary for all participants. Data analysis for this internal dimension of the research entailed aggregating data obtained at the four colleges to make generalisations for the sample as a whole.

Data synthesis

Available evidence from literature reviews together with data generated from the four FET college case studies was then analysed and synthesised to answer the following key research question:

What conceptual framework could best serve for organising student academic support at FET colleges? What are key recommendations or criteria for a framework for organising academic support in FET colleges? What are the implications of this framework?

AIM

Essentially, the aims of the report are to begin to:

- disseminate a more nuanced understanding of the term 'academic support';
- develop a conceptual framework for organising student academic support at the FET college level; and
- build a typology of academic support models and practices that are 'fit for the purpose' in the South African FET college sector.

The report provides empirical information and recommendations that cover the full academic support spectrum as the basis for:

² Work done thus far has shown that, although each of the SESD-supported colleges in the sample has established a LPU, a SSU and a MCU, these units are often positioned in different places in the college structure and they also fulfill different functions. These functions are all undergoing continuous change. The research activity for this report coincides with completion of the other two sub-components of the research programme, which deal specifically with LPUs and MCUs.

- lecturer development;
- the formulation of academic support policies;
- funding and staffing decisions; and
- further tracking of developments.

In doing this, the report draws on:

- earlier HSRC research reports of current student support practices;
- the proposal for this research;
- SESD summative impact assessments and literature;
- the two literature reviews of the South African higher education and international FET experiences;
- the four FET college case studies of student support; and
- other research reports relevant to understanding and supporting learning at FET level.

OUTLINE OF CHAPTERS

Chapter 1 frames the rest of the report which comprises three parts.

Part 1: Perspectives from the South African higher education and international FET college sectors

Most of the text included in Part 1 (Chapters 2–4) draws on the two commissioned literature reviews (Harris 2005 and Boughey 2005a). The substance and tone of these three chapters is thus academic. This is considered important for developing a vocabulary for thinking about academic support and in terms of introducing concepts and ways in which specialists in the area talk about the subject. These chapters are intended as a resource for policy makers, researchers, college leadership and senior management (rectors, heads of departments, and programme managers), including heads of student support units.

Chapter 2 draws on the reviews to establish commonly identified obstacles to student 'success' in 'high risk' courses. It outlines theoretical debates underpinning most approaches to student academic support and points to research evidence challenging or supporting the adoption of particular approaches in relation to further education and training in South Africa.

Chapter 3 identifies some of the main lessons learnt from the AD movement in South African higher education as well as the international vocational and FET college sector. It identifies particular concerns in the South African context.

Chapter 4 identifies practices from both reviews that appear to hold promise for on-course student academic support purposes in relation to further education and training in South Africa. Professional development implications for lecturing staff are considered. The chapter goes on to describe the student academic support models prevalent at the higher education level for addressing obstacles and barriers most conspicuous in the South African context.

Part 2: FET College case studies

Part 2 (Chapters 5 and 6) describes the empirical work for the case studies and is not as academic in style as Part 1. However, the design and findings of the case study research are underpinned by theoretical understandings developed in Part 1 and reference is made to ideas discussed in Chapters 2-4.

Chapter 5 elaborates on the case study research process. It then looks at the extent to which areas of concern or difficulty, identified as obstacles to student 'success' in 'high risk' courses at South Africa higher education institutions and FET/VET level internationally, are confirmed as areas in need of support in the South African FET college context. It describes the degree to which some of the classroom practices advocated for different types of academic support concerns are evident in FET college classrooms. This is done by providing data on the experiences of lecturers and students and direct classroom observations of 'high risk' course classes in Engineering and Business Studies at the four case study colleges.

Chapter 6 concludes the external research focus. It provides models of academic support that are perceived by college leadership at the case study colleges as feasible, practicable and appropriate for 'high risk' subjects at FET colleges. It considers the support and resources required and college leaderships' views on where the various responsibilities for different dimensions of academic support should reside.

Part 3: Conclusions and recommendations

Chapter 7 draws on both the external and the internal research findings. It concludes the report by making recommendations for a framework for academic support in FET colleges and outlines implications.

**PART 1: PERSPECTIVES FROM STUDENT ACADEMIC
SUPPORT IN THE SOUTH AFRICAN HIGHER EDUCATION
AND INTERNATIONAL FET COLLEGE SECTORS**

Chapter 2

CONCERNS, DEBATES AND APPROACHES

INTRODUCTION

The main purpose of this chapter is to:

- identify the areas of concern or difficulty commonly recognised as requiring academic support in the literature on academic support in the international vocational or FET college sector, as well as in the literature on academic development practices South Africa higher education institutions;
- explicate key philosophical and theoretical debates underpinning approaches to student academic support in relation to the areas of concern identified in the literature; and
- discuss evidence or recommendations from the international FET literature to support the adoption of particular approaches to supporting student learning in FET colleges in South Africa.

As already acknowledged in Chapter 1, much of the text for this chapter is drawn directly or adapted from the external research focus. Chapter 2 draws predominantly from the review of the international FET literature (Harris 2005), although some extracts from the review of the South African Academic Development movement have been incorporated (Boughey 2005a). The chapter is intended as a useful resource for researchers, policy makers, college leadership and senior management (rectors, heads of departments, and programme managers), including heads of student support units. As indicated in the introduction to the report, the substance and tone of Chapters 2, 3 and 4 are academic by nature. This is considered important if the intention is to enhance debates, discussions and thinking about academic support at the FET college level.

AREAS IDENTIFIED AS REQUIRING SUPPORT

Areas of concern or difficulty commonly identified in both reviews as requiring support in relation to further education and training are:

- the development of thinking or cognitive skills including conceptual understanding and problem solving in particular technical or vocational areas of study;
- practical applications of theory, in particular technical or vocational areas of study;
- 'academic' literacy, particularly reading and writing in the language of tuition, assessment and examination; and
- language proficiency in the language of instruction and the development of the conceptual or technical language to discuss the way things work in particular areas of study.

Each of these four concerns is briefly elaborated on below.

Thinking skills

In the *international further education* literature, this concern is often addressed under the rubric of key skills, core skills, generic skills or employability skills. In the United Kingdom, 'key skills' are communication, application of number, information technology, working with others, improving own learning and performance and problem solving.³ As well as aspiring to be the vehicle for improving students' skills, key skills are also seen as a way to broaden the base of vocational education as a whole by making it more 'general'.⁴ In this way, they are deemed capable of increasing linkages and pathways to higher academic education, and of raising the status of further education generally.

However, many theorists argue that 'thinking skills' are a more *educational* concept than key skills and more worthy of analysis as a more reasoned basis for student support in further education. For this reason the focus in this report is on the thinking skills literature. The idea that the use of more effective thinking skills could bring about improved learning became fairly widespread thanks to the work of popular authors such as Edward de Bono (1970, 1971) and Tony Buzan (1974, 1984).

In very broad and self-evident terms, thinking skills are about helping people to think well. The skills are generally taken to include cognition (cognitive skill, style, process, development, ability), problem solving, decision-making, critical thinking, creative thinking and domain/subject-specific thinking (understanding the role of content knowledge). These

³ The first three are called 'hard' or 'main' key skills (Kelly 2001:22). The second three are called 'soft' or 'wide' key skills and are to be found in Modern Apprenticeships. Separate examinations exist for the hard key skills.

⁴ Hazenwood (2001:6) argues that 'the concept of liberal education for vocational students has metamorphosed through Liberal Studies, General Studies, Common Skills and Key Skills. Yet... the problems of students seeing the relevance of their general education studies is still prevalent'.

particular skills are defined in varying ways, depending on the orientation of the thinking skills framework of which they form a part. Also influential on thinking skills frameworks is research into 'metalearning' defined as the 'activity of a learner who is aware of his learning process and who can intentionally plan, execute, monitor and evaluate his learning' (Slabbert 1994:39).

There is a growing body of research which suggests that thinking skills and cognitive challenge approaches can be effective in creating powerful learning environments and in helping individuals to maximise their potential. In this vein, Livingston, Soden and Kirkwood (2004:i) refer to there being 'sound evidence' that through such interventions 'learners became more competent at cognitively complex course tasks'.

Theory and practice

As stated in Chapter 1, the links between theory, practice and workplace experience is a distinctive feature of the FET college curriculum. The key difficulty identified here is that students and teachers do not easily relate theory to practice and vice versa. In the international FET literature, two main theory-practice options emerge for integrating theoretical knowledge and practical skills. One is to construct theory from practice (practice-led approaches). The other is to acquire theory before putting it into practice (theory-led approaches). These will be elaborated on further later in this chapter.

Literacy

The academic support challenge here is finding the most productive ways of supporting the development of students' literacy and language skills within vocational education. The further education literature tends to be advocacy when there is little evidence of empirical research into what actually works. For example, one systematic international review of controlled trials relevant to adult literacy and numeracy was undertaken in the United Kingdom by the recently created National Research and Development Centre for Adult Literacy and Numeracy (NRDC), as part of its work in support of a government initiative called *Skills for Life*.⁵ The aim was to provide complementary answers to two questions: 'What is known from research about effective pedagogy?' (for adult literacy) and 'What factors in teaching cause adult learners to make progress in adult literacy...?' The review concluded that 'there were very few studies which provided quantitative evidence to answer these questions.' (NRDC 2003:1).

⁵ The NRDC was founded in 2002 as the cornerstone of government's Skills for Life strategy for England. It consists of a consortium of 12 partners, led by the Institute of Education at the University of London.

Language

Compared to the literacy literature, the international literature concerning language development is wide-ranging - emanating from different configurations of theoretical positions. This perspective is echoed by Barton and Pitt (2003:19):

...literacy teachers draw on more adult learning theory and on what they call the whole language approach, which is said to include process writing; ESOL teachers, on the other hand, have more knowledge of linguistics, drawing on genre theory, including systemic linguistics and text analysis.

In several countries, second language teaching and learning (for adults) has been subsumed within literacy considerations and some of the complexity of the former has been erased as a result. Although the difficulties involved in learning to read in a language not known well are acknowledged (because the student is learning two systems at once - a system of written symbols and a system of expressing meaning), there is little actual research on this.

Ultimately, much hinges on the level of literacy in the first language. If students are not (functionally) literate in the first language, then pedagogical issues revolve around the efficacy of teaching first literacy in a second language. For example, it can be difficult to diagnose whether reading difficulties in a second language are the result of poor reading strategies in the first language, or lack of 'oracy' skills in the second language, or whether they point to a lack of more general prior knowledge.⁶ For students who *are* literate in their first language, issues revolve around the relationships between the two (or more) written languages.

DEBATING APPROACHES - EVIDENCE AND RECOMMENDATIONS

What is clear from both literature reviews is that the above four components of the remit of student academic support all seem to hinge on understandings of and positions on knowledge 'transfer' - a notoriously contested concept. In other words, 'transfer' and issues pertaining to it (its possibility, efficacy, etc.) run through all four areas considered in need of support in one way or another and through key theoretical debates underpinning most approaches to student academic support. By implication, understanding theories of knowledge 'transfer' provides a general understanding of approaches to student academic support.

⁶ Oracy is a widely-used term to refer to 'listening' and 'speaking' skills.
HSRC Research Report

Knowledge transfer

Stokes and Baer (in Cornford 2002c) offer a useful working definition of 'transfer' as: 'the use of previous knowledge differing in terms of "subjects, setting, people, behaviours, and/or time". Examples are the use of theoretical knowledge in practical situations, or the transfer of learning from context-rich real world situations to abstract context-reduced situations. Some notion of knowledge transfer is assumed in education, as Cornford (2002c:86) reminds us, 'even young children can be observed consistently trying to apply previously learned words and terms to new situations'.

Types of transfer

Some helpful distinctions are drawn between *types* of transfer in the FET literature review:

- **Application transfer, near transfer or domain transfer** 'refers to the situation where students learn something...and apply this learning' *within* a subject domain (Livingston et al. 2004:19); and
- **Context transfer or far transfer** refers to, for example, applying educational knowledge generically across subjects or domains of knowledge.

Schools of thought on 'transfer'

The literature further suggests two schools of thought on transfer, which, for the purposes of this report, are termed 'universalist' and 'non-universalist' (Harris 2005). Put crudely, one school is more psychological and one more philosophical and/or sociological in orientation. In order to explicate key theoretical debates underpinning most student academic support practices, each school is discussed in relation to positions on 'transfer' in relation to the four student support concerns, 'thinking skills', 'theory and practice', 'literacy', and 'language'. The universalist school and universalist positions on transfer in relation to the four areas of concern are discussed first.

The universalist school

This school or what Bonnet (1995) calls the 'metacognitive movement' upholds the possibility and efficacy of both forms of near/application transfer and far/context transfer. Theorists are often (but not exclusively) drawn from cognitive psychology. Universalists endorse near and far transfer. Although it is generally accepted that application transfer

within a subject domain is more likely than transfer *from* one domain to another (across domains), universalists differ in the extent to which they endorse application and/or far transfer.

Thinking skills

Proponents of key skills see thinking skills as unequivocally transferable, both *within* domains (application transfer) and *across* them (far transfer). Kelly (2001:21) for example, defines them as 'generic, transferable skills that people can learn and develop in a wide variety of situations, whether in education or in the workplace'. However, from a non-universalist position claims made by proponent of key skills regarding transferability, see key skills as 'a wasteful "chimera hunt" in pursuit of spurious transferability' (Kelly:21). As thinking skills frameworks are considered a more *educationally* sound set of interventions than those pertaining to key skills, a universalist position on addressing the question of thinking skills rather than key skills will be discussed. The universalist student support strategy is that of teaching thinking skills separately from content.

Teaching thinking skills separately from content

The strategy of teaching thinking skills separately involves developing discrete 'pedagogic approaches through which specific strategies and procedures may be taught and used by learners in a controlled, conscious way to make their thinking more effective' (Moseley et al. 2004:7). The pedagogic goal is to teach generic deeper (and quicker) levels of thinking skills. One of four key studies discussed in detail by Livingston et al. (2004) is useful to illustrate this strategy. The researchers cite Butler (1998) who developed a discrete programme focusing on goal setting and self-regulation: 'helping students to get a sense of what they are trying to achieve, and in guiding students to consider options and make strategic decisions for themselves' (Livingston et al. 2004:6). Butler's intervention was conducted in North America with post-16 learners with no (or low-grade) formal academic qualifications at entry and 'who struggled to complete tasks'. She referred to them as 'actively inefficient' learners.

Another of Livingston et al.'s four studies concerned 'process workshops' designed for teaching chemistry at a university in the USA. These discrete workshops took a 'constructivist' approach to working with students who were having difficulty 'applying concepts when solving problems'. Students were given opportunities to actively exercise process skills. Although no attempts were made to measure any transfer effects in terms of learning outcomes, 'clear evidence emerged...that process workshops were of benefit to students' learning of general chemistry and had a positive effect on their *motivation*.' (Livingston et al. 2004:9, our italics).

However, unless there is a short-term need for intensive and directed provision, there is little hard evidence of improved outcomes (as opposed to motivation) in the literature to support the teaching of thinking skills in isolation from content. *The evidence is that one needs subject knowledge (in the FET context, technical concepts) to think with.* Thus, focusing on thinking skills separately from content knowledge is not considered advisable for the FET sector. This relates particularly to the potential deployment of specially trained student support workers to deal with thinking skill separately.

Theory and practice

As is the case with the relationships between thinking skills and content knowledge, universalist arguments apply again in the relationships between theoretical knowledge and practical knowledge. Essentially the relationships between thinking skills and content knowledge and between theory and practice hinge on philosophical premises regarding how knowledge is understood. For the universalists, knowledge difference is not an issue. An example of this view is Boud (2001:56) who states that: 'It is profoundly misleading to regard work-based learning as an entirely pragmatic and operational endeavour. It is as potentially theoretically complex and intellectually demanding as any form of education'. The universalist strategy is that of constructing theory from practice (practice-led approaches).

Practice-led approaches

Practice-led approaches are apparently gaining ground in contemporary further (and higher) education, as evidenced in the many programmes where the majority of learning, support and assessment takes place in the workplace, for example, new forms of apprenticeship and programmes where work forms the basis of the individually negotiated curricula. The arguments for these kinds of programmes are usually couched in 'progressive' terms emphasising their contribution to democratising knowledge and to encouraging more learners to partake of learning opportunities. The philosophical antecedent for this learning-by-doing approach is found in Dewey.

It is also interesting to note the position of the situated learning theorists (Lave & Wenger 1991) in relation to the relationships between theory and practice. Practice-led approaches may also be grounded in situated learning theory which takes the position that transfer is difficult rather than in a universalist view (which upholds the possibility of both near/application transfer and far/context transfer). Key to situated learning theory is the idea of learning in practice as participation in a 'community of practice'. As Beckett (2004:504) puts it, 'what it means to be a lawyer, or a mason, is largely to be immersed in socio-cultural experiences'. In the FET context such a position may, however, counter-privilege informal learning at work over formal learning.

Clarke and Winch (2004:510) argue that apprenticeships have long been predicated on such a view, that is: 'initiation into occupations by observation, imitation and gradually growing participation'. However, Clarke and Winch further contend that initiation into a 'community of practice' through situated learning alone is no longer enough as: 'modern work processes can only be learned like this with the greatest of difficulty, because they centrally involve theory – normative, scientific or both, which informs the techniques employed.' The argument is that, counter-privileging informal learning at work over formal learning may remove this problem from view, but does not necessarily solve it. Furthermore, other commentators (for example, Fuller & Unwin 2004) suggest that, in practice, many workplaces are 'restrictive' rather than 'expansive' learning environments.

Clarke and Winch's (2004) detailed critique of practice-led or practice-first approaches is made on the basis that practice-led approaches assume an *inductive approach* to the relationship between theory and practice. Induction refers to forms of argument which assume, from past evidence of regular associations that such associations will continue into the future. Whilst this is not logically the case in everyday, practical life, it is frequently assumed to be so (including in some forms of scientific enquiry). For example, practice is theorised through developing an understanding of the principles and theoretical foundations of various work processes.

Achieving an inductive theorisation of practice implies the need to develop an adequate empirical base upon which to induce theoretical properties and from which to form generalisations. Clarke and Winch (2004:516) point to some of the paradoxes of this. They argue that 'one cannot form a generalisation that presupposes grasp of technical concepts unless one first has a grasp of the technical concepts'. The argument is similar to that advanced earlier in the section on thinking skills: that one needs subject knowledge (in this case technical concepts) to think with. Clarke and Winch also point out that the ability to reason inductively is context-dependent rather than context-independent. Context is taken to form the empirical base for theorising, but it may well be that particular contexts place constraints on the type of theory or generalisation that can be derived from them. For example, a context may not produce enough evidence, or too narrow an evidence base, for generalisation.

Furthermore, different contexts support different levels of risk regarding generalising from past associations. Dealing with contingencies or life-threatening situations may, for example, require more than inductive generalisations drawn from an empirical base of past experience. These issues lead Clarke and Winch (2004:516) to conclude that '[i]nduction of theoretical properties from practical experience seems, then, to be fatally flawed for the acquisition of applied theoretical knowledge'. Certainly the FET literature suggests that transfer between theory and practice happens by default in much workshop and simulated teaching in FET.

Literacy

Universalist strategies for addressing the question of literacy 'transfer' are i) teaching literacy separately; and ii) teaching separate, but linked, literacy.

Teaching literacy separately

The international FET literature suggests that separate literacy classes are a thing of the past, although the reasons for this are not made clear (Falk & Miller 2001:59). Indeed, it is argued that tutorial type models of literacy worked reasonably well, but have simply become outmoded. Where functional literacy is taught separately as basic skills, the assumption is that the skills acquired can be 'applied in those functional tasks that rely on them' (Falk & Miller:1). Easy (or universalistic) notions of transfer have proved difficult to uphold empirically. Falk and Miller cite some evidence that separate tuition works when intensive learning of literacy is indicated, for example to facilitate initial access to vocational education and training. Overall, separate literacy provision is not recommended in the literature, except in cases where intensive literacy learning to reach a certain threshold is indicated.

Separate, but linked, literacy

These approaches are increasingly deployed to support students prior to enrolment on a mainstream vocational programme. There is evidence that students welcome the explicit vocational links and the reduced emphasis on literacy itself. Powell et al. (2004:15) evaluated separate basic skills provision for *Big Issue* workers, finding it to be of limited success for three reasons: 'basic skills were not seen as a priority; the benefits of obtaining better skills was an abstract idea for most; and some potential learners feared being stigmatised as illiterate if they participated'. However, when basic skills were embedded into a publishing course, the outcome was more positive. The writers claim that the reduction of emphasis on basic skills and the focus on vocational content was perceived as relevant, interesting and motivating.

Stahl (1991:1) reports on an interesting conceptual and philosophical reorientation in preparatory literacy provision. The term 'learning specialist' is coined, rather than 'basic skills specialist'. The goal was to improve 'college reading instruction' using an academic not a 'remedial/developmental' approach. Stahl argues that an academic approach 'operates from a philosophical perspective stressing strategic approaches to reading-to-learn as driven by the cognitive sciences and recent research in reading pedagogy. The more traditional skills approach [as in basic education or functional literacy] reflects a deficit model drawn from the diagnostic-compensatory movement (in spite of claims to the contrary). In the academic case, the instructor looks upon his/her mission as teaching students specific skills that have not been mastered'. Within this philosophical framework, preparatory and highly-focused

activities were undertaken with students. They tended to be high-utility strategies with immediate application transfer potential.

It would seem from the literature that vocationally-linked (discrete) literacy does have more to recommend it than discrete literacy classes, especially if the focus is on high-utility literacy practices and the language of subjects and of classroom learning, involving for example, a trial-run with authentic subject-specific materials and approaches.

Language

Universalist strategies or approaches for addressing the question of language 'transfer' are i) teaching language separately; or ii) no language teaching; and iii) teaching separate, but linked, language.

Teaching language separately

The literature on language teaching and learning is similar to the literacy literature in this regard. Separate language provision is not recommended, except in cases where intensive language learning to reach a certain threshold is indicated.

No language teaching

This refers to Krashen's (1982) influential work where he proposed that at a certain level of proficiency, that is, if the interaction in the classroom is comprehensible to the learner, then 's/he will learn language by participating in it, without needing direct instruction' (in Ivanic & Ming-I 2005:24). However, in the South African context, this is generally not the case and the majority of students have different needs.

Separate, but linked, language

These are the fields of 'linked skills', English for Academic Purposes (EAP) and English for Special Purposes (ESP). They tend to be preparatory programmes where a language teacher focuses on the specific language demands of particular academic or vocational areas. The literature reflects ongoing debates among EAP teachers and researchers about the issue of skills transferable from EAP classes to content classes. As with literacy, there seems to be some merit in intensive vocationally-oriented, discrete provision.

The non-universalist school

This school is more cautious and critical about claims to transferability than the universalist school. Rather than a single position, there is a continuum of positions. At the one end of the continuum, are theorists who problematise application transfer *and* far transfer. Some of Basil Bernstein's work on 'vertical discourses' supports these arguments, as does the work of Muller (2001) and Young (2002). Further along the continuum, are positions which hold that near or application transfer is more tenable than far transfer (whatever the nature of the knowledge structure), and should therefore be focused on. In other words, as stated earlier, application transfer *within* a subject domain is far less contested than transfer *from* one domain to another (across domains).

What follows are 'non-universalist' positions on addressing questions of transfer for the four areas of concern.

Thinking skills

Non-universalist approaches identifiable for addressing the question of thinking skills 'transfer' are i) relying solely on domain knowledge; and ii) teaching thinking skills with content knowledge.

Relying solely on domain knowledge

This position aligns to the more philosophical end of non-universalism. Bonnet (1995), for example, argues for the 'sanctity of content', that thinking skills can only develop within the context of domain knowledge.⁷ For Bernstein, thinking skills would be seen as part and parcel of the structure and rule system of vertical knowledge structure. The deeper the domain knowledge, the deeper the thinking. It is the domain knowledge that leads the thinking, not the other way around. This hypothesis accounts for students' uneven levels of thinking skills in particular subjects. As Pithers and Soden (1999:34) put it, 'it is important to be clear that the level of a person's "skills"may differ depending on that person's grasp of the knowledge with which the "skills" are to be combined'.

Likewise, Glaser (1985) argues that 'experts have examined knowledge-rich tasks...in knowledge-rich domains' and have shown 'strong interactions between structures of knowledge and cognitive processes'. Likewise, Soden and Pithers (2001b:207) refer to expert-novice studies, which imply that 'to think well in knowledge-rich domains, people need to achieve a deep understanding of significant ideas in their discipline, of how these ideas are related, of the ways of thinking which enable them to use this knowledge to think through

⁷ This is a position Gamble (2006) adopts in relation to vocational education that is based on context-independent theory. HSRC Research Report

complex discipline-related tasks and of ways of regulating themselves as they try to do so'. The key element in this strategy is to 'teach more subject knowledge' and teach it better.

A further key element in this strategy might be to consider maths and science as central vehicles for increasing levels of thinking skills. Moseley et al. (2004) mapped thinking skills against UK National Curriculum learning objectives at key stage 4 (14-16 years) finding that maths and science make most specified references to demands made on general thinking skills. Champagne (1986) notes that some states in the USA mandated 'increased science and mathematics for all students for high school graduation' on the basis that 'reasoning, problem solving and learning skills are best taught in these courses'. On the science side, according to Livingston et al. (2004:13), hypothetical-deductive thinking was considered to be central in thinking about biology and physics, whereas thinking in engineering courses was described as mainly oriented to problem solving. Students also tend to see domain knowledge as necessary to thinking. In a counter-intuitive way, the corollary suggestion might be that under-prepared students need *more* content knowledge and that interventions should be designed to deepen students' understanding of the disciplinary knowledge as a means to improve their thinking.

Thomas (1992) coins the terms 'high-road transfer' and 'low-road transfer'. She argues that most traditional vocational education focuses on low road transfer, a point borne out by Bhola (1995:29) who claims that '[n]arrow specialisations are chosen which are then taught at a level of concreteness which makes transfer [particularly] difficult'. Thomas (1992:xiii) foregrounds the need for high-road transfer if vocational and academic education are to be brought into greater proximity and, on the basis of empirical testing in five sites, argues for 'the importance of a deep understanding of the knowledge domain and of research' (Thomas:xii). Her view is that at lower levels, knowledge is less domain-related than at higher levels. Essentially the argument is that the best way to deepen thinking skills is to deepen subject knowledge.

Teaching thinking skills with content knowledge

There are a range of non-universalist positions which hold that although thinking and domain knowledge are intimately bound up, pedagogic attention can (and should) be paid to both. There is evidence that 'students perform better on a variety of cognitively complex course tasks within their subject area' when exposed to integrated support. As Soden and Pithers (2001b:207) observe, any attempt to teach strategic thinking is unlikely to have significant impact on problem-solving ability, unless it is accompanied by attempts to deepen understanding of basic principles in relevant disciplines and their inter-connections. On the basis of their meta-analysis, Livingston et al. (2004:75) recommend domain-specific interventions that are 'characterised by a good balance between discovery learning and personal exploration on the one hand, and systematic ... instruction on the other'.

These views are borne out by some of the more developmental psychologists involved in devising thinking skill frameworks (such as Entwistle & McCune), who argue that domain knowledge should not be downgraded in favour of process skills. They also argue (along with Bernstein) that different disciplines require different teaching, learning and assessment methods and that any pedagogic approach to thinking skills has to be redefined for each discipline, 'to ensure they include the learning processes necessary for conceptual understanding of that area of study' (Entwistle, McCune & Walker in Coffield, Moseley, Hall & Ecclestone 2004:143). This line of enquiry seems to hold promise for student support purposes.

Thinking skills frameworks can be used to give purpose and structure to student support endeavours, by providing taxonomies, models and frameworks for understanding the processes and experiences of thinking. However, some frameworks are better than others for particular things. For example, Anderson and Krathwohl (2001 in Moseley et al. 2004) have created a matrix whereby cognitive processes interact with different types of knowledge. Such a framework is particularly useful for drawing attention to the frequency and overuse of instruction that focuses on 'factual knowledge' (knowledge of terminology and knowledge of specific details and elements) and learner responses that do not progress beyond memorisation and 'recalling'. Their taxonomy and others like it provide a language and a resource for extending teaching and learning repertoires.

'Thinking skills' taxonomies are also singled out for their relevance to *critical thinking* and *metacognition*. Empirical research suggests that the particular skills of critical thinking and metacognition are also worthy of focus in student support. Critical thinking generally implies 'evaluative thinking' and, for theorists of a more philosophical persuasion, 'value'. Moseley et al. (2004) recommend Halpern's work, as an in-depth psychological perspective on critical thinking. Halpern provides a general-purpose framework designed to help people to become more knowledgeable about their own thinking. She adopts a broad and metacognitive definition of critical thinking, as 'thinking that is purposeful, reasoned, and goal directed...and effective for the particular context and type of thinking task' (Moseley et al. 2004:26). She calls this 'mindful thinking'.

Metacognition also appears to be an important concept in the thinking skills armoury. For some theorists it performs an overarching function. It is generally taken to be a process of 'self-regulation'. In further education, the use of reflection and concepts such as the reflective practitioner (Schon 1993) can be seen as exercises in metacognition. Moseley et al. (2004:8) present a range of well-known elements within such a strategy, such as: 'setting goals for learning', 'using effective strategies to organise, code and rehearse information to be remembered', 'establishing a productive work environment', 'using resources effectively', 'monitoring performance', 'seeking assistance when needed', 'holding positive beliefs...', and 'experiencing pride and satisfaction with one's efforts.'

However, ideally thinking skills frameworks should be designed to be a heuristic device to organise pedagogical interventions to ensure that students are engaged with content at different (lower and higher) levels of cognitive demand. Perhaps the most realistic approach is for lecturers to have a simple framework of cognitive challenge in mind during teaching, as a means of monitoring the kind of thinking and cognitive demand expected of students when covering a topic. The simple four-category system developed by Moseley et al. (2004) is an example suitable for this purpose. It is a synthetic model accommodating several of the taxonomies they reviewed. It is also all-embracing (covering conative and affective and metacognitive dimensions). Briefly, the framework comprises – the following three ‘cognitive skills’, namely, i) information gathering (recalling); ii) building understanding (concept formation); iii) productive thinking (reasoning; problem solving and creative thinking); as well as iv) strategic and reflective thinking (which is supported by value-grounded thinking and includes critically reflective thinking).

It is important to bear in mind, however, that most of thinking skills theorists do not make overarching claims regarding transferability. Moseley et al. (2004:7) use the term ‘translatable’ rather than ‘transferable’. The former ‘does not imply that exactly the same process is used in different contexts. It suggests that although the process or processes are adaptable, they still retain a “family resemblance” across situations, so that the meaning of a process such as “summarising” or “evaluating” is preserved’. Generally, more modest claims are made, that transfer within domains is possible but that empirical evidence strongly challenges claims about cross-domain transfer. Even where thinking skills can be taught successfully with content knowledge, there is no evidence of transfer beyond the domain concerned. However, as Cornford (2002c:89) remarks: ‘Successfully attaining near transfer is enough of a challenge’.

Focusing on the development of thinking skills with content knowledge would thus appear to be the most efficacious approach in the FET context, bearing in mind that thinking skills vary between subjects and levels. However, although cases have clearly been made for the efficacy of teaching thinking skills within the context of content knowledge, there are, as previously noted, philosophical arguments that this is unnecessary in knowledge-rich domains such as maths and science and this idea could be further explored at the FET/VET level.

Thinking skills frameworks *do*, nevertheless, offer generative taxonomies, models and frameworks for understanding, planning and executing teaching and learning. The deployment of thinking skills or cognitive challenge frameworks is thus considered worthy of consideration in the South African FET context. This vast literature has only recently entered further education debates (even in higher-level courses leading to degrees). Ultimately the idea is that even a well-developed and planned curriculum, incorporating the development of thinking skills or cognitive challenge, is likely to require added attention

and support. In view of the contemporary importance given to 'thinking workforces', it is valid to argue that more understanding of integrating thinking skills with content is required in vocational education.

Theory and practice

As was the case with the relationships between thinking skills and content knowledge, the relationships between theory and practice also hinge on philosophical premises regarding how knowledge is understood. The non-universalist arguments apply again. Bernstein's arguments regarding the differential structuring of forms of knowledge are also pertinent here. Non-universalists advocate theory-led approaches.

Theory-led approaches

From a non-universalist point of view, the issue becomes, as philosophers Clarke and Winch (2004:510) put it: 'How does one apply theory? After all, a theory is an intellectual construction and technical operations involve manipulation of the physical environment. So, how do they connect with each other?' Likewise, for Eraut (2000:259):

We have shown that learning in the workplace is very different in kind from learning in school or college. Thus learning in one context will not easily transfer to the other. Nor will knowledge and skill transfer without being resituated in the new context, which will require significant further learning [...] The attributes and dispositions required for lifelong learning in the workplace cannot be acquired outside the workplace; and a significant amount of preparation for work can only be undertaken in employment. To pretend otherwise would be to deceive the public and limit the quality of the outcomes of both general and vocational education.

As already noted, cross-domain transfer of learning is regarded as more difficult to secure than intra-domain transfer. Regarding theory and practice, although the subject domain is constant, the change from formal setting to practice setting (or vice versa) renders this type of transfer more complex than, say, the application of theory to a task within the classroom setting. Yet, as Cornford (2000c:87) reminds us: '[t]he whole *raison d'être* of vocational education is for skills and learning to be established in such ways that they transfer more generally and specifically to the wider environment'. The goal is to achieve a situation where theoretical knowledge becomes, to some extent, embedded in practical skills.

Theory-led approaches are traditional modes where acquisition of different forms of knowledge is separated. Propositional knowledge is acquired formally and process knowledge is acquired through placement or practicum, for example. For most commentators, such approaches maximise the likelihood of successful theory-practice

transfer. For Clarke and Winch (2004:510-11), theory-led approaches require a *deductive* relationship between theory and practice. This involves drawing conclusions from premises: 'the relevant part of the physical theory has to be first entertained in the mind of the worker'. Clarke and Winch recommend this approach because of the nature of theory itself, as, 'interconnected bodies of propositions or norms that have a more or less general application so that they do not simply apply to particular cases but to classes of cases'.

Non-universalist literature thus argues that theory should be taught separately from practice initially, and later cross-referenced with practice - in a graduated and 'scaffolded' way, in simulated work environments and probationary practice. (The Vygostkian term 'scaffolding', at its broadest, refers to providing timely assistance contingent on students' progress). Although such theory-led, deductive approaches are recommended as more in keeping with an 'educational' approach to student support, much of what has been discussed has not been empirically tested, particularly in the vocational context. It is further acknowledged that choice between the two approaches to theory-practice relationships, practice-led and theory-led, also depends on level and subject. One could argue that forms of theory-led and practice-led approaches will be required at different stages of a learner-worker's career. Some workplace learning requires acquiring more practical or technical skills, practice or know-how, whilst other occupational learning requires the acquisition of more theoretical understanding (knowing why). This implies phases of theoretical input followed by phases of practical consolidation or opportunities to use theory deliberately in practical work.

Finally, although the non-universalist school has things in common with situated learning theorists in that they both argue that transfer is difficult, an important distinction is that proponents of situated learning tend to focus on workplaces and informal contexts. As implied earlier, the danger is that this position can lead proponents to eschew the notion of knowledge difference and the need for any formal learning at all.

Literacy

The non-universalist strategy for addressing the question of literacy 'transfer' is that of teaching literacy with content knowledge.

Teaching literacy with content knowledge

Most arguments in the literature point to the deployment of embedded and integrated approaches to literacy in vocational education wherever practicable (for example, Stasz, Hayward, Oh & Wright 2004; Falk & Miller 2001; McKenna & Fitzpatrick 2004). The main rationale is increased transfer.

As Falk & Miller (2001:54) put it:

There is an equally convincing set of research that shows that basic skills, like most learning, do not transfer easily to other tasks and contexts...without additional on-site learning to aid the transfer-of-learning process [there is a] need for a bridge of some kind between decontextualised learning....and the vocational contexts of use....in which those skills are expected to be applied.

The embedding of literacy also applies to practice-based and simulated learning environments: the general principle being that learners are assisted with a new literacy demand at the point where it occurs, that is, during the learning of vocational theory or whilst engaged in a vocational task: 'literacy and numeracy are operationalised as integrated or embedded competencies within applied tasks' (Falk & Miller 2001:54).

A new angle on embedded literacy is currently being explored under the auspices of a UK research project entitled 'Literacy Practices in Further Education' (Mannion & Ivanic 2004). Taking a social practice starting point, the aim of the first part is 'to research the interface between the literacy practices which might lead students to success...and the literacy practices in other domains of their lives and to mobilise the latter to enhance learning on college courses'. This involves the research team in mapping of literacy demands associated with student learning across a wide range of further education courses. Although teaching literacy with content knowledge is seen as most likely to increase the likelihood of transfer, clearly this approach *carries particular staffing and staff development implications* which will be discussed in Chapter 4.

Language

The non-universalist strategies for addressing the question of language 'transfer' is that of i) teaching language with content knowledge; and ii) subject-specific integrated language teaching.

Teaching language with content knowledge

In the language literature, theoretical underpinnings seem to shift according to the kind of language proficiency being addressed. Cummins's (1979, 1981) differentiated between basic interpersonal communication skills/BICS (requiring a communicative approach) and cognitive academic language proficiency/CALP (requiring a cognitive approach) (in Reilly 1988:2). This is explained by drawing directly from Boughey (2005a:7). Using research with bilinguals, Cummins and Swain posit a model of language proficiency consisting of two intersecting axes. The horizontal axis attempts to describe the amount of contextual support available for making meaning in language use. In some language use situations, contextual

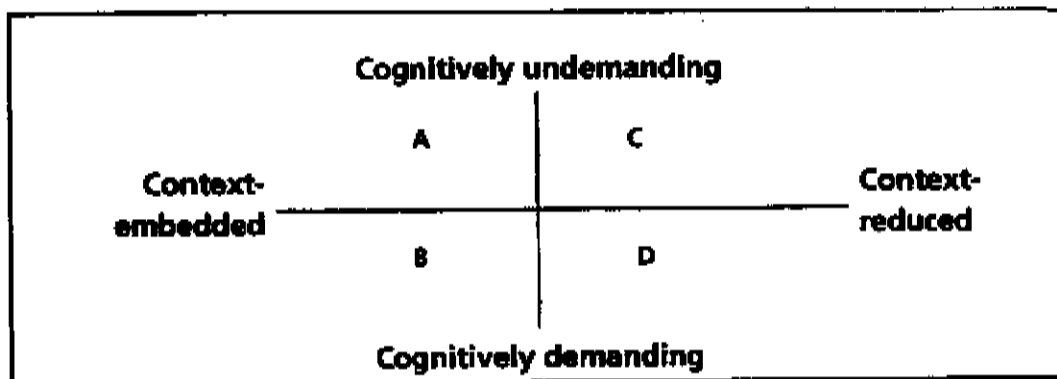
support is rich. In a face-to-face conversation, for example, speakers can use intonation and other linguistic features as well as gesture and facial expression to support meaning making. Support for meaning is also often available in the physical situation. A conversation which takes place in a kitchen, for example, would allow a speaker to pick up a kettle and ask 'Do you want a cup of tea?' with the result that physical objects in the immediate surroundings provide support for meaning making. Cummins and Swain term this sort of language use 'context embedded'.

At the other end of the continuum exist situations with no support for meaning making. A student writing an academic assignment, for example, needs to convey what she or he wants to say using only the symbols on the paper, and anyone reading an academic paper is similarly deprived of support for meaning making. For Cummins and Swain, language use in this sort of situation is 'context reduced'. Distinctions in the amount of contextual support available lead to differences in the language use itself. In context embedded situations, language need not be explicit. In context reduced situations, language needs to be highly explicit as there is no other support for the making of meaning. Students who have experience only of meaning making in context embedded situations often do not appreciate the need to be explicit in context reduced situations involving writing. Thus, as a feature of poor writing, inexplicitness can be attributed to a lack of familiarity with language use in some situations and not with a lack of facility with the language *per se*.

The vertical axis of Cummins and Swain's model relates to the cognitive demand of any task involving language. Tasks can be cognitively demanding or cognitively undemanding. When these two axes are related in a figure (see Figure 2.1 on page 44) then it becomes possible to plot four different areas of language competence. Language events located in quadrant 'A' of the model are rich in support for meaning and cognitively undemanding (a conversation between two old friends which takes place in a kitchen would typically be located here), while events located in quadrant 'D' have a high cognitive load and any meanings need to be conveyed without paralinguistic or other forms of support. The need to write an academic essay or read a journal article would typically fall into this quadrant.⁶

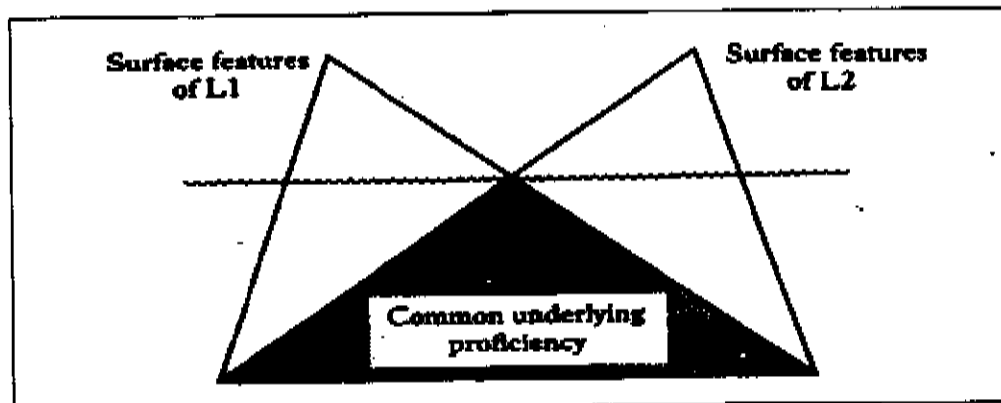
⁶ The model has potential for understanding language use in work-based learning. In a work situation, for example, it could be the case that cognitively demanding language use takes place in a context which is rich in support for meaning (in quadrant B).

Figure 2.1: Range of contextual support and degree of cognitive involvement in communicative activities (Cummins & Swain 1984)



Cummins' and Swain's model has allowed practitioners working in the field of student academic support to make sense of a number of observations. Some students, for example, appeared to have greater facility in using English in face-to-face situations (when talking to lecturers or when involved in group work, for example) than in writing or reading. However, as a result of their research into bilingualism, by 1984, Cummins and Swain posited a further model of 'common underlying proficiency' leading to a 'dual iceberg' representation of bilingual proficiency (see Figure 2.2).

Figure 2.2: The 'dual iceberg' representation of bilingual proficiency (Cummins & Swain 1984)



In developing both the model of language proficiency and 'dual iceberg' representation, Cummins and Swain make a distinction between the 'surface features' of the language (what we see and hear in terms of linguistic structure or 'grammar', intonation, etc.) and the underlying proficiency. This underlying proficiency refers to the ability to use language for different 'functions' and in different kinds of situations (involving context embedded or context reduced language use and different levels of cognitive demand). Language, for example, can be used to describe, to define, to classify and to evaluate. Development of the ability to work with what might be termed 'higher order' linguistic functions does not

occur naturally but is dependent on the sort of linguistic experiences available to learners as they acquire the home language. Some of these experiences will be schooled experiences, others will take place in the home or other social contexts.⁹ The distinction between 'surface features' and 'underlying proficiency' is important in accounting for what we see and hear in language use. Learners need to understand the function of, say, classifying or defining, at a 'deep' level if they are going to be able to produce 'surface features' which are meaningful.

Using their research with bilinguals, Cummins and Swain go on to argue that underlying proficiency developed through using the first or 'home language' becomes available for second or additional languages (hence the 'dual iceberg' representation). Indeed, in her review of the international FET literature, Harris (2005:53) argues that the rationale for teaching language with content is less about the direct transfer of language skills to content knowledge than about language development supporting the development of thinking skills in relation to content knowledge and 'higher order' linguistic functions. As Platt (1996:3) puts it, the aim is to 'promote higher-order thinking skills such as evaluation, synthesis and analysis in traditionally hands-on environments'. Teaching second language with content knowledge is seen as enhancing the acquisition and development of thinking skills as well as language skills.

Although there is little evidence in the literature of articulated, theorised relationships between literacy and thinking skills, in practice it seems that many approaches to literacy development *do* also include attention to thinking skills. This is especially the case with approaches that adopt a more cognitive, 'performance' (Bernstein 1996) philosophy and pedagogy that is closer to formal education. However, prevailing 'competence' orientations and discourses of adult literacy and basic skills do not explicitly foreground thinking skills. Theorists involved in thinking skills see the potential for greater connection. However, it does seem as if opportunities for linkages with thinking skills have been missed. As Livingston et al. (2004:56) observe: 'Language and literacy are powerful resources for supporting the development of thinking; for example, specific words carry within them patterns of thinking – such as "claim" which calls for evidence – and writing ideas down enables them to be examined, critiqued and revised.' Furthermore, as Moseley et al. (2004:59) argue: 'Because strategic thinking and reflection are of value in all kinds of learning and at all levels, they should form part of all education and training (including work in basic skills and programmes addressing the needs of all students who find learning difficult)'. Looked at in this way, the judicious integration of thinking skills with basic (literacy and numeracy) skills could be an efficacious way of enhancing the likelihood of future educational success.

⁹ Although Cummins and Swain refer to Vygotsky's (1962) work, they do not specifically refer to the notion of 'social mediation' in language learning. Clearly, the idea that the development of so called higher order linguistic functions is facilitated through social interaction would apply here however.

However, as Boughey (2002:301) argues 'much language use defies the use of logical reasoning, as its Inexplicit nature requires the use of prior or contextual knowledge in order for premises to be interpreted or conclusions evaluated'. She goes on to point out that the teaching of critical thinking is related to the construct of the 'autonomous text' (Olsen 1977) or the idea that the words which construe the text 'carry' meaning which then has to be retrieved by the reader or inserted by the writer. Understandings of language (Halliday 1973, 1978) show how meaning is constructed using the *context* as well as the text. If readers and writers do not have access to the context which informs a written text or will inform a text they are about to write, then the construction of meaning is impeded.

Harris (2005:54) points out that a significant advantage of embedded approaches is the subsuming of language development into the learners' overall vocational objectives (Roberts et al. 2005:9). As such, the focus shifts from the acquisition of language to using language as a medium to do something else - mechanical engineering, mathematics, science, social studies, and so on. Reilly (1988:2) refers to Krashen and his view that language acquisition is most efficacious when based on 'input that is meaningful and understandable to the learner'. Roberts et al. (2005:8) hold that embedded approaches also allow for better evaluation of students' language learning needs, as 'the gap between carrying out the particular task and the learner's existing...knowledge may only become apparent to the learner and the teacher as the learner carries out the practical task.'

Vocational classrooms are viewed as being exceptionally good places for language acquisition purposes because of the hands-on nature of many of the teaching and learning processes. As Platt puts it:

The hands-on component, characterised by work in pairs or small groups, highlights authentic learning through the use of a variety of tools, materials, and equipment in the production of concrete products and services...In their manipulation of tools and equipment, they talk with one another and with their teachers about the work at hand, discussing and reviewing processes and procedures as a normal part of the vocational activity (1996:4).

The recommendation emanating from both reviews is thus that literacy and language development should be as integrated with vocational content as circumstances, subjects and level permit.

Subject-specific integrated language teaching

Finally, different subjects are deemed to provide particular resources for particular forms of language development. The physical sciences are held to be a particularly good 'source of meaningful and relevant language input' (Reilly 1988:3). There tends to be an abundance of 'texts with extralinguistic devices (diagrams, charts, pictures)' which can help to clarify

meanings. The social sciences are seen as having the potential to 'promote the development of critical concepts' and to support learners in 'how to perceive relationships and integrate information and concepts within the context of a main idea or topic' (Reilly 1988:4-5).

CONCLUSION – AN APPROACH TO STUDENT ACADEMIC SUPPORT

Four areas of concern are identifiable in the literature:

- the development of thinking skills;
- 'academic' literacy;
- language; and
- the theory-practice relationship.

Ultimately, the review of the international literature on student support in the FET college sector found evidence to support the adoption of a position on student support that is knowledge-dependent and non-universalist in its approach to 'transfer' with reference to these four components. This position is one where the concept of knowledge 'transfer' is treated in educational, rather than advocacy terms, that is, with caution. A non-universalist approach holds that near or application transfer (within a subject domain) is more tenable than far transfer (across subject or knowledge-domains) whatever the nature of the knowledge structure, and should therefore be focused on.

Non-universalist strategies for addressing the question of knowledge transfer in the four components of the remit of student academic support are those of:

- developing thinking skills with content;
- integrating literacy and/or language with vocational educational content; and
- phases of theoretical input followed by phases of practical consolidation or opportunities to use theory deliberately in practical work.

Overall, separate language and literacy provision is not recommended in the literature, except in cases where intensive literacy and language learning to reach a certain threshold is indicated. Clearly, in the South African context, language adds a very important level of transfer. However, the overall problem to be faced, it seems, is the practicability of so many skills all being linked to the vocational curriculum. There is a danger of overload and confusion of (thinking, practical/application, literacy, language) skills. A balance is required so that attention to these areas of student academic support does not detract from the learning of specialist content knowledge.

Chapter 4 discusses the teaching processes considered relevant to transfer situations and teaching for knowledge transfer within a subject domain. Before doing this, Chapter 3 draws on valuable lessons gleaned from the Academic Development movement in South African higher education institutions. It also illuminates on other factors considered pertinent to student 'success' in the South African higher education context.

Chapter 3

LESSONS LEARNT IN THE SOUTH AFRICAN CONTEXT

INTRODUCTION

This chapter:

- provides an historical perspective on the rise and subsequent development of the Academic Development (AD) movement in South African higher education institutions;
- offers some of the main lessons learnt from student support in higher education in the South African context; and
- identifies further areas of concern requiring student support relevant in the South African context.

As with previous chapters, much of the text is drawn directly and deliberately from both commissioned literature reviews, in this case predominantly the review of the South Africa AD movement (Boughey 2005a). The chapter is considered particularly relevant for policy makers, college leadership, programme managers and heads of student support.

THE ACADEMIC DEVELOPMENT MOVEMENT IN SOUTH AFRICAN HIGHER EDUCATION

In its relatively short history, the AD movement in higher education has gone through a number of theoretical and ideological shifts which have contributed to the complexity of the forms in which student support initiatives now manifest themselves at an institutional level. Boughey (2003) and Volbrecht & Boughey (2004) identify three phases in the history of the AD movement in South African higher education. These phases are broadly termed:

1. 'Academic Support' (the first phase);
2. 'Academic Development' (the second/'infusion' phase); and
3. 'Institutional Development' (the third phase).

However, before proceeding with an abridged account of the AD movement, it is important to note that in reality these three phases are not distinct from each other, and are indicative of more of dominant discursive formulations than actual periods of time. Following Chouliariki and Fairclough (1999), the formulations are understood to give rise to 'conjunctures' or relatively stable sets of social practices around specific projects (in this case, student support). This is an important point as, in many respects, the student support practices which have characterised each phase (or each discursive formulation) have co-existed in many cases and, in some, continue to do so alongside dominant practices.

The definition of AD as 'an open set of practices concerned with improving the quality of teaching and learning in higher education' offered by Volbrecht and Boughey (2004:58) attempts to capture this phenomenon with the word 'open' signaling that the student support practices which partly constitute contemporary AD work often stem from very different ideological and discursive positions. Thus, the assumption is that the identification and interrogation of these discursive formulations is important since it allows the potential of the practices they give rise to, to be evaluated more thoroughly for the context of the FET college sector.

The account of the higher education AD movement which follows offers a number of important lessons for student support. In tracking shifts in the development of the AD movement to identify lessons relevant to the FET college sector, the following account attempts to:

- sketch the wider political and educational policy context of each of the three phases;
- explicate some of the dominant ideological and discursive positions, 'commonsense'; understandings and theoretical underpinnings and developments that characterised each phase and informed the structure and form of student support;
- describe the dominant structure and forms of student support these gave rise to; and
- illustrate the impact of all of the above on funding and AD staff profiles.

Phase 1: Academic Support

Phase 1: Context

The first phase of the AD movement grew out of the attempts of the historically white liberal universities to admit small numbers of black students through 'relaxed state apartheid policies' (Pavlich & Orkin 1993) from the early 1980s onwards.¹⁰ In 1983, the apartheid

¹⁰ Hunter (1989), for example, dates the origin of the Academic Support Programme at Wits to the first semester of 1981. HSRC Research Report

government passed the University Amendment Act (Act 83 of 1983), also known as the 'Quota Act', in an attempt to control the number of black students admitted to the liberal English speaking universities. The universities resisted the Act vociferously maintaining their right to admit whomever they chose on the basis of academic merit and not any other criteria. In the face of this opposition the government backed down (Behr 1987) although the Act remained on the Statute Book to be applied if the composition of the universities was deemed to be 'getting out of hand'.

Given this policy context, it is not surprising that the early student support initiatives were infused with a concern for non-discrimination and equality. When the socio-economic context of the early 1980s is considered, this is even less surprising. A state of emergency had been declared and the townships were rife with unrest. South Africa was also in the throes of an economic recession with obvious repercussions for those at the lower end of the social economic spectrum. The early efforts of those working in the field of student support were therefore directed at students who were affected personally and academically by political events (Hawarden 1985; Agar & Mashishi 1986).

Phase 1: Dominant positions, understandings and theoretical developments

On the one hand, widely held conceptions of 'disadvantage' or 'underpreparedness' at this time tended to rely on commonsense assumptions in constructing students as i) lacking skills; ii) experiencing gaps in conceptual knowledge areas; iii) in need of language development; and iv) lacking the ability to think 'critically'. On the other hand, early academic support initiatives drew heavily and, in some cases, unquestioningly on theory and practice generated in places such as Britain, the United States and Australia, particularly in terms of language development.

However, commonsense assumptions in instructing students are open to theoretical challenge. The idea, for example, that students' difficulties are related to their status as speakers of English as an additional language is open to theoretical challenge in terms of the nature of the 'language problem' itself. Is the problem simply that of students not having mastery of the 'surface forms' of the language, or is the problem much deeper and related to cognition and learning itself? Furthermore, as Starfield (1990a) and others began to point out, approaches and methods generated overseas are not always appropriate to the South African context because the students they address have *qualitatively* different needs.

For example, Cummins and Swain's (1984) basic interpersonal communication skills and cognitive academic language proficiency distinction and 'dual iceberg representation of bilingual proficiency' (see Chapter 2) had an influence on thinking at all levels of research and educational practice in South Africa at this time, not only the field of AD. However, as a result of research conducted in primary school classrooms in the late 1980s, Macdonald

(1990a, 1990b) concluded that the early shift into the use of an additional language as a medium of instruction in most South African primary schools meant that the majority of children had not consolidated development in their home language before the shift was made. This meant that the underlying proficiency necessary to support language use in the additional language had not developed.

This was an important observation with huge implications for language development work in South Africa at the time, as dominant language teaching approaches 'imported' from overseas in the form of textbooks and other learning materials were developed on the assumption that common underlying proficiency had been developed through the home language. Thus, in places such as Britain and the United States, materials had been developed at tertiary level, for example, for students who had come to places such as Britain and the United States and who had been relative 'high flyers' in their home countries. These students had developed understandings of language use in context reduced and cognitively demanding situations and had command of higher order functions such as classifying, defining, etc. They therefore needed only to learn the way these language uses and functions were externalised through the surface forms of the additional language. This was a qualitatively different need to that of the majority of South African students.

The significance of Cummins and Swain's and Macdonald's work was appreciated by many of those working in Academic Support programmes in the early phase of the AD movement. By 1990, for example, Starfield was problematising dominant understandings of students' problems as being related to the 'surface features' of the language and to their status as speakers of English as an additional language. Citing Widdowson (1979), Starfield goes on to note that dominant approaches based on the teaching of 'English for Special Purposes' (ESP), developed in places such as Britain, are problematic as they involve 'translating' functions presumed to have been developed in the home language related to, for example, the construction of scientific knowledge, into the additional language. In South Africa, the problem was qualitatively different as the functions were not necessarily available for 'translation'. Students' 'language problems' therefore began to be reconceptualised as involving cognition and this had implications for the way language development would need to be addressed. The idea, for example, that students' language needs could be addressed in general language classes focusing on the teaching of the surface features of the language, began to be questioned and this resulted in a growth of initiatives which began to work with language in specific disciplinary areas such as science and engineering, and which related language development to that of cognition.

Other theory which informed the practice of those working in the area of language was derived from the work of the composition theorists – researchers with a special interest in studying writing. A wealth of work from other researchers who had studied the writing process such as Emig (1977); Raimes (1885) and Zamel (1982) and from theorists such as

Flowers and Hayes (1980) who studied writing as a cognitive process was also used to inform practice. The observation that students who appeared to be able to use English relatively well orally but then floundered in academic writing was explained by the basic interpersonal communication skills and cognitive academic language proficiency (BICS/CALP) distinction. Attempts to develop students' language proficiency therefore came to embody a special focus on developing CALP, and thus on developing writing, rather than simply teaching 'general' English.

The issue of language has long been key to thinking and opinion in the AD movement. As Brumfit (1987:1) notes, "Language" and "Education" share two disadvantages that many other areas of study avoid: they are both too familiar'. The familiarity of language and the fact that everyone has learnt at least one language in their lives (their home language) meant that language development in the initial efforts of the AD movement was often based on commonsense and unexamined assumptions. The theories outlined above challenged much of this commonsense and shifted language development practices substantially. These understandings were to be developed substantially in the next phase of the AD movement, although commonsense assumptions continued (and continue) to exist (Boughey 2002).

Also taken up during this first phase of the AD movement, in terms of theories of learning, is the distinction between deep and surface approaches to learning (Marton & Säljö 1976; Entwistle & Ramsden 1983; Biggs 1987). Deep approaches to learning are often associated with attempts to understand, rather than merely remember, and with intrinsic motivation (Fourie 2003) in that the student seeks to satisfy his or her own curiosity and learn for learning's sake. 'Surface' approaches, on the other hand, focus on remembering without necessarily understanding and integrating new knowledge with existing or new schematic frameworks.

Once these two approaches to learning had been identified, the strategies or behaviours associated with them could also be observed. Students adopting a surface approach to learning, for example, tended to simply try to remember words or formulae and then to apply these to problems in a mechanical fashion. A deep approach, on the other hand, would be more likely to result in behaviours intent on integrating new learning into a coherent schema. Related to these two approaches are descriptions of students as 'active' or 'passive' learners (see, for example, Grayson 1991). 'Active' learning is related to the construction and internalisation of new understandings and schema through interactions with the environment or through activities that challenge existing understandings, and is associated with a deep approach whilst 'passive' learning is associated with the receiving of information simply to be remembered.

Phase I: Structure and form of student support

For the relatively few black students admitted to the historically white English-speaking universities in this early phase, the most frequently encountered student support initiatives were offered under the umbrella of the Academic Support Programme (ASP). Located in specialised units, or run by specially appointed personnel at departmental level, these initiatives assumed that it would be possible to address the phenomenon of student 'underpreparedness' in remedial fashion and in isolation from teaching and learning in the disciplines. In many respects, the early ASPs were 'commonsense' both in their understandings of phenomenon of student 'underpreparedness' as well as the measures intended to address it. Key to early academic support programmes was a deficit assumption about the students they served in the context of an assurance about the 'rightness' of the practices which characterised the institutions to which they had been admitted. Thus, academic support initiatives tended to 'sit apart' from the mainstream teaching and learning activities of the rest of the institution.

This position was ultimately untenable (even though attempts to support students in this way exist even today). The effect of the adjunct nature of programmes on student attendance and commitment to developing the gaps the programmes sought to address is something which plagued the AD movement through this early phase, and was one of the factors in the call for 'mainstreaming' AD which characterised the next phase of the movement's history. Problems with low attendance at academic support initiatives (regardless of whether or not they were credit bearing) was noted as was some resentment displayed by students at having to enroll for ASP courses and programmes. Associated with this resentment was the stigma at being singled out as being 'different'. Furthermore, the separation of academic support from academic subjects meant that many students were not able to perceive the benefits of academic support initiatives in their mainstream classes because of their 'diffused' nature. This characteristic came in for heavy criticism in the next phase of the AD movement, particularly as theoretical positions developed around the nature of 'becoming academic'. Although the dominant forms of support have not changed substantially over the years in form in that institutions continue to offer 'bridging' programmes, pre-university courses, foundation courses, tutorial programmes, workshops and language courses, the theoretical and ideological positions informing initiatives have shifted.

While the first phase of the AD movement was about providing support to students *directly*, the second phase had a much more embracing understanding of the notion of support constructing it as occurring *through* the development of curriculum and appropriate teaching methodologies and, thus, through work 'in the mainstream'. An element of early AD work that was important in initiating areas of this endeavor, and which remains significant for the provision of student support, is work directed at identifying the potential of students to succeed in higher education, in spite of their poor scores on the Senior Certificate examination and in spite of their history of 'disadvantage'. Many of these initiatives involved the identification of elements of cognition and affect (motivation, attitudes)

impacting on academic success (Potter & van der Merwe 1992, van Dyk & van Dyk 1993) although there was also a major focus on correlating scores on the Senior Certificate examination with performance at first year level (see, for example, Badenhorst, Foster & Lea 1990).

Although the findings of studies conducted in this early phase along with the use of specific test batteries might not have stood the test of time, particularly in terms of theoretical challenges to, for example, the use of psychometric tests [with Wallace & Adams (1989), for example, making one of the earliest challenges], elements of this work relating to the admission and placement of students on appropriate programmes of study and the development of curricula which are responsive to the student needs identified by admission and placement procedures once they have been enrolled, remain important today. Selection and placement of students is important because students who have been placed in a programme of study which is conceptually or practically too demanding will not be able to benefit from it. Information about students' entry-level abilities and knowledge, moreover, has the capacity to feed into curriculum development and teaching methodology, and allow mainstream lecturers to articulate the curriculum with students' needs and address problem areas once teaching begins.

Phase 1: Funding

Although universities did contribute to the staffing of ASPs in the early phase, a large number of people working in them were employed on the basis of 'soft' funding offered by donor agencies. Hunter's (1984) survey of ASPs at the historically white liberal universities Rhodes, Natal (Durban and Pietermaritzburg), UCT and Wits provides a useful indication of the way posts were funded. Although ASPs were undoubtedly small in 1984, the reliance on donor funding is evident with only UCT, of the four universities surveyed, making a significant commitment to academic support in terms of established posts.

No other detailed data are available in the literature. However, the position regarding the way posts were funded did not appear to change over the years. By 1997, when Moyo, Donn and Hounsell conducted their needs assessment and audit of the AD movement, three hundred and seventy staff were employed in AD units and programmes across South Africa, with an average of fourteen staff members per institutions, but less than half of all these appointments were permanent (Moyo et al. 1997:52). It is also useful to consider the effect of funding on the Academic Support staff profile.

Phase 1: Staffing

Staffing of the early ASPs was influenced by the nature of the perceived role of academic support practitioners and funding. Academic support was largely constructed within the role of i) developing the academic and study 'skills' lacked by students because of their poor

schooling backgrounds; ii) filling gaps in conceptual knowledge which were also due to schooling; iii) developing language competence; and iv) contributing to students' ability to 'think critically'. Academic support personnel were also allocated a pastoral role in terms of looking after a black minority who were at risk because of problems related to finance, the places they lived and the unrest in the townships in the 1980s and early 1990s (Harwarden 1985). The majority of staff in the early ASPs were therefore appointed on the basis of their ability to perform these tasks rather than on the basis of their ability to conduct research and to teach in the mainstream disciplinary areas. Many of the early academic support practitioners were minimally qualified, therefore, holding qualifications only at bachelors or, at most, honours levels. Some were appointed on the basis of their experience as school teachers (particularly in mathematics and the sciences). The criteria for appointment to the early ASPs were significant in constructing staff as 'different' to those employed in the mainstream academic endeavour and thus to marginalising academic support work. In the next phase of the AD movement this situation then influenced the ability of AD practitioners to influence change at a wider level and thus improve student support provision.

Even if the roles allocated to academic support practitioners had been more prestigious in contexts which valued research into the disciplines above all else, problems in attracting better qualified staff would still have remained because of the lack of established posts in ASPs. Many academic support staff were employed on the basis of short term contracts (often lasting only one year) because of donor funding and because much of this funding was aimed at 'projects'. Typically, in order to secure funding, a proposal would be written for a specific project with a given time span. Donors would agree to fund the project and universities appoint staff for its duration only.

The precarious and short term nature of much early academic support work led to staff i) not committing themselves to a career in the field; and ii) 'jumping ship' if better career opportunities elsewhere in the university offered themselves. A number of academic support staff were able to move into junior lectureships in the disciplines having worked in departments as ASP tutors and proved their worth in this capacity. Although a small cadre of AD professionals did develop over the years, this was not large and AD has long suffered from having to recruit new personnel who set about 'reinventing the wheel' by relying on commonsense solutions to the 'problems' which confronted them because they were unfamiliar with the theory informing their work, and because they had not learnt from the lessons of others over time.

The reliance on donor funding and the lack of commitment at an institutional level to AD has had profound effects on the AD movement and its capacity to fill the various roles allocated to it over time. If Student Support staff cannot be assured of long term employment with prospects of career advancement, then their commitment to the AD endeavour is challenged and the cadre of professionals needed to take both theory and practice forward is

threatened. The propensity of AD staff to move into more prestigious areas of employment in the university sector in the early AD phase was not only due to the nature of their employment on short term contracts, however, but also to the marginalised nature of AD work itself. Early student support initiatives were academic in that they were located in the academy and dealt with teaching and learning issues. However, they did not have the status of the mainstream disciplines and the fact that staff were qualified at relatively low levels and did not, for the most part, engage with research contributed to their 'difference'.

Phase 2: Academic Development

Phase 2: Context

The origins of the initial ASPs were attempts to address the problems of the small number of black students enrolling at the historically white English-speaking universities in the early 1980s. By the end of the decade, and particularly following the release of Mandela in 1990, it was apparent that political change was inevitable. With this acknowledgement of political change came the understanding that universities would soon become very different places with their demographics representing the more general demographics of the country rather than those of a white elite.

In terms of the wider policy context, the early 1990s have been characterised by Kraak (2001:87) as the 'pre-taking of power era' involving the 'mobilisation of the entire anti-apartheid movement behind the task of forging new policy propositions across the entire gamut of human existence'. For Higher Education, the most important policy document produced during this period was the National Education Policy Investigation (NEPI) Report (1992b) on post-secondary education. The NEPI has been variously termed a unique 'civil society initiative' (Badat 2003:6) and a 'people's education project' (Cloete 2002:94). Given this background, equity was obviously a major issue and is defined in the documents as 'the improved distribution of educational resources to disadvantaged communities' (1992:11) and was constructed largely in quantitative terms. In higher education, this involved the provision of increased access for black students to institutions which still remained unequal in terms of resources and capacity. In the face of this overwhelming demand and need for equity, the relatively small and focused efforts of earlier academic support initiatives and the idea that academic support should cater to a 'disadvantaged' or 'underprepared' minority rather than a majority came in for major challenge (Mehl 1988; Moulder 1991).

The idea that 'underpreparedness' would eventually be a majority phenomenon was supported by the experiences of those working in ASPs which had been set up on historically black campuses (such as the University of Bophuthatswana) as the 1980s wore on. Partly as a result of the nature of South African society at that time, but also because of important theoretical differences, by 1986 those working on historically black campuses had

established a professional organisation named the South African Association of Academic Development (SAAAD). SAAAD existed alongside a group of practitioners from the historically white liberal campuses who had run an annual conference and who had published proceedings from that conference as *ASPECTS*. Other practitioners had become members of the South African Association for Research and Development in Higher Education (SAARDHE) and had published in the association's journal the *South African Journal of Higher Education* (SAJHE). SAAAD became a rallying point for what, at that time, emerged as a vociferous and apparently radical opposition to dominant student support practices. Over time, a growing number of practitioners working at the historically white institutions came to adopt positions advocated by SAAAD and, eventually, to join the organisation which later became an overarching professional body for academic development practitioners.

Phase 2: Dominant positions, understandings and theoretical developments

Key to the positions advocated by SAAAD was an objection to understandings of 'deficit' or 'disadvantage'. Mehl summarises the positions thus:

The questions which are being addressed have changed from how the "underdeveloped" are "developed", to examining the basic underpinning of the institutions themselves. In the process it is becoming clearer that in relation to the realities of present-day South Africa it is not simply a case of students carrying various educational deficits onto the campus with them because of the socio-economic and political dispensation, but rather a case of the universities themselves, as represented by academic and administrative staff, being deficient, if the vision of a non-racial, democratic South Africa is to be realized (1988:17).

In many respects, the shift in understanding is indicative of what Gee (1990) terms a 'social turn', involving a movement away from a focus on individual behaviour and individual minds to a focus on the social and the cultural and the way these are implicated in power structures. Importantly, it also involves a questioning of the attribution of agency to students in terms of the determination of their own success. As Mehl (1988:18) himself points out, the idea that change should take place at institutional rather than individual level is linked to *People's Education*, a radical reform movement which aimed to use curricula¹¹ to bring about change in South African education. However, for Mehl (1988:18) this process had to be linked to that of Africanisation or of 'bringing the university more into contact with the stark reality which the colonised student represents'.

¹¹ The term 'curricula' is used in its widest sense here and is intended to embrace the 'how' as well as the 'what' of teaching. Curricula would therefore include teaching methodology and assessment practices as well as a negotiated understanding of what should be taught.

In the literature, the second phase of the AD movement in South Africa can reasonably be dated to the publication of Walker and Badsha's (1993) seminal paper arguing for the 'infusion' of AD into the mainstream and describing how this was being achieved at the University of the Western Cape. The so-called 'infusion model' advocated by Walker and Badsha (1993) was, in many respects the result of long standing critiques of practice and its underpinning assumptions in the Academic Support phase which had emerged from the mid 1980s onwards. These critiques centred on a number of issues including the changing nature of South African society as apartheid came to an end; the construct of academic support itself; and experience gained from nearly a decade of offering academic support programmes separately from mainstream subjects.

Essentially, the issue of *transfer* of skills or knowledge taught in separate academic support tutorials and special courses to mainstream learning remained a problem that inevitably rebounded on ASP staff themselves. If students in mainstream classes appeared unable to perform at the levels of their more 'prepared' peers after having passed through a support programme, then the tendency was to blame the ASP and the staff who taught it rather than to question and theorise the nature of the intervention itself. One of the most frequent criticisms still made by mainstream staff, for example, is that students who had completed reading courses still *cannot* read. However, as the shift from Academic Support to Academic Development continued, theorising around 'infusion' of AD into the mainstream took place.

Dominant theory in this phase centred on the idea of the university as a 'community of practice'. One of the most influential texts at this time was *Literacy by degrees* (Taylor, Ballard, Beasley, Bock, Clanchy & Nightingale 1988) a collection of papers which, as its title suggests, critiques the idea that students should be 'prepared' for university study (or academically 'literate') at the time they enroll in favour of the idea that the ability to read, write, reason and argue in ways appropriate to the university should be the goal, or endpoint, of tertiary study. Drawing on Australian experience, the authors argue for the need for students to develop what is termed a 'cultural understanding' (Ballard & Clanchy 1988) of the university itself if they are to be able to reproduce the social practices (in reading, writing, etc.) appropriate to it.

Gee's (1990) *Social linguistics and literacy: ideology in discourse* proved to be another seminal text which built on the idea of 'cultural understanding'. Gee uses the term 'Discourse' (intentionally capitalised) to refer to the notion of a community of practice. The term 'literacy' is then used to denote the ability to function within that community. Literacy is more than a matter of a cultural, a social, a political 'skill', however, since the practices in which it is manifest result from the values and attitudes which inform them. In practical terms, this would mean, for example, that the use of the passive in 'scientific' writing results from valuing objectivity and is thus related to an ontological position which is inherently positivist. If this argument is accepted, then merely teaching the students the form of the

passive is unlikely to be successful since they will not necessarily appreciate the values which sustain its use in scientific discourse and will not see the point of using it. Gee explicates this point by making a distinction between 'acquisition' and 'learning'.

Acquisition takes place over time through exposure to a Discourse and through contact with those who are 'literate' in it. Through this exposure and contact, novices not only acquire the forms or literacy practices which characterise, sustain and reproduce the Discourse but also the values which underpin those practices. Learning, which occurs as a result of being taught, is unlikely to enliterate novices in a Discourse. It is however important, argues Gee, as it is only through learning that *critique* of the Discourse and its practices becomes possible as learning offers a meta-frame through which it can be analysed. By introducing the idea of critique, Gee thus offers an alternative to the idea of assimilation into a community of practice which is not always present in work which understands the university from this socio-cultural perspective (see, for example, Bartholomae 1985).

Underpinning the work of Gee (1990) and Taylor et al. (1988) is the idea of literacy (in the sense of reading and writing related behaviours) as a social practice. Although Gee's construct of literacy is wider in that it encompasses behaviours other than those related to printed text, Street's (1984, 1995, 1996) 'ideological' model of literacy can be related to Gee's position. In contrast to the 'autonomous' model which constructs literacy as neutral technical skill involving the decoding and encoding of print, Street's 'ideological' model acknowledges that reading and writing involve values and attitudes to printed text which then give rise to reading practices. The ability to read 'critically', for example, is thus not only a matter of identifying arguments and evaluating their validity but also involves a predisposition to challenge, rather than revere, the 'word' of the text.

For example, in the FET college sector, engagement with a workshop manual or other document would not be dependent only on the ability to decode print but also on a willingness to engage with printed texts rather than orally. The idea of reading as a value driven practice rather than a skill thus allows for the 'setting aside' of printed text in favour of oral communication even when people are technically literate in the sense of being able to encode and decode to be accounted for (see also, Heath, 1983 on this point).

Also significant in this second phase of the AD movement was Geisler's (1994) work on academic literacy and the nature of expertise. In a wide review of research, Geisler showed how i) school-based reading and writing practices are qualitatively different to practices within the university; and ii) how school does not necessarily prepare students for university study. An example of this phenomenon is the reading comprehension which requires school students to answer questions using only information contained in the text. Students thus come to understand that the text is a source of knowledge. Higher education, on the other

hand, requires students to use information in other texts as well as information stored as prior knowledge to interrogate the text before coming to any conclusions. This practice is widely referred to as 'reading critically' and is something prized in higher education circles, yet school does not prepare students to do this.

The second phase of the AD movement also drew heavily on the work of learning theorists such as Feuerstein (Feuerstein, Klein & Tannenbaum 1991) and Vygotsky (1978, 1982) which took account of society and the role of other more knowledgeable people in explaining learning rather than merely locating it as an individual phenomenon. Feuerstein's (Feuerstein, Klein & Tannenbaum 1991) construct of the 'mediated learning experience' (MLE) defined as 'a special kind of interaction, involving a human being who interposes himself between the learner and the world of stimuli in order to mediate or give meaning to the stimuli' (Mentis & Frelick 1993:104) was attractive to AD practitioners as was Vygotsky's (1978:86) notion of the Zone of Proximal Development (ZPD) defined as 'the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or more capable peers'. These constructs not only identified a 'teaching space' which could be cognitively substantiated but also constructed a role for AD practitioners and mainstream academic lecturers within that space as mentor, model, coach or mediator of new forms of understanding and skills through the use of language and other non-language based tools. The inadequacy or lack of mediated learning experiences (MLE) in many South African students' own learning histories, particularly at school, provided an explanation for the problems such students experienced upon entering tertiary education.

Ultimately the 'social turn' which characterised the second phase of AD development allowed 'approaches' to learning to be understood as practices which are socially embedded and not individually determined. The rote learning characteristic of a surface approach can be understood as a practice which emerges because of values and attitudes. Understanding students' learning behaviours in this way allows for the stubbornness of learning approaches to be accounted for and opens up the possibility of working with students at the level of values and attitudes both in terms of exploring their own values and attitudes as well as identifying and critiquing those which characterise the institution.

Essentially, one of the first lessons of the second Academic Development phase of the AD movement related to the comparatively robust nature of the theoretical understandings of learning and language developed during the this phase.

Phase 2: Structure and form of student support

Common to all the theories outlined above was their ability to sustain an 'infused' approach to student support because of i) their acknowledgement of academic ways of behaviour as

social practices; and ii) their shared understanding that these practices are only developed over time and through contact with those who are already 'literate' in Gee's (1990) terms. This meant that they were available to challenge understandings of academic behaviours as asocial, acultural 'skills' which could be taught in special 'adjunct' classes which had dominated the early Academic Support phase. The 'social turn' in language theorising also allowed language across the curriculum approaches to be rationalised and supported since it was only within the curriculum, and with the support of mainstream academics, that access to shared practices could be gained. Thus, from the early 1990s onwards, the overwhelming drive within the AD movement at HE level has been to *incorporate student support within mainstream provision.*

Clearly a further key feature of the second phase of the AD movement involved attempts to draw mainstream staff into AD work. Walker's work (1994) focusing on the support and development of staff to research their own practice and drawing on theories of change explicated by Fullan (1982, 1991) was seminal in this regard, and resulted in a number of publications (see, for example, van Rensburg 1994) and conference presentations (see, for example, Bozalek 1993). The number of mainstream staff prepared to involve themselves in providing direct support to students or in curriculum development and other work which would contribute to student development was never large however since, as Bond (1992) points out, common to universities were 'entrenched common-sense' understandings of teaching and learning with well established roles for academics and support staff which were not conducive to this sort of collaboration.

Indeed, a lesson to emerge from the second phase of the AD movement relates to the difficulty of introducing change and more specifically to that of getting mainstream academics involved in teaching and curriculum design and, thus, in 'infused' student support. Henkel (2000:251) points out that academics draw their primary identity from, and thus owe their primary allegiance to, the disciplines. As a result, research is privileged over teaching as it is key to furthering the discipline, achieving status amongst disciplinary peers and to accessing institutional rewards such as promotion. In many respects, the second phase of the AD movement attempted to involve academics in development work by appealing to a moral and ethical imperative framed within the post-election construct of 'transformation.' This was not successful.

Nevertheless, while the 'infusion model' of the second phase might not have been successful in capturing the attention of academics, it did succeed in addressing some of the stigma and discrimination which had been inherent to the academic support phase. At some institutions, for example, student mentoring programmes were introduced alongside tutorials to address personal and other issues (Harwarden 1985) often using senior students who had managed to bridge the gap between their home backgrounds and the university

(Moulder 1991). However, the potential to 'other' students deemed to be in need of academic support still remains.

Phase 2: Funding

The largest source of funding for AD work in this second phase was the Independent Development Trust (IDT) which administered more than R70 million worth of grants to institutions on behalf of government. This was the first time that large scale state related funding had been available for AD work and as such needs to be understood in the wider policy context of the Redistribution and Development Programme (RDP) (ANC 1994). The funding resulted in an enormous expansion in the field of AD. Institutions were able to bid for funding on a three yearly basis and used their grants to set up AD structures and units at a scale never before experienced. The funding was still grant based, however, and staff continued to be appointed on short term contracts (with the consequences noted in relation to the first phase of the AD movement).

The replacement of the RDP with the Growth, Employment and Redistribution Programme (GEAR) in 1998 and the resulting fiscal constraints was to have profound consequences for AD work. As Fataar (2000) points out, budgetary re-prioritisation rather than budgetary increase became the government's main mechanism in funding its commitment to equity in education following its failure to increase the total education budget in line with inflation in the three years from 1995 onwards.

One of the most significant results of these constraints was that the 'redress funding', anticipated as a means of addressing historical imbalances in the higher education system as a whole and long awaited by historically black institutions (HBIs) in particular, never materialised. The HBIs were then hit by another funding problem. In 1988, the standardised funding formula which, until then, had only been applied in relation to the historically white institutions (HWIs) replaced the 'negotiated' budgets which had previously been available to their historically black counterparts. The HBIs were happy to accept the application of the funding formula as it was linked to student numbers and they were experiencing considerable growth in this area at the time (Bunting 2002a). When student numbers began to plummet from 1995 onwards (Bunting 2002b), many HBIs found themselves in serious financial difficulties. In the face of these financial difficulties, AD was hit seriously. As IDT funded contract posts came to an end, institutions did not pick up their costs and AD units and programmes shrank or, in the case of some institutions, were even closed down with serious implications for student support and other development work.

A second crisis in AD-related funding occurred in 1998 and effectively succeeded in bringing the second phase of the AD movement to a close. Over the course of the 1990s, the South African Association for Academic Development (SAAAD) had grown into a formidable

force which lobbied government and which effectively drove the AD endeavour at a national level. As a member organisation, SAAAD not only produced a journal and ran national conferences but also devoted a lot of time and effort to co-ordinating the development of AD practitioners by convening and funding special interest and other groups in areas such as curriculum development. SAAAD had received donor funding for this work and, by 1997, it was apparent that as a professional organisation it did not have the capacity to work at the levels required, even though a 'national office' had been established in Johannesburg and regional co-ordinators appointed. It was therefore decided to establish a more stable and overarching body, the Institute for Higher Education Development in South Africa (IHEDSA) with a director and other structures. IHEDSA was launched in December 1997 but by September of the following year, a corruption scandal in the IHEDSA national office resulted in its major funder (USAID) withdrawing and requiring the return of all remaining monies. As IHEDSA crashed, so too did SAAAD, the professional organisation which had given birth to it, along with hopes for sustained development work in the higher education sector.

Phase 2: Staffing

The second phase of the AD movement was a time of enormous growth in AD 'knowledge' (evidenced in the size of conference proceedings and other publications which appeared throughout the phase) and expertise. The contribution of SAAAD to the development of AD practitioners through the establishment of special interest groups, the work of regional co-ordinators and the running of an annual conference has already been mentioned. Other initiatives which sought to further the professional development of AD workers also bear noting, however. The relatively low level of practitioner qualifications was discussed in relation to the first phase of the AD movement. Many AD workers were qualified only at honours level and this had implications for their ability to engage with the mainstream academic staff at the level required by the 'infusion' model.

Over time, AD practitioners who had stayed the course and remained in the field, despite funding and other constraints, had qualified at master's level and had even begun to qualify at doctoral level. Given this expertise, the introduction of master's programmes in Academic Development therefore presented itself as a solution to the need to upgrade the qualifications of new entrants to the field. Very few graduates emerged from these programmes, however, as the number of practitioners working in the field fell due to funding constraints and the centres and units running the programmes were faced with closure as budgetary constraints hit even deeper. Although the second phase of AD work in South Africa was characterised by an enormous growth in knowledge and expertise, this was not sustainable in the long run and much has been lost in terms of human capacity.

Phase 3: Institutional development

Phase 3: Context

The final phase of the AD movement can be dated from the late 1990s onwards. By the mid 1990s, a number of policy initiatives had begun to address the need for systemic change in the South African education system and, more particularly, the need for 'high skills' (Kraak 2001) in the context of globalisation. The establishment of the South African Qualifications Authority (SAQA) and the introduction of the National Qualifications Framework (NQF), for example, made enormous demands on institutions to re-curriculate and develop their learning programmes using the construct of the learning outcome as an organising principle. Many institutions went into a process of internal restructuring at the same time involving the disbanding of departments and their re-organisation into schools which could then support inter-disciplinary programmes.

The second major policy initiative was the introduction of a quality assurance framework through the establishment of the Higher Education Quality Committee (HEQC) under the auspices of the Council on Higher Education. The HEQC uses two main mechanisms to assure quality: institutional audit and programme accreditation. Institutional audit processes were planned to run in seven-year cycles and in the first cycle would have a particular focus on teaching and learning. Programme accreditation processes would not only scrutinise new programmes but would also examine existing programmes across the country in order to re-accredit them once they had met the criteria. The need to develop internal quality assurance procedures made enormous demands on institutions as it was not only a matter of needing to develop policy to guide practice, but also to build the capacity for academic staff to work within policy guidelines once they had been established.

In many institutions AD had been decimated due to the funding crises which occurred in the late 1990s. When staff was still available they were increasingly called upon to work within the new qualification and quality assurance frameworks. Many institutions which had continued to support AD in spite of the funding crises consequently reconstructed their AD units to become resources for *institutional development*. At the University of Cape Town, for example, the old Academic Development programme was restructured into the Centre for Higher Education Development (CHED) led by a Dean. Durban Institute of Technology also has a Centre for Higher Education Development and at other institutions old AD centres or programmes fill this role even though their names might not have changed.

Phase 3: Dominant positions, understandings and theoretical developments

Social situation accounts of learning and of language use and of the significance of discourse still predominate in informing practice in the third phase of the AD movement. The idea that students need to be provided with access to specialised language and to the 'rules and

conventions' (Ballard & Clanchy 1988) of academic discourse rather than the grammatical structures of the language continues to be important. Some of the most recent work (Boughey 2005b) accounts for the forms of students' language use by using the idea that students are drawing on contexts (and the values and attitudes which inform those contexts) which are not those of their lecturers. This then results in a disjuncture and texts which are ultimately inappropriate when viewed by 'expert' eyes.

Understandings of language in the AD movement have shifted over time from a focus on students' status as speakers of English as an additional language and, thus, of their need for more tuition in what are widely termed the 'surface structures' of the language to an acknowledgment of i) of the relationship of language to cognition, manifest, for example, in Cummins' (1984) distinction between basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP); and ii) of the relationship of language to social context and, thus, of students' need to gain access to discourse communities. At the same time however, the construct of 'academic literacy' continues to be misunderstood with AD practitioners reconstructing literacy as a set of skills which can be taught rather than a set of socially embedded practices. Vygotskian (1978, 1982) understandings of learning also continue to provide an account of the phenomenon of 'underpreparedness' and provide a theoretical framework with the potential to inform teaching and other forms of support.

Following institutional restructuring and the emergence of 'comprehensive' universities and universities of technology, some work has begun to appear in the literature which attempts to bridge the theory/practice divide between higher education and the world of work. The most significant paper to appear to date (Davies & Pillay 2000) uses Kolb's 'Experiential Cycle' (1984) (elaborated upon in Chapter 4) and the construct of 'Problem Based Learning' (Eakins 1997; Boud & Feletti 1991) to contextualise the establishment of a Business Clinic at the Technikon Natal in Durban. The Business Clinic provides students enrolled on business-related courses with the opportunity to consult with clients who come for help with problems associated with setting up or running small, medium and micro-enterprises (SMMEs).

Other work in this area is still very much in progress as doctoral research (see, for example, Harran [ongoing], Wright [ongoing]). Both Harran and Wright draw heavily on the idea of a community of practice in conceptualising their research. Of interest in this area is the recently established 'Work Integrated Research Unit' (WILRU) at the Cape Peninsula University of Technology. In the context of this review, it is important to note that the WILRU appears to be located within the aim of contributing to institutional effectiveness.

Phase 3: Structure and form of student support

In the higher education sector, the introduction of quality assurance, the need to restructure curricula following the establishment of the NQF, the new funding frameworks emphasising throughput and graduation rates and, last but not least, the institutional merger processes have all acted as levers at an institutional level in establishing a role for AD in its capacity for *institutional development*, of which student support is a part.

The mission and vision statement of the Centre for Higher Education Development (CHED) at UCT gives a useful indication of the way student support can be embedded within the construct of *institutional* rather than student development:

The vision of the Centre for Higher Education Development is to be a cross-faculty unit that contributes to continual improvement in the quality of Higher Education through widening access, promoting excellence through equity, developing the curriculum in partnership with faculties, enhancing the competence of graduates by ensuring the provision of key skills and abilities, and enabling systematic improvement through the research-led development of informed policy options. (www.ched.ac.za)

In an ideal situation, therefore, an institution with a CHED-like structure would:

- Select students on the basis of alternative admissions tests and counsel them into appropriate programmes on the basis of these tests. One possible choice would be a programme which had been extended to include a number of foundation modules taught by CHED staff.
- Use an analysis of cohorts' performance on the tests to inform the curriculum of both programmes and the foundation modules embedded within them.
- Encourage or even require academic staff to engage with ongoing development of their roles as professional educators. This would include consultation with CHED staff in order to develop the curricula and the assessment practices.
- Offer additional learning support or enrichment for learning in web-based learning formats developed in conjunction with the educational technology specialists also employed by CHED and in print-based materials developed in a similar way. The learning environment would thus be resource-rich.
- Incorporate a Writing Centre which not only offered one-on-one consultations to students but which also liaised with academic staff on task design and on strategies they could use to develop their students' writing in mainstream classes.
- Use tracking data to identify 'high risk' courses at all levels of the curriculum, research reasons for their risk factor and incorporate additional support for learning within those courses or build foundation work below them.

In this scenario, support for learning is embedded across the curriculum as 'best practice'. While traditional student support structures such as foundation modules and tutorials are available, they exist within a wider understanding of what it means to address student needs framed within the context of a concern for overall institutional *quality*.

Phase 3: Funding

In the higher education sector, very little, if any, donor funding is now available for student support work. Instead, CHED-like structures at universities tend to be funded by top-slicing budgets. Support for organisational development provided by a structure such as a CHED is perceived to be part of the overall cost of running an institution and is often perceived to be offset by the increased efficiency (in terms of throughput and graduation rates) which will result and which will thus result in more funding being drawn down via the standardised funding formula.

In recent years, however, funding has been available for foundation work from the Department of Education although strict criteria have been applied in awarding it. These criteria were established as a result of what is now widely known as the 'Scott Document' (Scott 2001) after its author, Professor Ian Scott, of the CHED at UCT. A central premise of the document is that:

... in order to have a fair opportunity to realise their potential and succeed in HE, talented but disadvantaged students require formal educational provision, at HE level, that is additional to what is provided in standard HE curricula. As well as requiring more teaching and learning time, the additional provision may need to take forms that are more interactive than standard first-year provision. The additional provision thus requires resources over and above what is needed for delivering a standard curriculum (2001:1).

The document then goes on to argue for the need for the DoE to fund the 'additional provision'. The proposals in the 'Scott document' were taken up by the DoE which has since offered two rounds of 'Foundation Programme Grants' with another round due to be distributed in 2006.

Phase 3: Staffing

Practitioners who have 'stayed the course' in the AD movement now tend to be highly qualified (most now have doctoral qualifications or are in the process of completing them) and occupy relatively senior positions in institutions. The need to 'academicise' AD by improving the qualification level and by engaging in research and publishing is something which is probably unique to universities. What is not unique, however, is the need for a high level of expertise at least at senior levels if appropriate conceptualisation and direction of

activities is to be achieved. It is also important for AD staff to be able to engage with senior levels of management in any institution if the endeavour is to contribute to the process of *institutional* development which characterises this third phase.

In many respects, the early academic support initiatives were built on 'commonsense' understandings of students' 'problems' and appropriate means of addressing them. Over time, this 'commonsense' has been challenged at both theoretical and practical levels. As new generations of AD appointments are made, 'commonsense' reappears¹² and once again needs to be challenged. The work done by the South African Association of Academic Development (SAAAD) in building and professionalising AD practitioners cannot be underestimated and its demise in 1998 has been to the long term detriment of the field. However, in 2000, an AD conference was convened in the usual SAAAD slot at the beginning of December thanks to the initiative of one institution. The need for a conference was evidenced in the fact that this was taken up by AD practitioners at other institutions and an annual conference has been hosted since then.

In 2005 an attempt was planned to launch a new organisation 'Higher Education Learning and Teaching Association of Southern Africa' (HELTASA) at the conference. It is envisaged that the new organisation will *inter alia* i) support a network of all higher education practitioners (and not only AD staff) and thus facilitate and encourage 'collaborative conversations and ventures concerning policy, developmental practice and educational research in HET (Higher Education Teaching) across the various specialised fields' (HELTASA 2005); ii) facilitate the professionalisation of HET practitioners in their roles as educators; and iii) interact with bodies such as the Council on Higher Education (CHE) and the Higher Education Quality Committee (HEQC) on matters related to capacity building and the recognition of practitioners in their roles as educators. It is thus envisaged that HELTASA will have a fairly wide ranging role which extends beyond that of a professional organisation for AD practitioners.

CONCLUSION – LESSONS FROM THE SOUTH AFRICAN HIGHER EDUCATION SECTOR

AD practices associated with the three phases in the South African AD movement still prevail over a decade and a half later. If lessons have been drawn, they have not been drawn across the board or have not been heeded partly because of the transience of staff and AD units, and also because of the prevalence of dominant discourses in constructing students' 'problems' and, thus, appropriate means of student support (Boughey 2002). Hence a

¹² Comment made by experienced AD practitioners on the 2004 annual AD conference held at Nelson Mandela Metropolitan University focused on the 'reinvention of the wonky wheel' phenomenon in many of the presentations. Unfortunately, conference proceedings are not available to illustrate this point.
NSRF Research Report

caution for the FET college sector is that dominant constructions of what it means to offer student academic support will probably first need to be challenged.

A significant lesson learnt from the Academic Support phase of the AD movement relates to the problematic nature of relying on commonsense assumptions about students' problems and ways in which they can be addressed. What is most evident from both the review of the international literature on student support in FET college sector and the review of lessons learnt from the Academic Development movement in South African higher education is that student academic support strategies and interventions are notorious for relying on commonsense assumptions about students' problems and the ways in which they can be addressed. If a lesson can be stated it is that the 'commonsense' needs to be interrogated. Strategies and approaches to student support need to be grounded philosophically and theoretically, not deployed in a commonsense, ad hoc or 'faddish' way as has often been the case in international FET contexts and academic development in South African higher education. As Moseley et al. (2004:1) put it: 'rational approaches to the planning, implementation and evaluation of education and training become ineffective where there is a kaleidoscopic array of *ad hoc* ideas and practices, influenced by academic or pedagogic fashion and commercial interest'.

However, student support also needs to be empirically-validated through research. Many strategies and interventions have not been empirically tested, but have become embedded in the folklore of both sectors (Cornford 2002a:225). In the international FET sector, for example, Cullen, Hadjivassilou, Hamilton, Kelleher, Sommerlad and Stern (2002:10) in an extensive review of pedagogic research in UK post-compulsory education found 'a host of examples of "good practices" that are either grounded in the day to day minutiae of "chalkface" learning delivery (and hence undertheorised or ungrounded in theory) or, conversely, are tied to a particular "grand learning theory" which are unsubstantiated in practice' in terms of hard data on impact on student 'success'. This is a relevant point to bear in mind when considering the practices drawn from both reviews that seem to hold promise for student support purposes in the South African FET college sector outlined in the next chapter.

Another significant lesson learnt from the AD movement relates to the adjunct nature of the structure and form of much support work. The history of the AD movement in higher education shows that conceptualising student support as an 'add on' to existing tuition has implications for the marginalisation of both the students and staff who are engaged in these adjunct programmes. A crucial lesson for the FET sector is that student academic support needs to be encompassed into the framework of mainstream teaching and curriculum delivery so that support units become resources for institutional development and quality rather than student development. The implication is that student support to promote

academic success entails the institutionalisation of academic development efforts and changes in FET institutions as a whole.

However, this does not mean that support 'structures' such as tutorial programmes or writing centres should not exist but rather that their work should be seen as part of a more overall strategy aimed at facilitating the success of all students. The critique is that add-on student support models are not involved in addressing the deficiencies of existing programmes as well as the deficiencies of students. Adjunct tutorial programmes, for example, do not address poor teaching on the part of academics or poor course design which does not take into account students' learning histories. Similarly, poorly designed assignments often drive students into writing centres when a better designed task by their lecturer might have been easier to 'decode' and execute.

In terms of theorising support and development at FET colleges, the idea that students need to gain access to communities of practice and occupational identities which characterise both the FET colleges and the worlds of work they themselves interact with is of importance in conceptualising student support. If school-based reading and writing practices do not prepare students for higher education, then questions about their relevance to further education have to be asked. Similar questions have to be asked about the relevance of practices in the college sector to work-based practices and, therefore, what it means to provide support. It would be pointless, for example, for language development initiatives to focus on written genres which are appropriate to school and not to work.

The above has implications for capacity both in terms of mainstream staff and AD practitioners who could be available to support the curriculum development process. Thus, another main lesson is that resources need to be put in place to allow staff capacity to be developed so that they can respond to students' learning needs aligned to high standards and achieving the desired outcomes. However, just as the AD movement in higher education needed to develop and support its own practitioners, so must any initiative in the FET colleges. For example, it cannot be assumed that staff appointed to do AD work will arrive with the expertise needed to engage with teaching and learning related issues at the level required. This lesson therefore relates to the need to build a cadre of professional staff who have the kudos and status to be able to deal with those appointed to the 'mainstream'. AD posts need to be created at levels which are senior rather than junior if i) sufficiently qualified and experienced staff are to be attracted to those posts; and ii) their incumbents are to be able to engage effectively and knowledgeably with mainstream lecturers and institutional managers. The importance of wider support and development structures at a national level as the cadre is built is crucial. One way of exploring this would be to look at links with Higher Education Learning and Teaching Association of Southern Africa (HELTASA).

This issue is also clearly related to the ability to sustain funding systemically. An overwhelming lesson to be learnt from the AD movement in higher education is that the series of organisational and funding 'crashes', which have led to the loss of staff and the disruptions in development work which have characterised the sector, should be avoided at all cost elsewhere.

A lesson learnt most bitterly from the 'infusion'/second phase was that attempts to build the critical mass necessary to bring about wide-scale change at the level of curriculum and teaching methodology by appealing to the reason and ethical and moral sense of mainstream academics did not work. Policy frameworks have to be drawn upon in order to maximise the opportunities for 'mainstreaming' AD work. This also points to the significance of external accountability and incentives in the institutionalisation of academic development efforts.

Finally, key obstacles and barriers to student 'success' in the South African context that emerge through the review of literature on the South African AD movement are students' learning histories, and issues of time and opportunities for students to acquire prerequisite knowledge and skills.

Chapter 4 goes on to discuss models for addressing these concerns, as well as teaching strategies for addressing areas of difficulty.

Chapter 4

PRACTICES AND MODELS

INTRODUCTION

The research literature on student academic support and development both internationally and locally strongly advocates integrating student support programmes in the mainstream programmes or overall work of lecturers. The literature advocates department or course-based student support programmes which are integrated into mainstream curricula provision.

This chapter:

- hones in on some of the processes and practices advocated by the international FET college sector and AD practitioners in South African Higher Education that i) are arguably applicable to the South African FET college sector; and ii) could thus be 'infused' into mainstream teaching;
- raises professional development implications for mainstream teaching staff;
- provides an account of student academic support models for incorporating student academic support from the South African AD movement in higher education; and
- concludes with main models emerging from the international FET and South African higher education sectors.

In line with the approach adopted in preceding chapters that focus on the 'external' empirical research, this chapter draws unequivocally from both the literature reviews. The chapter is potentially a resource for lecturers as well as academic leadership, senior management and heads of student support. However, in describing some of the practices and models advocated, reference is made to theories and ideas already discussed in Chapters 2 and 3. This is very important, because, as noted in Chapter 3, when theoretical understandings associated with particular practices are implicit and not properly understood, strategies tend to be deployed in ad hoc and instrumental ways.

STUDENT SUPPORT PRACTICES

What follows is a range of potential teaching strategies and processes relevant to teaching for 'transfer'. The focus is on processes and practices identified in both reviews that are believed to be beneficial in addressing students' learning histories and the four main components of the remit of student support discussed in Chapter 2: the development of thinking skills; the theory-practice relationship; literacy; and language. The proviso being that this does not detract from the teaching of specialist content knowledge.

As outlined in Chapter 2, both reviews found evidence to support the efficacy of a non-universalist approach to knowledge/skills 'transfer', that is, a position which holds that near or application transfer (within a subject domain) is more tenable than far transfer (across contexts or subject domains), and should therefore be focused on. Thus, processes and practices are derived from both reviews for:

- developing thinking skills with vocational education content;
- the vocational education theory-practice relationships; and
- integrating literacy and/or language with vocational education content.

Developing thinking skills *with* vocational education content: the international FET literature

The international FET literature suggests a range of general pedagogic practices to support students in the acquisition of thinking skills with content knowledge, irrespective of particular thinking skills frameworks. Many of these strategies are concerned with the Vygostkian term 'scaffolding' briefly elaborated on in Chapter 2. Nine such strategies presented below are:

1. develop a shared cognitive or thinking skills framework across cognate subject areas;
2. deploy a mixed pedagogy which includes open-ended tasks;
3. use generative questioning techniques;
4. making thinking/reasoning explicit;
5. model and coach the necessary cognitive skills and mental processes;
6. provide effective formative feedback;
7. develop subject-specific concept maps;
8. deploy peer interaction judiciously; and

9. do not rely on information and communications technology (ICT).

Develop a shared thinking skills framework across cognate subject areas

International research indicates that when a thinking skills framework is used consistently and explicitly across cognate subject areas, it is likely that communication within an educational or training context will be particularly augmented. As Moseley et al. (2004:51) put it, such cognitive demand frameworks can help to provide a 'necessary lexicon of thinking and learning, to develop a common language' for the development of thinking skills. The simple four-category system developed by Moseley et al. (2004) (see Chapter 2) is an example suitable for the purpose of ensuring that students are engaged with content at different (lower and higher) levels of cognitive demand. Briefly, the framework comprises the following four 'cognitive skills', namely, i) information gathering (recalling); ii) building understanding (concept formation); iii) productive thinking (reasoning; problem solving and creative thinking); and iv) strategic and reflective thinking (which is supported by value-grounded thinking and includes critically reflective thinking).

Deploy a mixed pedagogy which includes routine and open-ended tasks

A comprehensive study by Kirkwood (2000 in Livingston et al. 2004:72) used a successful combination of direct instruction, modelling, metacognitive reflection and ongoing assessment to infuse lower and higher-order thinking and problem solving into content instruction for 14-16 year olds.

The literature also suggests that knowledge needs to be flexible if it is to transfer. It is therefore recommended that teaching 'avoids making knowledge and its application neater and more regular than they are' (Thomas 1992:ix). This can be taken to include designing learning activities that are not only routine, but also have a degree of open-endedness and uncertainty, and that permit students to make judgements or to produce multiple solutions.

Use generative questioning techniques

The literature suggests that approaches to student academic support, such as using cues and questions, can aid information retrieval and focus attention on higher orders of thinking. These include: open-ended questions, focusing questions, questions calling for variety, questions calling for clarification or extension, and questions calling for reasons or support for ideas.

Making thinking/reasoning explicit

McGuiness (1999 in Livingston et al. 2004:73) highlights the importance of making thinking explicit in a curriculum through, for example, not only asking students to provide answers or evidence of completed tasks, but also asking them to describe and explain their reasoning:

how they have done a task and why they did it in a particular way. Examples are given of time planned into every class for this. This can involve prospective as well as retrospective reasoning. In the case of the former, lead questions can be asked such as: '[t]alk me through the questions you will think about before you begin/during the task', '[t]ell me how you think through what to do when...'

Model and coach the necessary thinking skills and mental processes

This commonly refers to teachers' modelling thinking skills using phrases such as: 'If I were you, I would think about...'. It can also refer to activities where teachers present students with written models of possible thinking steps. Stahl presents the following strategy with regard to note-taking:

In the initial modelling the instructor demonstrates the use of a strategy such as a note-taking system...During the session/s, the instructor employs think-alouds and self-report strategies to explain his/her rationale for undertaking various tactics as part of implementing an overall note-taking strategy. After each session...the instructor shares with the students retrospective reports of the perceived successes or failures (1991:304).

There is extensive, widely accepted empirical research supporting the idea that if students are explicitly coached in some of the mental processes described in a thinking skills model, and given opportunities to practise the abilities extensively on whatever they are studying, they can achieve an increased level of learning transfer within a particular domain.

Provide effective formative feedback

Empirical evidence points to the beneficial effects of formative assessment and feedback in the development of thinking skills with content knowledge. Marzano (2003) cites a substantial body of research evidence indicating that academic achievement is considerably higher in classes where effective formative feedback is provided to students (in Livingston et al. 2004:42). Black and William undertook an extensive survey of the research literature on assessment and found that:

...innovations which include strengthening the practice of formative assessment produce significant, and often substantial, learning gains. These studies range over ages (from five-year olds to university graduates), across several school subjects, and over several countries...The formative assessment experiments produce typical effect sizes of between 0.4 and 0.7: such effect sizes are larger than most found for educational interventions (quoted in Coffield et al. 2004:135).

In general terms, Tillema (2003:113) calls for formative assessment that provides students with insights into their current or actual levels of achievement, as well as into their potential to achieve higher levels.

Develop subject-specific concept maps

As stated in previous chapters, the relationship between thinking skills and content knowledge is of great importance. This process can be domain-led and supported by, for example, the construction of domain-specific concept maps, which draw students' attention to the most significant relationships between important concepts in the subject.

Deploy peer interaction judiciously

All researchers and commentators agree that peer interaction is a favourable ingredient in the development of domain-related thinking skills. For Livingston et al. (2004:37), 'there seems to be enough evidence to support the view that some forms of peer interaction should be at the heart of models for teaching in the post-16 sector' and 'there was fairly sound evidence that peer interaction helped students to think more effectively about the curricula they were studying' (2004:69). However, some cautious notes are sounded.

First, little is known about how any specific aspect of peer interaction within approaches to thinking skills influences performance on particular course and other tasks. Secondly, there is no conclusive evidence regarding the minimum time that might have to be spent on peer interaction practice to reap learning gains, whether gains plateau after limited practice or whether peer interaction should be spread across programmes (Livingston et al. 2004:32). Thirdly, there is no evidence of any link between peer interaction and transfer beyond the domain concerned: 'None of the studies demonstrated generalisation of the effects of peer interaction beyond the domain within which the peer interaction took place, although only one study tested for such transfer' (Livingston et al. 2004:36). Nonetheless, both Moseley et al. and Livingston et al. suggest that peer interaction in relation to domain knowledge is probably worth pursuing, albeit judiciously.

Do not rely on ICT

Technology is a broad term encompassing use of computer, video material, internet and multimedia. The research cautions against ICT per se being seen as mediating and/or supporting thinking and learning. Meta-analyses of studies linking ICT and thinking skills demonstrate that different views of learning theory underpin the way that technology is used in this regard. The studies examined fall into two main categories: those that use technology to support learning by the active construction of meaning (psychological constructivism); and those that make use of IT to support the building of a deeper understanding through participation, engagement and collaboration (social constructivism).

The researchers recommend clear understandings of the type of technology being used, the software design, the quality of the infrastructure, the learning theory underpinning its use and the pedagogic dimensions of usage. Although Livingston et al. (2004:78) acknowledge that 'technology also makes new kinds of interactions possible and hence affects theories of learning', they surmise that: 'Technology is unlikely to encourage and develop collaborative thinking if the students have had no previous experience of collaboration off-line' (2004:36).

Developing thinking skills with vocational education content: the South African AD movement

Literature from the South African AD movement also suggests a range of general pedagogic practices to support students in the acquisition of thinking skills with content knowledge. These include:

- accessing students' existing knowledge;
- making the differences between 'commonsense' and scientific terms explicit;
- providing opportunities for students to acquire necessary background knowledge;
- allowing space for 'knowledge' to be contested; and
- giving students adequate opportunities and time to answer questions.

Access students' existing knowledge

Schema theory (Rumelhart & Ortony 1984) has provided important insights in terms of student learning in the AD movement. A schema is broadly understood to be a cognitive framework which represents existing knowledge. Often conceptualised as mind-maps, existing schemata have to be extended or reconfigured to incorporate new knowledge if long term learning is to take place. An important practice in AD, therefore, has been to try to explore students' existing schemata as a basis for proceeding with teaching. Once lecturers have an idea of what existing knowledge is, then teaching can be planned to fill the gaps in and elaborate on existing schemata. Probably the simplest way of accessing and externalising students' existing knowledge to find out what they know is to simply ask questions at the beginning of a lecture in order to stimulate discussion around the topic that will form the focus of the class or the course.

Make the differences between 'commonsense' and scientific terms explicit

Examination of students' existing knowledge has revealed three phenomena i) the existence of 'commonsense' knowledge which is incorrect in scientific terms; ii) the lack of any background knowledge to a topic; and iii) differences between 'school knowledge' and 'university knowledge'. As a result of an investigation into students' understanding of the concept of energy, for example, Mutimucio (1995) notes that many students in his study

thought that heat travels in both directions - from hot to cold and from cold to hot. This sort of commonsense has profound implications for their understanding of the scientific concept of energy. Similarly, in a first year philosophy class, Boughey (2005b) notes that students' understandings of constructs such as 'government', which were derived from dominant popular discourses, meant that they could not engage with the construct in an academic way. For the students, the construct of government was associated with meeting people's needs. This meant that they could not engage with Hobbes' and Locke's Ideas on the nature of a legitimate government as their basis for engagement was that all governments should be broadly Marxist in intent.

Provide opportunities for students to acquire background knowledge

Students' lack of background knowledge is a common observation in the literature on AD. Writing in 1995, for example, Downs, Inglis and Akhurst investigated students' prior knowledge of the marine environment and found it sorely lacking. Noting that general biological knowledge is acquired through i) reading; ii) interaction with peers or role models who are keen observers of nature, and iii) watching educational television, the team go on to observe that, given students' socio-economic backgrounds, their lack of general knowledge is not surprising. Downs et al. go on to propose an enrichment programme which allows students to acquire background knowledge, in their case, through engagement with popular texts and nature programmes on television.

Allow space for 'knowledge' to be contested

Geisler (1994) elaborates upon this, noting that at school, knowledge is usually constructed as 'fact' and learners are not inducted into understandings that knowledge is tentative, can be challenged, and is subject to revision. Geisler contrasts the discourse of an academic article with another text written for a non-expert audience to illustrate this point in detail noting that academic texts often contain what she terms 'metadiscourse'. In the following text, cited from Fahnestock (1986) examples of metadiscourse occur in the use of the word 'appear', which acknowledges the context in which the observation was made and thus allows readers to contest the knowledge that the wet appearance of the feeding site is due to hydrolysis:

The bees masticate and consume flesh at the feeding site. They do not carry pieces of flesh to the nest, but appear to hydrologise it with a secretion produced by either mandibular or salivary glands, which gives the feeding site a wet appearance (Geisler 1994:283, original emphasis).

In this example, the word 'appear' acknowledges the context in which the observation was made and thus allows readers space to contest the 'knowledge' that the wet appearance of the feeding site is due to hydrolysis. In the text written by the same authors for a non-

expert readership, the metadiscourse is dropped and facts are presented in an uncontested fashion:

The bees chew flesh after coating it with an enzyme that breaks it down. They partially digest it, then fly back to the nest where the substance is regurgitated for worker bees (Science83 cited in Geisler 1994).

Given observations such as these, the need for students to begin to understand knowledge as something which can be challenged becomes imperative. Thus, a further strategy is to allow students space to contest 'knowledge'.

Another strategy used in the AD movement to address the learning practices students had experienced at school, which had been developed as a result of authoritarian classrooms with a focus on chanting in the lower years (see, for example, Macdonald 1990) and the presentation of information which had to be remembered verbatim, is that of creating interactive learning spaces. In the South African AD movement much of work on this was done in tutorials. Ogude (1995), for example, describes the introduction of what are termed 'conceptual tutorials' at the Soweto campus of Vista University. Interviews with students revealed that i) students attempted to recall textbook definitions rather than to construct understandings of definitions themselves; and ii) they attempted to do a calculation even when not necessary. 'Conceptual' tutorials attempt to shift students away from their preferred spaces involving 'algorithmic' learning, which focused on drill and practice and a 'correct' answer to more 'open' learning practices where concepts could be explored through discussion and problem solving.

Although the intimacy of a tutorial rather than a lecture is probably the most often cited space for the development of 'deep' learning at higher education level, the need for this to happen in lectures has not been ignored, especially once the massification which was likely to follow the 1994 election was acknowledged (Morrow 1993; Searle & Naidoo 1995). Cannon and Boughey (2000) provide a detailed explanation of strategies which can promote interactive learning in the space of a large lecture including the division of the class into smaller groups for a period of discussion.

Give students adequate opportunities and time to answer questions

Lecturers' question and answer techniques are a particular focus given the prevalence of lecturers asking questions to the class in general and then answering them themselves almost immediately. Cannon and Boughey (2000) point to the need for lecturers to make it easy for students to respond to a question in class by being directive, by posing the question appropriately and, most importantly, by giving students time to answer. Time to answer could involve allowing students to discuss a possible response with the person(s) sitting next

to them or doing a brief freewriting exercise (since freewriting is a means of activating thought and generating ideas) before volunteering an answer to the class as a whole.

Freewriting involves i) identifying a topic or a specific question which needs to be answered; ii) setting a time limit to address the topic or answer the question (typically three, five or seven minutes); iii) writing intensively and without stopping within the time limit; iv) stopping when the time limit is exhausted, regardless of whether or not the topic has been addressed completely or the question answered in full; and v) reviewing the ideas generated as a result of freewriting immediately or later. The short time limit in freewriting is understood to aid motivation and focus. As a tool to develop learning, freewriting effectively functions because of its capacity to capture thought so that it can be interrogated later. Since freewriting occupies a relatively short time period, its use has been advocated in tutorials and in lectures (Boughey 2000) since it is relatively easy to stop a class or tutorial, pose a question as a prompt for freewriting and then proceed allowing students to use the basis of what they have written for discussion.

Developing thinking skills *with* vocational education content: Professional development implications

Clearly the above strategies will require professional development for mainstream teaching staff with guidance from student support staff. Indeed, all of the above strategies may be constrained by the following professional development implications which are discussed below:

- demands on mainstream teaching staff and lecturer readiness;
- lecturer resistance;
- time and space in the curriculum; and
- student readiness.

Demands on mainstream teaching staff and lecturer readiness

Most of the studies reviewed rest on theories which exert high cognitive demands on mainstream teaching staff and often take more time than their traditional practices. As Thomas (1992:xiii) puts it, their usage 'requires an understanding of intermediate-level knowledge, deep features, and mental processes relevant to transfer situations and knowledge domains, and of how to teach for transfer'. There are obvious staff development implications. In order to take more control of the pedagogic process, lecturers need to be able to develop, apply and evaluate learning theory and theories of pedagogy, rather than deploy the pragmatic criteria that frequently characterise teaching in further education and training. 'Being able to discuss those constructs within a community of practice and in

relation to theory-based frameworks makes a teacher not only a learner, but a practitioner-researcher' (Moseley et al. 2004:51).

However, it may be the case that lecturers are themselves in need of explicit teaching in thinking and analytical skills. On the basis that '[l]ittle is known about how well vocational tutors themselves can engage in the "thinking skills" which seem to be valued in the workplace', Pithers and Soden (1999:24) deployed a psychometric test [the Smith Whelton Critical Reasoning Test (CRT)] for assessing vocational tutors' and graduate engineers' thinking skills in two countries. They found that those who studied mathematics at advanced levels tended to perform better on the CRT verbal scale than those whose mathematical education was more curtailed. Tutors' scores in both countries were significantly lower than those of the group of graduate engineers whose education included advanced mathematics.

Lecturer resistance

It may also be the case that any attempt to insert consideration of thinking skills into the further education curriculum meets with resistance from staff. Bernstein's work shows how attempts to diffuse or change the insularity of content knowledge often provoke more far reaching identity changes:

...changes in organisational practices, changes in discursive practices, changes in transmission practices, changes on psychic defences, changes in the concepts of teacher, changes in the concepts of the pupils, changes in the concepts of knowledge itself... (1996:30).

Time and space in the curriculum

There may be tensions between the time allocated or available for a course and some of the strategies outlined. Clearly the inclusion of thinking skills needs space in the curriculum. A recurrent point is whether or not thinking skills can be incorporated successfully into modular curricula because of the time factor. As Cornford (2002:228) puts it: 'The time frames of most programmes attempting to develop sophisticated performance and thinking skills...and change deeply ingrained values and attitudes of novice teachers, are frankly totally unrealistic'.

Aside from the issue of physical time, is an issue of epistemological time. Several references are made to the ways in which outcomes-based education works against thinking skills: 'The focus on product evidence and observable behaviours is certainly unlikely to encourage systems of assessment designed to track the development of "habits of mind"' (Livingston et al. 2004:66). This leads to terms like 'critical thinking' being adopted and deployed in trivial and prescribed ways, which is arguably already the case with key skills. Evidence suggests

that it is debatable (in the UK at least) just how far learners develop their ability to think about whatever they are studying in the context of unit standard based National Vocational Qualifications. Livingston et al. argue that:

There is little point in suggesting that teachers/lecturers and students would do well to change their conceptions of learning and teaching unless different conceptions can be supported by course design and content. An important conclusion from the project team's review of sample studies is that their successful implementation depends in large measure on certain features that are not present in curricula in the current VET system (2004:70).

Student readiness

In the South African AD literature, the inadequate mediated learning experiences in students' own learning histories provides an explanation for the problems students experience upon entering tertiary education (see Chapter 3). A dominant strategy used in the AD movement to address students' learning histories revolves around the need to take into account and address the learning practices students had experienced at school. The international FET literature is inconclusive on the issue of student readiness, apart from to suggest that student readiness probably involves engaging them in activities that help them to clarify their understandings of what changing their learning practices and orientation to knowledge might mean for them.

The theory-practice relationship: The international FET literature

It was acknowledged in Chapter 2 that i) choices between practice-led and theory-led approaches depends on level and subject; and ii) forms of theory-led and practice-led approaches may be required at different stages of a learner-worker's career. Strategies pertaining to theory-led and practice-led approaches are thus provided.

Bernstein's concept of 'recontextualisation' is a useful way of framing the kinds of strategies that are suggested in the review of international FET literature to support the incremental development of a deductive theory-practice relationship. Recontextualisation has epistemological, pedagogical, cognitive and social dimensions and refers to the means by which discourse is dislocated from one context and relocated in another. As Cornford (2002c:88) argues, 'transfer' doesn't just happen, automatically. Rather, a staged approach to theory-led, deductive student support is outlined and recommended for use wherever subject and level permits. The approach involves the following series of steps as strategies:

1. take time to teach the theory;
2. disembed learners from theory;

3. nurture informed perception;
4. develop the ability to make judgements; and
5. employ 'thinking in the field'.

The pedagogical aspects of this approach to helping students to link theory and practice have an affinity with the Vygotskian notion of scaffolded learning discussed in Chapter 2.

Take time to teach the theory

Theorists advocating deductive approaches hold that the applicable theory needs to be taught in a classroom environment where the key propositions and the logical structure of the theory can be clearly laid out and mastered. As Cornford (2002c:93) puts it, 'transfer is only likely to occur when individuals have a solid mastery of basic knowledge, skills or principles'. At this stage, then, the emphasis is on teaching theory and undertaking theory-related tasks.

Disembed learners from theory

Knowing applicable theory does not by definition imply that a student knows when or how to apply it. A gradual process of disembedding from theory is therefore presented in the literature. There is a need to move away from class-based tasks to practice because the latter does not comprise well-defined problems but problematic situations characterised by uncertainty and contingency. The college-based simulated environment is seen to be one of the best contexts for a range of graduated, relatively risk-free disembedding processes.

Aarkrog (2003:2) presents a model based on two variables which he claims supports theory-practice transfer. The model was developed for the Danish context, where theoretical and practical training in vocational colleges alternates with practical training in an enterprise or an organisation. One variable is 'degree of predictability'. The other is 'time for thinking in the practice situation'.¹³ He argues that simulated practice situations can be adjusted to be more or less predictable and to give more or less room for thinking.

Nurture informed perception

A commonly accepted initial step in disembedding is noticing or perception. It is here that the student begins to make preliminary connections between theory and practice by noticing degrees of sameness between the learning situation and the simulated practice situation.

¹³ His model draws on the work of Ellström to measure degrees of un/predictability and on Schön's work on reflection in and after action to calibrate time. He gives four examples of work contexts: Predictable and no time (task, method and result all given in advance); predictable and time (task, method and result all given in advance, predictability tends to preclude the need for time for reflection); unpredictable and no time (requires reflection-in-action – more difficult); unpredictable and time to think (the best context for transferring college-based learning).

Aarkrog (2003:1) notes that concrete superficial elements are easier to recognise than underlying abstract principles: '[a]ccordingly, transfer of motor skills is easier than transfer of knowledge.' In a similar vein, Thomas (1992:ix) refers to 'surface features' which relate to outward appearances and descriptive attributes and details that are perceptible through direct sensory detection without extensive interpretation, for example, 'activities, materials, tools and equipment, examples, problems, cases, and situations'. She claims that these things, if encountered in the transfer situation, trigger memories of initial learning, and that recognising them aids low-road transfer.

Develop the ability to make judgements

A further step revolves around recognising the situations in simulated practice where theory can be applied. It builds on the earlier step, as Clarke and Winch observe:

There is, therefore, a very good case to be made for simulation, prior to engagement in the workplace, involving the setting up of scenarios whereby the student has the opportunity to recognise situations within which the relevant theory [can be] applied...allows the novice to recognise a situation, investigate the circumstances and made a theoretically informed judgement without operational pressures...(2004:519).

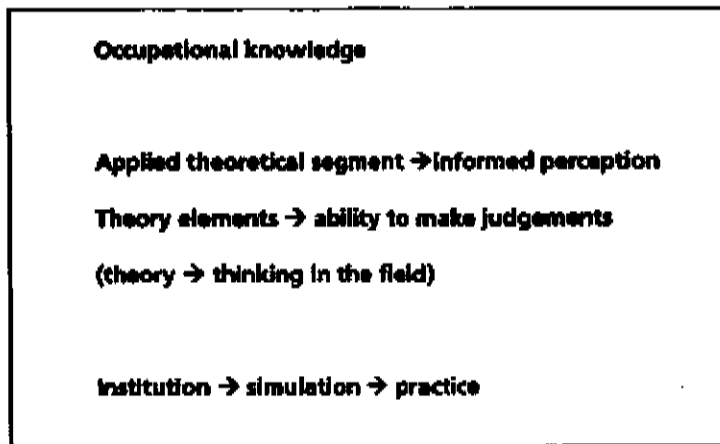
The ability to recognise contexts to which theory applies and those to which it does not is seen as a long process of practice in identifying, analysing and interpreting circumstantial evidence. Hypothetical situations and problems can be posed in a simulated context through which learners can try out and articulate their reasoning. The movement is towards supporting learners in making and articulating theoretically-informed judgements (akin to 'making thinking explicit' as discussed earlier).

According to Aarkrog (2003:2), the process of identifying sameness continues, but at a deeper level. It can be seen as a movement towards what Thomas (1992:ix) refers to as high-road transfer, involving deep, structural, causal features. In the context of complex modern work processes, this can include pedagogic approaches that involve individuals working as teams, articulating their knowledge and skill through and explaining and justifying to others what they are doing and why.

Thinking in the field

Having gained the perceptual, judgemental and manipulative confidence that a simulated situation brings, the student is ready to work in a 'controlled operational environment, where operational pressures are gradually brought into play' (Clarke & Winch 2004:519). This can be termed probationary practice, during which time, judgement-making becomes more unconscious. The processes is summarised in Figure 4.1.

Figure 4.1: Theory-led processes



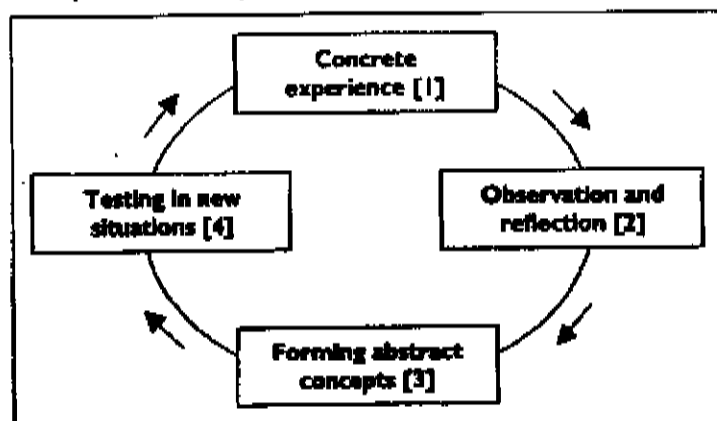
The theory-practice relationship: The South African AD literature

In Chapter 3 it was noted that, in South African AD work, a major focus has been the use of experiential learning involving both practical and theoretical knowledge. Kolb's (1984) 'Experiential learning cycle' is often cited as a theoretical basis for the integration of practical and theoretical work. In contrast to strategies for helping students to link theory and practice outlined from the FET literature review where key propositions and the logical structure of the theory are first clearly laid out, practical strategies in this model entail:

- providing concrete experiences;
- mediating observations and reflections on these experiences;
- deriving abstract concepts or 'principled' knowledge; and
- testing new concepts and principles in new 'concrete' situations.

The cycle is illustrated in Figure 4.2 below.

Figure 4.2: Kolb's Experiential learning cycle (Kolb 1984)



In the higher education context, the argument made is that, although scientific disciplines have traditionally attempted to introduce experiential learning through practical sessions, as Lemmer, Lemmer and Smit (1996) point out, the objectives of practical work are often very broad and general. This means that single experiments often have several objectives. Experimental work also tends to focus on accurate measurement skills and mathematical techniques (since students typically would be required to perform calculations of some sort) with the result that very little attention is paid to higher order conceptualisation.

A second problem with practical work relates to the difficulty of co-ordinating practical sessions with the theory presented in lectures. Generally, practical sessions follow lectures so that the practical functions as a space to apply or demonstrate theory. Often, if the curriculum is not particularly well planned, there are also relatively long time gaps between theory and practical sessions with the result that students appear in practical sessions with little understanding of their purpose and move through experiments using the laboratory manuals much as they might prepare a meal from a recipe book. On the whole, therefore, practicals do not allow concept or theory to develop from a process of observing and reflecting on experience. Of even more concern is the fact that traditional practicals do not function to challenge commonsense notions or concepts since they allow students to use algorithmic learning practices which need not be meaningful. Some of the issues identified are attributed to syllabi which consist of little more than a list of topics to be covered. Lecturers move through the content of the syllabus and practicals are provided as an 'add on'.

As the figure of Kolb's Experiential learning cycle illustrates, the first stage in Kolb's learning cycle involves concrete experience of phenomena or activities. Concrete experience then allows participants to observe and reflect on this experience, although the process of observation and reflection needs to be mediated. This is especially the case in higher education where students might arrive with conceptions and understandings derived from previous experiences. As a result of this process of observation and reflection, abstract concepts or 'principled knowledge' (Gamble 2004) is formed. These concepts can then be tested in new situations. The process of testing principled knowledge then brings the cycle back into the first stage of immersion in concrete experience.

The argument here is that the introduction of outcomes-based education does have the potential to challenge many problems and to allow for the use of experiential learning in a meaningful way. Once learning outcomes have been identified in a curriculum development process, staff members need to consider how they can facilitate learning so that the outcomes are met. A curriculum might thus incorporate an experiential learning cycle which begins with experience and works through observation and reflection to theory and concept building. The fourth stage of Kolb's (1984) cycle, 'testing in new situations', would allow students to demonstrate learning outcomes. In this sort of curriculum, the outcomes (which

are actually the starting point of the curriculum development process) would be embedded in the fourth (or end) stage of the cycle.

The theory-practice relationship: Implications for professional development

Once again, the above processes carry strong professional development implications. In the *FET literature*, mention is made of the extent to which contemporary further education departs from an 'ideal' state of affairs. Johnson for example, offers an account of the teaching of 'theory' which suggests inappropriateness, impoverishment and confused theoretical bases:

It seems as though the field is using cognitive-oriented instructional practices to achieve motor skill development and the learning of work procedures, goals that can be addressed through behavioural learning theories. This has resulted in instruction that is delivered through lectures and demonstrations, emphasises memorising information, and teaches large skill sets as small discrete tasks...(1995:11-12).

Johnson is also critical of much workshop or simulated teaching, arguing that learning and transfer happen by default, because of the richness of the learning environment 'not because those skills are explicitly emphasised'.

As Boughey points out in her review:

Since curriculum (as opposed to syllabus) is generally conceived as a term assessment, the idea is that an *experiential learning environment* would be enriched by considering the way all these elements can contribute to the cycle of learning identified by Kolb (1984). *Learning materials*, for example, would need to be designed to facilitate processes of observation and reflection as well as processes of theory and concept building. *Teaching* would also need to facilitate these processes. *The use of assessment* as a formative and developmental tool which provides feedback on learning rather than merely measuring it (see, for example, Lockett & Sutherland 2000) would also need to be incorporated. All this would have implications for capacity both in terms of mainstream staff and AD practitioners who could be available to support the curriculum development process (2005a).

Integrating literacy skills with vocational education content

This section considers pedagogical strategies for developing:

- separate but linked vocational education literacy skills; and
- second language literacy skills with vocational education content.

Developing separate but linked vocational education literacy skills: Strategies from the international FET literature

Strategies for developing separate but linked vocational education literacy skills have been included here as the international FET student support literature suggests that vocationally-linked (discrete) literacy has something to recommend it. This is especially if the focus is on preparatory and highly-focused activities undertaken with students that tend to be high-utility strategies with immediate application transfer potential – for example, in Adult Basic Education and Training (ABET). Examples of strategies from the international FET literature for this include:

1. expanding students' vocabulary quickly;
2. using writing to develop reading comprehension and critical thinking;
3. the use of frequent written summarising; and
4. the use of a simulation model that replicates the tasks and texts of a particular vocational course.

Expanding students' vocabulary quickly

Stahl (1991:3) argues that college learning specialists must enable students to expand their vocabulary quickly by providing experiences that immerse students in 'i) the "language of the academy"; ii) the "language of the educated" or the advanced general vocabulary used by scholars as they communicate; and iii) the specialised "languages of disciplines" or those unique terms which permit scholars within a field to communicate effectively and efficiently'. These points tie in with Livingston et al.'s (2004:56) view that a language of thinking should be more consciously used in classrooms, for example, 'theory', 'model', 'claims'.

Using writing to develop reading comprehension and critical thinking

A further highly-focused activity is the use of writing to develop reading comprehension and critical thinking. Stahl (1991:4-5) recommends that the learning specialist, prior to a new reading assignment, ask students to free-write on the general subject of the assignment. This

involves them in writing 'all the questions the reading passage's title brings to mind'. It could also involve students in skimming first and last paragraphs and main headings before their freewriting. The freewriting should be predictive of what students think the content of the reading will be. Students can also raise questions about, or objections to, what they think will appear in the text.

Frequent written summarising

The third strategy that Stahl (1991:5) considers to be noteworthy is frequent written summarising. This is a simple approach, involving pausing at regular intervals during reading tasks, for students to summarise in writing what has been read. The claim is that such an activity gives students opportunities to monitor their own understanding. 'In a sense, writing about reading material turns the reading process inside out, exposing readers to the inescapable constructivist activity of creating meaning in and from words'. The indications are that such an approach develops metacognitive skills as well as literacy skills in that: 'writing aids help students in becoming co-creators of the texts they read, in creating their own articulated understanding of the content material, and in providing a means of monitoring and revising that understanding' (Stahl 1991:4).

The use of a simulation model that replicates the tasks and texts of a particular vocational course

A more general model of preparation for vocational education is also presented by Stahl. She calls this a simulation model. It has some similarity with the ideas proffered in the previous section regarding linking theory and practice. Here, the goal is to replicate and model the tasks and texts of a particular vocational course:

...students read and study as the learning specialist teaches the domain-specific study strategies... The end point of the simulation experience is the passing of an exam like that encountered in the regular course. When students exit the simulation course, they take with them a physical product (marked text and class notes), a cognitive product (greater prior knowledge and experience), and domain-specific and general study strategies (1991:2).

Developing separate but linked vocational education literacy skills: Strategies relating to the reading process

The following are more generalised strategies also for developing literacy skills with vocational education content emerging from the FET literature and the South African AD literature. These relate specifically to the reading process and involve:

1. awareness of the hidden complexities of course material;
2. developing resources to scaffold reading; and
3. modelling key reading activities.

Awareness of the hidden complexities of course material

There is a lack of consensus about simplifying mainstream course material in the FET literacy literature. In the context of the 'Literacies in Further Education' project mentioned above, Mannion and Ivanic (2004:10) found that 'highly demanding literacy events were what [students] expected of being on a "good" course'. Students seem to be motivated by engaging with authentic and complex materials. This chimes with the argument reflected earlier in this chapter regarding reflecting the full complexity of knowledge. On the other hand, Watson, Nicholson and Sharpin (2001:21) note a significant lack of awareness amongst vocational lecturers of the hidden (to them) complexities of their course materials: 'the language and structure of the training materials, and the assessment strategy prescribed, imposed significant and often unreasonable literacy demands on trainees'. It seems that there is often a mismatch between the complexity of written course materials, teaching and assessment strategies used and the students' level of vocational competence, leading to situations where students fail the materials, rather than the course.

Also, it is generally accepted that self-paced, 'flexible' learning works against students with literacy needs (see for example, Lauri 2001). Flexible delivery is seen as placing heavy literacy demands on students because it is usually synonymous with less face-to-face contact. As with course materials, the 'training requirements are more difficult than the task requirements of the course' (Watson et al. 2001:26). Students with excellent content or task skills may not participate because they have difficulty with the literacy requirements of, for example, self-paced learning materials.

Developing resources to scaffold reading

A significant area of the South African AD work in this arena has involved the development of resources to scaffold literacy activities such as reading. At historically black institutions in particular, the course or study 'guide' has always been an important element of course design as students i) have not always had access to textbooks; and ii) find them difficult to read even if they are provided. This meant that the development of learning materials which support language development and scaffold understandings thus had a ready-made context. One of the biggest resource development projects of this nature took place at Peninsula Technikon in the late 1990s/early 2000s. Over a three year period, language and disciplinary specialists worked in pairs to produce learning materials which attempted to develop students' language in relation to the disciplinary context. The materials were later published by a commercial publisher.

Modelling key reading activities

The comprehensive international review of controlled trials relevant to adult literacy in the UK by the National Research and Development Centre for Adult Literacy and Numeracy (NRDC) (referred to in Chapter 2) isolated reciprocal teaching as a particularly positive

strategy for improving reading comprehension. The authors posit that of all the pedagogical findings in their reviews, this was the best established. It is essentially a modelling technique: a procedure whereby teacher and student take turns leading a dialogue concerning sections of a text. Initially, the teacher models the key activities of summarising, questioning [making up a question on the main idea of a text], clarifying and predicting. Gradually the learner takes over, and both the level of comprehension and the ability to self-monitor is said to improve (NRDC 2003).

Developing separate but linked vocational education literacy skills: Strategies relating to the writing process

Given the role of written text in university based assessment practices and, thus, of the crucial role writing proficiency plays in achieving success, it is not surprising that literature from the South African AD movement shows that efforts have mainly focused on introducing writing activities into mainstream classes supported by AD practitioners. The identification of writing as a tool for learning was important in persuading staff to participate in this sort of work (see, for example, Boughey and van Rensburg 1994; Coetzee and Boughey 1994). Much of the work involving writing has focused on the idea of the writing 'process' identified by researchers such as Emig (1971), since the practices which comprise that process were understood to be conducive to the development of learning. The writing process involves a series of 'stages' including pre-writing (or idea generating), drafting, reviewing and redrafting (see also White and Arndt 1991). Whilst early stages of the process are understood to be 'writer-centred' in that they focus on a process of discovering what it is the writer wants to say (Zamel 1982), as the process progresses, writers are understood to shift from focusing on the meanings they want to make to what their readers or audience will make of those meanings (see, for example, Clark and Ivanic, 1997). The final stage of the process involves a focus on polishing and editing the document to ensure that it meets conventional norms. Some of the strategies specifically associated with each stage of the writing process are discussed below. These are:

1. idea generation through concept/mind-mapping;
2. drafting and redrafting through a 'writing respondent' approach and providing formative feedback on students' work; and
3. designing 'staged' tasks that provide clear guidance as to what is expected and include specific assessment criteria.

Idea generation through concept/mind-mapping

In the pre-writing or idea generation stage, 'freewriting' is often advocated (see, for example, Elbow 1973). However, another strategy advocated for use in the pre-writing stage of the writing process is concept- or mind-mapping. In reporting on an initiative to introduce

concept mapping into the idea generation stage of a writing process at UCT, Angelil-Carter (1994a) cites Vygotsky in noting that:

... the most significant moment in the course of intellectual development, which gives birth to the purely human forms of practical and abstract intelligence, occurs when speech and practical activity, two completely independent lines of development, converge (1978:24).

Angelil-Carter (1994:146) goes on to note some of the advantages of mind-mapping observed in her study as i) mapping 'can be an important vehicle for creative thinking, brainstorming and bringing prior knowledge to the surface'; ii) '[t]he ability to understand, reshape, synthesise and organise what one reads, to make it one's own, and then to put that into writing with one's own ideas, can be facilitated by mapping' (1994:146); iii) the conscious awareness and control required by mapping aids learning; iv) as a highly active approach to learning reading and writing, mapping assists in the retention of knowledge and, importantly; v) that mapping is an important means of allowing lecturers to access their students' thinking at a time when that thinking can be guided. In spite of the obvious advantages observed in the introduction of mapping, Angelil-Carter does note that learning to map requires intensive and on-going instruction.

Drafting and redrafting through a 'writing respondent' approach and providing formative feedback on students' work

Possibly the most significant strategy advocated as part of the writing process is drafting and redrafting. Typically, students would be required to submit an initial draft of a writing assignment for comment by their lecturers (Bozalek 1993; Boughey & Goodman 1994; Boughey & van Rensburg 1994; Coetzee & Boughey 1994; Amos & Quinn 1997) although writing centres also had a role to play in this process in that consultants were available to provide oral comment on drafts of writing in process (see, for example, Leibowitz and Parkerson 1994). Boughey (1995) argues for the efficacy of what she terms a 'writing respondent' approach as an alternative to the traditional writing centre. In contrast to the use of oral consultations in writing centres, the writing respondent approach uses trained respondents to provide written responses to students' writing. These responses, typically phrased as questions, prompt students i) to explain and clarify; ii) to think more deeply about the implications of what they are saying; and iii) be explicit and exact.

Apart from practical considerations such as cost, written responses in the body of the text have theoretical advantages over oral consultations in that they force writers to remain in the context reduced environment of the text they have created (Cummins & Swain 1984). In an oral consultation, consultant and student jointly construct meaning around the text. In a writing respondent approach, the student is constrained within the limits of her own text and to see where it falls short in making meaning and meeting the needs of her reader.

Quinn (2000) explores both the theory and practice of writing responding in more detail.

Evidence of the efficacy of redrafting on improving students' writing does exist. Boughey (1997), for example, provides a quantitative indication of improvement, whilst Quinn (2000) provides a more in-depth qualitative analysis. There is also evidence, however, that initially students' writing may deteriorate (see, for example, Bock 1988) as they move into using new strategies and abandon the writing practices which had previously served them well.

If students are to be encouraged and allowed to submit drafts of an assignment 'in progress' then clearly the quality of the comment provided to support further development is crucial. This is especially the case since there is a body of research which shows that much of the comment provided on written work by teachers and lecturers is ineffective, either because students ignore the comments themselves or because they cannot understand them (Sommers 1982; Zamel 1985; Hounsell 1987). Indeed, in a writing centre it is never the intention that consultants should work with the surface features of the language by editing students' work, but rather they should work at the level of 'meaning' by facilitating a discussion about what the client in the centre wants to say (see, for example, Leibowitz & Parkerson 1994; Slemming 1995). Comments or feedback which focus only on surface features are indicative of an understanding of 'language as a mode of communication' (Christie 1985; Boughey 2002) or the idea that meaning exists independently of language which is then used simply to convey it.

From this perspective, 'getting the vehicle right' in terms of grammatical and lexical accuracy is assumed to ensure good writing. This contrasts with an understanding of 'language as a resource' (Christie 1985; Boughey 2002) which perceives language to be implicated in meaning making. From this perspective, most problems in the surface structures of the language are seen to be indicative of deeper problems at the level of meaning (and mostly that writers do not understand what they are trying to say, or have not yet worked out what they want or need to say). Correcting grammar, spelling and punctuation is therefore unlikely to have a marked effect on the quality of thought or the quality of argument in a piece of writing. In spite of observations such as these, the majority of comments on students' writing still focus on the 'medium of communication' and concern themselves with relatively trivial features in terms of the larger project of using writing to develop thought (Paxton 1995).

Given these observations, research into the provision of written comment has been an area of interest in the AD movement. Paxton's (1995) work examining tutors' responses to student writing is significant in this regard, not merely because tutors are often heavily involved in assessing written work at universities, but because of the insights it provides into commenting on writing in general. Citing White (1984), Paxton notes that lecturers belong to an 'interpretative community' and that their membership of this community guides their reading of students' texts (cf. also Gee's (1990) notion of a 'Discourse' noted in Chapter 3). Her research thus focuses on the extent to which graduate tutor's responses

serve to signal the 'rules and conventions' (Ballard & Clanchy 1988) of the interpretative community to students. Paxton's main finding was that students do not have a grasp of the academic discourse underpinning tutor's comments and thus cannot understand them. Comments such as 'Your work lacks argument and structure' or '...keep working at making everything more precise and relevant' or 'Argue the question more closely and structure your essay more systematically' (Paxton 1995:193) are meaningless to students as they refer to 'abstract rules and principles' and do not 'provide students with clear and explicit strategies for revising the text'.

Specific questions posed in the body of the text are often advocated as a way of overcoming the problems Paxton (1995) notes (see, for example, Boughey 1995). Such questions can function much as the way questions in a conversation would function indicating the need to revise, reconsider or provide more structure at the point that communication is breaking down. If Paxton's observation that commenting on students' assignments is driven by membership of interpretative communities is accepted, then the difficulty of reorienting lecturers to more appropriate ways of responding to students' work needs to be acknowledged. It nevertheless remains a crucial area of student support and is an appropriate area for specialist practitioners to provide support and development when working with mainstream staff.

Designing 'staged' tasks that provide clear guidance as to what is expected and include specific assessment criteria

A final area in which AD practitioners have worked in order to facilitate writing development has been task design. Williams (2005) reports on a piece of research which looks at the way first year students in a chemistry class interpreted commonly used assessment task verbs and compared these to their lecturers' understandings of the same terms. The lecturers in Williams' study, for example, defined the meaning of the task verb 'discuss' as 'provide arguments in support of the statement as well as against it. Put forward reasons why you think one argument is stronger than the other' (2005:164). Students, however, tended to draw on more commonsense understandings of the term. Williams goes on to argue that lecturers were drawing on the conventions of a discourse or interpretative community to which their students did not yet have access, with the result that students may not have had the opportunity to display what they did know. Assessment was thus inherently unfair.

Lockett and Sutherland (2000) and Geyser (2004) all stress the importance of task design along with the development of specific assessment criteria which provide guidance as to what is expected as a means of getting the best out of students. In doing so, they draw on a particular 'paradigm' of assessment which is outcomes-based/criterion referenced and which gives rise to a set of practices outlined in the unit standards for assessors registered on the NQF (SAQA 2004). These practices involve i) developing learning outcomes for a course or

module (i.e. specifying what students need to be able to do); ii) identifying assessment criteria for those outcomes (i.e. specifying what the lecturer needs to see to ensure that students can indeed do those things); and iii) designing a task which will allow students to demonstrate the criteria. Once a task has been designed, it is communicated to students along with the assessment criteria which are then intended to guide performance. In terms of understanding assessment as a practice arising out of a discourse or interpretative community, the provision of assessment criteria thus becomes a means of facilitating access to that community.

In terms of actual practice, AD staff working in writing centres have long focused on the importance of task design. Leibowitz and Parkerson (1994), for example, note the importance of working with lecturers who send students to the writing centre at the University of the Western Cape on the rubric of the assignments they set. Similarly, Boughey and van Rensburg (1994) discuss the concept of a 'many tiered' task in the context of an intervention introducing a writing process into a first year occupational therapy class. In the intervention, the larger, more overall task, was broken up into a series of smaller tasks, each of which was submitted in draft form for constructive comment. The task in the class was: 'Discuss the development of a typical 2 year old and a typical 5 year old child by comparing various aspects of development. Please justify the aspects you have chosen by explaining why they would be important for an occupational therapist'.

In staging the task, students were first asked to describe the development of a normal 2 year old child. They were then able to use feedback to this description not only to develop the description further, but also to inform the next task, a description of the development of a 5 year old child. Having completed both descriptions, students were able to compare both stages of development and use feedback to identify observable milestones in development which would be important for an occupational therapist. As each stage in the task progressed, the cognitive load increased in terms of abstract thinking. According to Boughey and van Rensburg, breaking down the task in this way not only made the task more manageable, but also motivated students in that it was not perceived as enormous and feedback at each successive stage informed the development of the next. Davies and Quinn (1995) take up Boughey and van Rensburg's suggestions in the context of a first year law course and evaluate the process favourably noting, however, that the process was time consuming and demanding of lecturers' effort.

Developing second language literacy skills with vocational education content: Carlo and Sylvester's frame

This section on integrating literacy skills with vocational education content considers pedagogical strategies for second language literacy skills with vocational education content as well as strategies for developing separate but linked vocational education literacy skills.

One potentially useful example of reliable second language literacy research from the *FET literature* is Carlo and Sylvester (1996). Their research (on second language reading) was undertaken for the United States National Center on Adult Literacy. The researchers are experts in the field of transfer of reading skills across languages. Their research reviewed about 80 pieces of literature concerning the acquisition of a range of second language literacies, not only English.

Carlo and Sylvester's frame links cognition and reading. They see reading as primarily a cognitive process, not a social one. For them, reading promotes essential cognitive development. As such, they are concerned with the relationships between reading, language, memory and (meta)cognition. Comprehension is the focal point of the reading process involving relating vocabulary to experience; understanding ideas, concepts and processes; recognising relationships; making comparisons; drawing inferences; reflecting, interpreting and reading between the lines.

Carlo and Sylvester draw a range of conclusions and present a range of strategies for developing second language literacy skills that include the:

1. paying attention to accuracy, speed and word decoding;
2. translation; and
3. drawing attention to frequently used concepts, vocabulary and grammatical structures and the communicative functions of graphs, charts, drawings, etc. in the vocational environment.

Paying attention to accuracy, speed and word decoding

A main recommendation here is the need to 'consider both accuracy and speed in the processing of basic reading skills as indicators of second-language (L2) reading gains' (Carlo & Sylvester 1996:iii). The researchers view word decoding and students' development of flexible strategies for dealing with unfamiliar words as central indicators of cognitive as well as reading progress. They argue that improvement in 'low-level processing efficiency' [i.e. letter recognition and word decoding] may signify likely (later) gains in comprehension. The converse also holds – if students are not making progress in these things then more explicit attention to them is needed, if overall comprehension levels are to improve (1996:43). They draw particular attention to the common pedagogical practice of encouraging students to

skip unfamiliar words when reading or to decode meanings from the surrounding text and contextual clues. This practice is intended to encourage students to read for the whole meaning of a text (not just word-for-word reading) and to make the experience of reading more enjoyable and less laborious. The research that Carlo and Sylvester reviewed lent support to that practice, but also pointed to the need to help students develop a wider variety of strategies for dealing with unfamiliar words in text. They therefore recommend the integration of phonics with 'meaning-based reading curricula' (1996:43-4).

Translation

Many of the more communicative orientations to second language and literacy learning view translation as anathema – as interfering with spontaneous communicative processes. However, Carlo and Sylvester are of the view that 'access to concepts initially occurs through a process of translation that links the L2 lexical entry to the L1 lexical entry which, in turn, guides access to conceptual memory. As this process repeats itself through repeated encounters with a word, direct links from the L2 lexicon to conceptual memory are formed' (1996:44). Therefore, from a cognitive perspective, translation is a necessary part of particular stages of L2 reading development.

Drawing students' attention to repeatedly used concepts, vocabulary and grammatical structures and the communicative functions of graphs, charts, etc. in the vocational environment

Carlo and Sylvester recommend the use of authentic reading materials, on the basis that 'it may be counterproductive to alter the syntactic complexity of texts to simplify them for L2 learners'. In a counter-intuitive way, they found that simplifying texts negatively affected their comprehensibility for L2 learners. However, the case is also made for learners' attention to be drawn to particular concepts and vocabulary, grammatical structures used repeatedly in a text, for example, passives, complex noun phrases, communicative functions and particular ways of obtaining information in the vocational environment - tables, graphs, charts, and so on.

Other strategies outlined earlier such as those for developing thinking skills with vocational education content could also be deployed in relation to second language literacy such as using generative questioning techniques and making thinking/reasoning explicit; modelling and coaching thinking skills or mental processes; deploying a mixed pedagogy; providing effective formative feedback; not relying on ICT, etc.

Integrating literacy skills with vocational education content: Implications for professional development

As in the previous sections, all of the above processes carry professional development implications. There are three key points:

1. the onerous demands that becoming a literacy expert places on vocational teachers;
2. the resource implications of 'team teaching' (although the idea of 'learning specialist' is potentially more generic, and could encompass all student support activities); and
3. there is ample scope for vocational lecturers to become more aware of the implicit (language and) literacy demands of their style of teaching, their handouts, the texts they use and the assessment procedures in use.

One of the ideas put forward from the FET literature review is that the vocational curriculum could be organised so as to allow for modules in which the vocational emphasis is retained, but there is a greater balance of attention to literacy needs. Certainly the international FET literature would seem to endorse this as a valid option, as long as the vocational content element is not lost.

Integrating language with vocational education content

This section considers a range of pedagogic practices for developing

- language with vocational education content; and
- second language with vocational education content.

Developing language with vocational education content

In the literature on the South African AD movement, acknowledgment of the relationship of language to cognition and of language to social context has had implications at a practical level in terms of the way language was developed which, in broad terms, involved a call to use the mainstream curriculum as a vehicle for language development by integrating language development with the teaching of content.

Wirberg (2000:182) makes a distinction between 'content based language teaching which use[s] content merely as a means for communicative language learning ignoring conceptual

development and discourse specific learning' and 'integrated approaches'. In many respects, 'content based language teaching' is what takes place in many language courses serving faculties or specific disciplinary areas. Language specialists teaching these courses take a piece of disciplinary 'content' and use it as means for developing language. The content (and in a humanities course, this would typically involve looking at issues such as 'culture' or 'identity') thus becomes a vehicle for language learning but is not a focus in itself since the main aim of the course is language development. Integrated approaches, on the other hand, always aim 'beyond second language learning to learning language for academic purposes and beyond language learning to understanding of content' (Winberg 2000).

Unsurprisingly, a salient feature of integrated approaches to language and content development identified in the literature on South African AD is the teaching of vocabulary/terminology in relation to construct formation and development.

Explicit teaching of vocabulary/terminology in relation to construct formation

Jiya (1993), for example, points out that the words which cause most problems in conceptualising scientific ideas are not those which are purely technical but those which are in normal English usage (see also Mutimucuo 1995). Clayton (1995) takes up this point noting that the links of words such as 'diffusion', 'folk etymology' and 'hypercorrection', which have very specific meanings in the discipline of linguistics, to 'everyday concepts' can be problematic given that students are likely to try to build disciplinary understandings on the basis of prior knowledge. A small piece of in-depth research with five students which looks at the development of their understanding of these terms then allowed Clayton to conclude that i) textbook definitions, even when written in fairly accessible language, do not ensure that students will be able to elucidate relevant examples or use the terms competently in context; and ii) that interaction with the teacher is of paramount importance (and in some cases is the only factor) in assisting students to master the conceptual understandings associated with lexical items and to use them in an informed manner in disciplinary discourse.

It would appear, then, that disciplinary specialists have a potentially important role to play in the development of vocabulary related to particular areas of study. Although the literature is not explicit about ways in which this could be done, it is not difficult to posit some strategies which would be of use in the classroom.

An initial set of strategies include:

- getting students to master new vocabulary phonemically and to recognise it in writing; and

- explaining or exploring the differences between the scientific/technical and commonsense meanings (described earlier as a strategy for teaching thinking skills with content).

Getting students to master new vocabulary phonemically and to recognise it in writing

In introducing a technical item, a lecturer could, for example, invite students to say it aloud for themselves (this would be a very common strategy in the foreign language classroom). Similarly, unfamiliar words could be written on the blackboard for students to copy into notes. A more formal strategy might involve getting students to keep vocabulary notebooks or word lists, a common practice in many English for Academic Purposes courses.

Explaining or exploring the differences between the scientific/technical and commonsense meanings

At the level of conceptual development, an awareness on the part of lecturers, that a vocabulary item has both scientific/technical and commonsense meanings which differ from each other in some way, coupled with a willingness to explain or explore the differences between the two meanings would be crucial. In Clayton's (1995) study (described earlier under *developing language with vocational content*), interaction between student and lecturer around the meaning of words was crucial in promoting conceptual development and appropriate usage.

Developing second language skills with vocational education content: The international FET literature

This section on integrating language with vocational education content also considers a range of pedagogic practices for developing second language with vocational education content.

Drawing on the FET literature, several key strategies for teaching second language with vocational education content are recommended. These are:

1. drawing attention to higher order thinking skills and linguistic functions of the vocational curriculum;
2. analysing and teaching the language patterns embedded in the language demands of the classroom;
3. distinguishing students' first language from standard English; and
4. maximising opportunities for oral and written language development.

Drawing attention to higher order thinking skills and linguistic functions of the vocational curriculum

From a cognitive perspective, Platt (1996:8) suggests that vocational and language teachers highlight the higher order cognitive and metacognitive aspects of a particular curriculum (particularly comparing and contrasting, analysing and synthesising) when making adaptations for second language learners.¹⁴

Analysing and teaching the language patterns embedded in the language demands of the classroom

Ivanic and Ming-i (2005:24) suggest that 'teachers should be aware of the potential of their language use to act as a sample of the language to be learned'. In practice, teachers generally talk too much 'eliciting brief, predictable responses, rather than engaging learners in authentic conversations about vocational topics...listening is praised, while talking is discouraged. Student-initiated questions are still rare.

Platt (1996:23) recommends paying particular attention to patterns of interaction in the classroom. These can be subject related and/or more generalised communication processes. In terms of the former, some patterns are very common in vocational education, namely explaining processes and procedures and trouble-shooting, for example. In terms of the latter, Barton and Pitt (2003:14) report on an ethnographic study of four multi-lingual classrooms in which most of the learners were young adults (16-19). It was found that the learners needed some 'explicit teaching of the specific kind of talk needed for group learning tasks'.

Distinguishing students' first language from standard English

Students are reported as having difficulties on mainstream FET courses distinguishing their first language from standard English when writing. So, 'language awareness' for students and explaining or exploring similarities and differences between the first language and English terms is considered an appropriate pedagogy here.

Maximising opportunities for oral and written language development

The literature recommends selecting teaching and learning activities that maximise opportunities for oral and written language development. In multilingual environments there are particular strategies that can be deployed. Students can be encouraged to discuss problems in languages other than English, and more proficient learners can translate and explain things to others. Adopting free use of languages in the classroom is seen as important in valuing multilingualism as a resource, rather than seeing it as a problem. Establishing commonalities and differences between how things are expressed in different languages is seen as a productive meta-level language activity.

¹⁴ Because these skills are deemed to be most transferable.

Developing second language skills with vocational education content: The South African literature review

The *AD literature review* cites research conducted at both University of Cape Town (UCT) ('Overcoming barriers to learning' cited in Kapp 1996) and the University of Transkei (UNITRA) (Mugoya 1991 cited in Kapp 1996) that shows that the use of English as the language of learning and teaching has serious implications for students for whom English is an additional language. In the UCT study, black students complained that they were not willing to ask lecturers for help for fear of being labelled as 'problem black students' or for fear of receiving patronising responses from staff members. Language use was thus associated with stigma and marginalisation.

Observers also found that i) significantly fewer black students than white students were taking detailed notes in lectures; ii) fewer black students than white students participated in class discussions; and iii) that participation correlated strongly with students' performance. In the UNITRA study, seventy three percent of students interviewed claimed that they were afraid to 'respond in the classroom because they are afraid to make mistakes in English' (Mugoya 1991:11 cited in Kapp 1996). However, Kapp (1996) goes on to cite Skehan (1993) who notes that making errors is an indication that a student is taking risks and risk taking is associated with success in language learning. Given these observations, an argument for the promotion of multilingual environments which allow students to draw on the resources of both home and additional languages is powerful. Strategies for *teaching second language with content* from the *South African AD literature* thus focus on the promotion of bi/multilingual environments through:

1. code-switching;
2. translation; and
3. the use of materials in students' home languages.

Code-switching

Peires (1994:175) argues for the use of what is technically termed 'code-switching' in the University of Transkei, noting that code-switching is 'typical of the communicative conventions used by bilinguals in their discourse' and thus pointing to the inauthenticity of the 'English only' discourse cited earlier. She goes on to add that:

...the more students can discuss something – whether in English or in Xhosa (but they will probably code-switch) – the more they will master the topic. Moreover by code-switching, both languages are being used for real communication and the second language is no longer an "academic abstraction" as is so often the case. The fact that the English phrases can be translated or paraphrased, that English words can be adapted to the structure of Xhosa (as in code mixing) and that the more familiar word (whether it be Xhosa or English) can be used to suit the occasion makes the language a learning tool and an aid to learning. With the focus of "grammatical correctness" both

the languages are used for their explanatory power and communicative value (Peires 1994:181).

Following research into code-switching conducted at the Medical University of South Africa (MEDUNSA), wa Kalonji (1995) affirms Peires' comments with interview data which shows that the majority of students in his study claimed that i) they could not think in English and therefore need to think in their home languages and then translate into English; ii) they often do not have the vocabulary to express concepts and ideas in English and therefore resort to their home languages; and iii) even when they have the resources to express themselves in English, they often use home languages in group work to accommodate peers who are struggling.

Translation

Clearly, allowing students to code-switch is more problematic if a lecturer does not speak the students' home languages. This does not mean that code-switching is not possible, however, since students can be allowed i) to use their home languages in group discussion focused on the clarification and elaboration of conceptual knowledge; and ii) to assist each other in code-switching. A student could, for example, call on a peer for assistance in translation from the home language to English. These sort of activities presuppose, however, a lecturer who i) understands the use of the home language as a resource in learning; and ii) is willing to run a 'participative' class where students interact with each other in groups and also assist each other in learning.

Kapp (1996) describes a more elaborate system of establishing multilingualism in learning environments through the use of tutors who speak students' home languages in the English for Academic Purposes course in the Arts and Social Sciences at UCT. Postgraduate students who are speakers of various African languages are employed to co-teach with lecturers on the course. In addition to the benefit of being able to use both home and additional languages in the class, Kapp lists other advantages of the systems including the fact that i) tutors receive in service training; ii) lecturers have access to knowledge about classroom dynamics from which they would normally be excluded by virtue of the fact that they do not speak an African language; iii) African tutors act as important role models within the class; iv) disagreement between tutors allows students to understand that academic knowledge is about multiple perspectives and debate; and v) the conventional hierarchy of power is broken down. Lecturers in the course she describes are, however, AD practitioners and it would probably be much more difficult to get mainstream lecturers to work in this way especially given the challenge to traditional power hierarchies.

Use of materials in students' home languages

Strategies to promote multilingualism continue to be an area of interest in AD with at least two pieces of doctoral research examining the use of materials in students' home languages in the development of learning. Dalvit (in progress), for example, is examining the effect of computer-based glossaries in Xhosa on students' understanding in a Computer Science course, while Thomson (in progress) is researching students' lived experiences of an academic literacy module which incorporates the translation of reading texts into Zulu. Both promise to be important studies.

Developing second language skills with vocational education content: Implications for professional development

As with the other areas of concern discussed earlier, considerable professional development issues are raised by the language question. Certainly there is scope for lecturers to receive support in better understanding both the demands inherent in their particular usage of language, and the particular demands of different subject curricula. It is also suggestive as a potential FET specialism, which would benefit from the creation of PhD studentships and bursaries, so that more wide-ranging South African work on language issues could be drawn together and oriented to FET, including the work of (ex) NGOs, for example.

Conclusion – A pedagogic balance

The focus of this section has been on pedagogical processes and practices considered to be effective in addressing student academic support needs for the development of thinking skills; the theory-practice relationship; literacy; and language. The literature suggests a range of non-universalist 'mainstream' teaching strategies to support students.

Some examples are:

- developing a shared cognitive or thinking skills framework across cognate subject areas;
- deploying a mixed pedagogy which includes open-ended tasks;
- maximising opportunities for oral and written language development;
- designing 'staged' tasks that provide clear guidance as to what is expected;
- explicit teaching of vocabulary/terminology in relation to concept formation; and
- making differences between commonsense and scientific terms explicit.

Clearly, this is likely to have professional development implications for mainstream staff. There are, however, two key considerations: The first of which is that, when theoretical understandings associated with particular practices are not properly understood, strategies tend to be deployed in ad hoc and instrumental ways.

A key argument from the *FET literature review* is that, in contemporary 'managerial' discourses in the international FET college sector, pedagogy and 'process' have been sidelined in favour of 'outcomes'. On the other hand, it is possible that academic support work and development will be approached using pedagogies that are humanistically inclined. For example, learner-centred approaches favoured by Lipman and Paul (in Moseley et al. 2004), and learner empowerment through social construction of knowledge which is strongly favoured by Belenky et al. (1986), King and Kitchener (1994), and Jonassen and Tessner (1996/7) (in Moseley et al. 2004). These theorists emphasise process over content.

Thus, the second consideration is that, there is a danger in the notion that 'process' alone delivers 'quality' when in fact too much attention to 'process' may detract attention from discipline knowledge, to the extent that, as Coffield et al. (2004:126) put it, 'we end up with content-free pedagogy, where process is celebrated at the expense of content'. Therefore, the recommendation emerging from the review of *international FET literature* is for a broad and differentiated view of pedagogy – a 'mixed' approach where attention to 'process' does not detract from the learning of content knowledge.

The next section of this chapter discusses the student support models currently manifested in institutional development at South African higher education institutions to provide time and opportunities for students to access necessary knowledge and skills, and language or discourse for the specialisation of their occupational identities.

MODELS OF STUDENT ACADEMIC SUPPORT EMERGING FROM THE SOUTH AFRICAN HIGHER EDUCATION SECTOR

Foundation modules or courses continue to form a central means of offering support to students in the current phase of the South African higher education academic development movement. A distinction between the terms, 'bridging' and 'foundation' can be made by explaining 'bridging' courses as courses which attempt to look back to the Senior Certificate syllabus, which is then re-taught in an attempt to improve students' readiness to engage with tertiary studies. 'Foundation', on the other hand, can be used to refer to courses which look forward into the university curriculum and which therefore attempt to teach the skills and conceptual areas which are necessary as a base for further learning. Inherent in this distinction (which is by no means used consistently) is the idea that 'bridging' courses assume that school learning (measured by the Senior Certificate examination) is an

appropriate preparation for tertiary study, while 'foundation' courses assume that the base needed to proceed further is not necessarily the same as that laid at school.¹⁵

Bridging and foundation courses can take two forms. Students can be required to enroll for an additional year of study before they are admitted to the university. Admittance is then dependent on satisfactory performance in this additional year. Alternatively, bridging or foundation work can constitute a year of study which is built into the 'bottom' of the university curriculum. Students are enrolled for a programme leading to a qualification, but need to complete the bridging or foundation year before they move onto 'normal' first year courses. Such foundation and bridging courses are generally non-credit bearing and students needed to complete the preparatory year before proceeding to engage with first year courses.

However, one of the major issues related to foundation and bridging courses has always been what happens to students once they leave the programme. Writing in 1984, Bradley notes that the progress of students once they have left a chemistry course is not good and observes 'the transition from Chemistry I (non-major) to Chemistry II (major) is another quantum leap ... Frankly the failure rate of all students in Chemistry II is alarmingly high (1984:35)'. Students on such courses were usually taught in small groups with lecturers using 'alternative' teaching methodologies intended to promote the construction of meanings rather than simply the transmission of knowledge. While students might fare reasonably well in such 'nurturing' environments, once into the mainstream they would frequently 'hit the wall' and begin to fail. This concern is addressed by Kotecha and Rutherford (1988) amongst others.

In some cases, foundational modules at HEIs currently replace modules which form part of the mainstream curriculum. This means, for example, that a student might complete a credit bearing academic literacy module or course which replaces a 'content-based' course such as sociology or anthropology in a BA programme. Similarly, a computer literacy course might replace another first year credit bearing course. Indeed, following the introduction of the National Qualifications Framework (NQF) and at some institutions, it would appear that relatively large numbers of 'qualification' credits have been replaced by 'development' credits.

However, Yeld (1986) raises an important issue in relation to assigning a credit value to AD type courses, and this relates to the notion of 'credit' itself. Theoretically, a 'credit' is a unit of learning and students enrolled on a three year degree programme immediately engage with the units of learning at the 'appropriate' level. 'Underprepared' students, however, need

¹⁵ A distinction between school-based and university learning informs some of the thinking behind the increased use of the term 'foundation' as well as the curricula development within foundation courses.
NSAC Research Report

development and if that developmental work is credited within the structure of a 'normal' qualification by replacing some 'qualification' credits with 'development' credits then the overall 'value' or 'standard' of the qualification is ultimately lowered. The only way to overcome this phenomenon is to extend the length of the time taken to complete the qualification. An alternative, therefore, is to offer foundation courses or modules *in addition* to mainstream credit bearing modules. The foundation work is then non-credit bearing as it is supernumerary to the credits required for the qualification.

One of the most frequent responses to the need to offer additional foundation modules or courses is thus to build them into the curriculum in addition to the normal work load. In SAQA terms, a 'normal' year's tuition consists of 120 credits. It is assumed that the average student will need 1 200 notional learning hours to complete the learning embodied in these credits (1 credit = 10 notional hours). 1 200 hours are then considered to be a reasonable time to spend on studying in an academic year. If foundation modules are offered in addition to the 120 'mainstream' credits, then the student becomes overburdened and, when mainstream assignments and tests are due, is likely to start absenting herself from the non-credit bearing classes and work. The importance of offering foundation work, in addition to mainstream work, by extending the time taken to complete a programme of study therefore needs to be recognised if large numbers of foundation credits are deemed to be required by students considered to be 'at risk'.

It is important to note, thus, that there are two ways of moving students through an extended curriculum. Students can simply take *fewer courses and have more time* to devote to their studies (*the so-called 'slow stream' model*) or students can take fewer courses and be provided with additional support. The second method is now favoured over the first since students are understood to need support in, for example, reconstructing commonsense assumptions which, if left unchallenged, would impede the development of more appropriate conceptual knowledge.

So, although a common response to the need to provide additional foundation credits is to combine them into a year-long programme at the bottom of a normal programme of study, there are other options which, in theoretical terms, are more appropriate as they provide development and support up into the mainstream curriculum. The most common extended model is to divide a 'normal' first year credit load into two so that the student engages with half in his or her first year of study and the other half in his or her second year of study. These 'mainstream' credits are then 'packed around' with developmental or support credits. The first year of such a curriculum would consist of 60 'mainstream' credits and 60 'foundation' credits. The second year would be the same. Obviously, it is possible to play with credit distribution so that support and development extend into the third year of a four year extended curriculum.

However, the provision of additional foundation courses or modules is not the only way to extend a curriculum since it is also possible to use existing courses or modules to provide development or support. There are two main ways of doing this. The first is to develop what is commonly known as an 'augmented course'. In an augmented course the normal tuition hours are increased. Most commonly they are doubled, although they can be increased by one third, one quarter or some other proportion. Support and development is then built in to the teaching of the course so that it occurs in context. The support and development is preferably provided by the mainstream lecturer who is able to progress through the syllabus at a slower pace since more tuition hours are available and thus build in additional activities. It is also possible for academic development staff to work in conjunction with the lecturer in a team teaching approach. One advantage of offering an augmented course is that students who are enrolled on it can finish the course at the same time as students enrolled on a 'normal' course.

The second way of using existing courses or modules is to run them as what are known as 'half courses'. Half courses are simply run over an extended period, most commonly double the amount of time. This means that a semester long course might be offered over an entire year with no reduction in the number of tuition hours per week. Again, half courses can be taught by the mainstream lecturer alone, or in a team approach in conjunction with support staff. In offering augmented or half courses, a key theoretical consideration needs to be taken into account. This is that the support work is not intended to be 'adjunct' or 'add on' to the mainstream curriculum, but is rather an integral part of it. This means that support work does not consist of the teaching of 'skills' or remedial content in isolation. Rather, skills are contextualised within the need to engage with mainstream learning and gaps in knowledge are filled in relation to the concepts that comprise the mainstream curriculum.

CONCLUSION – MAIN MODELS EMERGING FROM THE LITERATURE

Essentially five main models for incorporating academic support are distinguishable in the international FET literature and the literature on the AD movement in South African higher education institutions. These are:

- **foundational models** (providing a 'gateway' into the mainstream course by developing the necessary subject knowledge base and conceptual or 'vocational' language for coping with the mainstream course);
- **'catch-up' models** (features include course-based targets of improving the average performance of students, pace setters with assessment points, and compulsory 'catch-up' sessions);
- **'slower stream' models** (features are similar to the above, however, students cover the curriculum at a slower pace over an extended period of time);

- **literacy 'in context' models** (language and literacy development is located in the context of the subjects. Support focuses on assisting lecturers in better understanding the relationship between language and learning); and
- **'separate' literacy models** (focus on developing students' language proficiency, communication, reading and writing skills separately from course content, and is generally applied where intensive learning to reach a certain threshold is indicated).

In Part 2 of this report, Chapter 6 provides a description of each of the models and outlines which of the various models are perceived by college leadership as feasible and practicable for incorporation in different South African FET college contexts. In presenting the findings from the student support case studies of South African colleges, Chapter 5 identifies areas of concern or difficulty requiring academic support. It describes the extent to which some of the classroom practices that seem to hold promise for academic support purposes in South African higher education institutions and the international FET college sector are evident in the sample of FET lessons observed.

**PART 2: STUDENT ACADEMIC SUPPORT CASE STUDIES
FROM THE SOUTH AFRICAN FET COLLEGE SECTOR**

Chapter 5

STUDENT SUPPORT CONCERNS AND PRACTICES

INTRODUCTION

This chapter:

- elaborates on the research process for case studies conducted in the four FET colleges which form the internal research focus (see also Chapter 1); and
- presents findings from the case studies related to the research questions outlined in Chapter 1. These relate specifically to i) identifying areas of concern or difficulty requiring academic support; and ii) evidence of student academic support classroom practices and processes in a sample of mainstream FET college lessons.

FOUR FET COLLEGE CASE STUDIES

Sites and samples

The case study colleges

The sample of four SESD-supported colleges is spread across the three provinces of North-West, KwaZulu-Natal and the Western Cape. For the purposes of this report, the identities of the participating colleges, their staff and students are confidential. However, to highlight the range of features manifest in the sample, a brief background description of each case study college and its campuses or delivery sites is provided.

College A consists of five campuses. Four campuses are urban: one is in town with the corporate centre across the road; one is in a township on the outskirts of town; another is in a predominantly white suburb; and the fourth is a skills-training campus that used to belong to a mining house. The fifth campus is located in a rural area and is quite removed from the other campuses. Although the majority of students at the college are African, the college still

attracts white, mainly Afrikaans-speaking students. Whilst many of the African students have matriculation certificates (although not always in maths and science), many of the white students have not completed their schooling. Lecturers reported that the white students tend to come from surrounding farming areas and are sent by their parents to obtain a 'backup career' to supplement life on the farms. According to senior management of the college, most of these students experience city life and freedom from parental control for the first time. The African students tend to be more goal-directed and work harder.

In addition to the variance in students' attitude to learning is the language issue. Most of the lecturers are white and Afrikaans speaking although there are some recent staff appointees who are black. In the past the language of instruction at the college was Afrikaans. However, the college now selects the language of instruction based on the majority of students in the class. As the majority of students speak an African language at home and do not speak Afrikaans, the main language of instruction is English with other languages used depending on the language competence of the lecturer. Afrikaans-speaking students and their parents are reportedly unhappy with this decision, although students can write the examinations in Afrikaans or English. Three of the college's five campuses were included in the case study research project.

College B is a small, deep rural college operating in a severely depressed socio-economic region that is characterised by a low population density and very high unemployment (about seventy per cent) and poverty indices. The educational levels of the region indicate that most people (thirty-six per cent) do not have any formal schooling, and seven per cent have Grade 4 as their highest level of education. Those with Grade 12 and a diploma as highest qualification constitute only 0.5 per cent of the population. In the last few years a dramatic economic decline has occurred in the region served by the college. For example, virtually all coalmines have closed down leaving behind communities which developed around the mining infrastructure and operations. As a result, various established chain stores also pulled out of the area. A consequence of these developments is that employment levels have dropped even further.

The college was declared a merged institution at the end of 2001. The merger comprised the amalgamation of two ex-technical colleges, a former 'state aided' ('white') technical college and a former 'state' ('black') vocational training centre, which are separated by a distance of about 120 kilometres. A Business Studies department was attached to the latter site at the beginning of 2003 and became an autonomously-managed site. A couple of skills centres, which did not operate at any significant levels, were in existence at the time. Since the merger, the college has been trying to refocus and reposition itself to better respond to the peculiar deep rural characteristics and realities of the region it serves by targeting previously neglected communities in the remote corners of the region. Arguably the current scenario in the region opens a door of opportunity for the college to reach out to communities by

offering opportunities for skills development and entrepreneurship interventions and related qualifications through niche areas of tourism (hospitality, reception and accommodation); agriculture (training towards communities feeding themselves as well as commercial production); and forestry.

At a structural level the establishment of an integrated network of campuses with clusters of skills centres was envisioned as becoming the mechanism for such re-aligned and prioritised provisioning. Seven campuses and about the same number of skills centres are now established, and further expansion is being 'speeded up' by funding acquired through the FET recapitalisation programme. A moratorium on appointments which has been in place for many years is finally being lifted, and permanent appointments are currently being made. However, formal NATED programmes currently comprise about eighty-five per cent of provisioning at the college with the balance comprising short, non-accredited courses. Three of the seven campuses were included in the case study research project.

College C consists of a central office and seven campuses, one of which was established in the last two years and another of which was only established during 2005. Three of these campuses are in or within a few kilometres of the town where the central office is located. The fourth campus is located in a town about sixty-five kilometres inland, whilst the fifth is located approximately sixty kilometres away up the coast. The sixth campus is in a township approximately two hundred and fifty kilometres inland from the town where the central office is located and the seventh approximately one hundred and ten kilometres up the coast. The catchment area for the college is the largest of all the FET colleges in its province.

Three of the seven campuses were included in the research project. One of these campuses only provides the National Intermediate Certificate (NIC), National Senior Certificate (NSC) and the new National Certificate in General Business Administration NQF 2 and 3. This campus tends to attract students who have dropped out before completing high school, failed Grade 10, 11 or 12, or just completed Grade 9 and hope to get their Grade 12 in two years instead of three given that the college route enables them to 'skip' Grade 10 and go directly into NIC (which is equivalent to Grade 11) and then NSC. The second of College C's campuses that was included in the research provides NSC, three N4-N6 Business Studies programmes – Management Assistant, Business Management and Financial Management as well as Early Childhood Development (ECD) NQF 4 and 5, and an NQF Hairdressing programme. This campus is the main campus providing post-Grade 12 NATED Business Studies programmes. All of the students registered for N4-N6 Business Studies programmes at the campus have passed Grade 12 and are thus at a higher academic level and are more mature than the students at the first campus.

The third campus included in the research, provides NSC, two N4-N6 Business Studies programmes – Management Assistant and Marketing Management, and two N1-N6 Engineering streams – Electrical and Mechanical. The Electrical Engineering stream has two branches – heavy current (electrician) or light current (electronics). The Mechanical Engineering stream includes Motor Trade theory and Fitting and Machining. The Engineering Department also provides the National Certificate Orientation (NCOR). Entry into N1 Engineering programmes is Grade 9 with science and mathematics and for N4 it is N3 or Grade 12 with very good mathematics and science results. However, given the lack of readiness of many students for Engineering, Grade 12 students are reportedly often advised to start at a lower level.

College D has five campuses spread along a one hundred and fifty kilometre corridor of a region that has a mixed economy with mining, tourism and mixed farming as the leading sectors. In 2005, the college's student head count was 11 985 and the total number of full-time equivalents (FTEs) was 5 686. African students accounted for eighty-three per cent of the student body, followed by white students at sixteen per cent. Together Coloured and Indian students accounted for only one per cent. There were ten per cent more male than female students across the college. However, a recent revision of provincial boundaries has resulted in the two larger campuses falling within another province and the college has received official notification that it will lose these campuses. The impending change has serious implications for the student and staff profile, the range of college facilities, the breadth of its curriculum as well as for the number of its FTEs. For example, in 2005 the two larger campuses accounted for just under sixty per cent of the college's FTEs and the majority of its practical Engineering lecturers and facilities. In order to offset this anticipated loss, the college has opened a new campus and has begun to expand the capacity of the remaining campuses to deliver additional Engineering courses.

Three college campuses were visited for the case study. The largest of these three campuses had thirty-three per cent of the college's FTEs in 2005 and is situated in the peri-urban area of a large city. It offers Engineering, Business, General and Utility Studies and has good workshop facilities and a number of lecturers who are trained artisans. The focus at this campus has been on the development of NQF and SETA-aligned skills programmes and learnerships in carpentry, construction and mechanical engineering. The students predominantly speak an African language at home. English is the medium of instruction. Over the past two years the college has been attempting to address this campus' history of poor results. This has had moderate success to date which is attributed to improved lecturer attendance and timekeeping, in-service support to those lecturers who have no education qualifications, continuous assessment, and improved campus management and administration.

In 2005 the second, smaller campus visited accounted for fourteen per cent of the college FTEs. Until recently this was a Business Studies campus with a reputation for good NATED results and sound NQF-aligned short courses in Computer Studies and Accounting. In 2006 afternoon classes in Engineering Theory were also introduced. The majority of students speak the African language of the region, followed by Afrikaans-speaking students. English is the primary medium of instruction. A number of students use Afrikaans textbooks and choose to write their tests and examinations in that language. Campus lecturers take pride in their generally good results. However, they acknowledge that a rapid increase in student numbers and the loss of a few experienced lecturers who were unwilling to continue in contract posts, had resulted in concerns about maintaining high standards.

The third campus visited accounted for twenty-seven per cent of the college FTEs in 2005. As a result of growth in the town where the campus is situated, there is a shortage of places in English-medium high schools and this has led to an increase in the number of African students entering the college. This campus offers programmes in Business, Engineering and Utility Studies as well as in Art and Music. NATED programmes predominate, but the campus also offers NQF-aligned skills and short courses and learnerships in Information Technology, Boiler Making and in Electrical Wiring. The learning and teaching facilities, especially the Engineering workshops, are operating near to the limits of their capacity. English is the medium of instruction but a few students use Afrikaans textbooks.

The lecturers and students interviewed

Experiences and perceptions about student academic support needs were obtained from two groups – students and college lecturers, the assumption being that the effects of difficulties or blockages to student ‘success’ are most directly experienced by these groups. A sample of thirty-two college lecturers was interviewed (eight from each college spread across various college campuses) comprising fifteen Engineering and seventeen Business Studies lecturers whose lessons were observed.

A sample of fifty ‘non-initial’ college students was interviewed (twelve students from three case study colleges and fourteen from the fourth college). ‘Non-initial’ students are those on the more senior courses whilst ‘initial’ students are on courses such as National Intermediate Certificate, National Senior Certificate and National Certificate Orientation (NCOR) or N1. The sample comprised twenty-five Engineering students and twenty-five Business Studies students. Forty-seven students were at the NATED N3-N6 level and three students were NQF level 2. Tables 5.1 and 5.2 show the distribution of the student sample as a whole in terms of gender and population groups:

Table 5.1: Student interview - gender

	%
Male	50
Female	50

Table 5.2: Student interview - population group

	%
African	72
Coloured	8
White	20

Table 5.3 shows the percentage of students by field of study and gender.

Table 5.3: Students by field of study and gender

	% Male	% Female
Business Studies	16	34
Engineering	34	16

The college leadership interviewed

Forty-four senior management members across the four colleges were interviewed through focus group interviews. A single focus group interview was planned with as many as possible of each of the college's leadership or senior management at campus or head office level, including the head of student support.

At College A eight members of senior management (excluding the Chief Executive Officer (CEO) who was unable to attend) attended a two-hour focus interview.

At College B it was not possible to get everybody together largely because of the multi-site campuses of the merged college, thus four academic leadership focus group interviews were conducted involving a total of fifteen staff members. Three of the interviews were conducted at three different campuses, each involving four participants, whilst one interview was conducted at the central office and involved three participants.

At College C sixteen members of the management and leadership team, including all campus heads, the CEO, the SSU manager and a number of programme managers and academic heads participated in one focus group interview. The academic vice rector was unable to participate as she was on leave, nevertheless, the researcher reported that all campuses and programme areas were represented in the discussion.

At College D five members of senior management were interviewed. These included the deputy CEO, the head of academic affairs, the assistant head of academic affairs and the student support manager and deputy manager. Several of these participants had been senior Engineering Studies and Business Studies lecturers. The CEO was unable to attend the main discussion but joined the group later.

The classes observed

In the interview with college leadership, senior staff at each of the case study colleges were asked to identify five of the course subjects in the main areas of provision considered 'high-risk' in terms of evidence of poor results and low pass rates at their college. The idea was to use student results from the previous year to verify that subjects taught in the observed lessons are in fact 'high risk'. However, college leadership cautioned that pass and failure rates are influenced by other factors besides the nature of the subjects, for example, differences in student intakes in terms of overall ability levels and their entry levels of competence as well as lecturer quality. Nevertheless, the following is the combined list of 'high risk' subjects compiled from information from all four case study college leadership interviews.

Table 5.4: 'High risk' course subjects identified by college leadership

Business Studies
Accounting N1-N5
Applied Accounting
Cost Accountancy – post grade 12
Business English N2-N3
Business Practice NIC/N2
Economic and Legal Environment – all levels
Labour Relations N5-N6
Management Assistance N4-N6
Marketing Management N4-N6
Marketing Research N6
Office Practice N4
Sales Management N5
Small Business Management and Entrepreneurship N3
Engineering
Electrical Trade Theory NIC/N1-N2
Engineering Drawing N1-N3
Engineering Science 'especially the lower NATED levels'
Engineering Science N3
Industrial Electronics N3-N5
Mathematics - all levels
Motor Trade Theory N1-N3
Science – all levels
Theory in respect of all the Engineering courses

Some college leadership reported that students generally found National Intermediate Certificate (NIC) and National Senior Certificate (NSC) difficult. Business Studies students tend to find 'all subjects requiring mathematical calculations difficult'. The academic head for Engineering at one campus stressed that, although their department provides thirty-four subjects, students experience problems in only six of these subjects.

Subjects taught in the lessons observed

Researchers observed eight lessons at each of the four case study colleges. The plan was for them to observe lessons in subjects considered to be 'high risk' at each of the FET four colleges - four Engineering and four Business Studies course subjects. Not all the classes identified by colleges and actually observed by the researchers were ideal candidates in terms of the definition of 'high risk'. One observed class, for example, was a self-paced modular programme where all students 'eventually pass' but has been included in the sample as the concern is not pass rates but the length of time students take to complete the programme. Although it is possible to complete the programme in 10 weeks, a number of students take much longer. In 2005 some students reportedly took up to 40 weeks to complete the module. Another of the classes that a researcher observed has not been included in the sample as it is a learnership being piloted for the first time in 2006 and thus not yet identifiable as 'high risk'. A limitation reported by researchers in relation to the sample is that some 'high risk' subject lessons clashed with other timetabled observations. In one class the present incumbent was absent and instead the researcher observed a lesson taught by a 'replacement' lecturer who focused on areas where the particular group of Engineering students were experiencing problems.

Table 5.5 shows the 2005 results provided by colleges for each of course subjects observed in 2006. It should be noted that a number of the classes observed in 2006 are being taught by different lecturers from those who taught the course subjects in 2005 where the results were poor.

Table 5.5: 2005 results of course subjects of the observed lessons

Business Studies					
Programme type	Course Subject and Duration	Level	% drop out	% failed	% passed
NATED	Applied Accounting - 1 semester	N2	8	92	0
NATED	Applied Accounting - 1 year	NIC	14	58	28
NATED	Business English NSC - 1 semester	N3	5	91	5
NATED	Business English 1st Lang. - 1 semester	N2/NIC	18	55	27
NATED	Business Practice - 1 year	N2/NIC	0	91	9
NATED	Business Practice - 1 semester	N2/NIC	7	50	43
NATED	Cost and Management Accounting (Business Management Programme) - 1 year	N5	4	36	61

NATED	Economic and Legal Environment - 1 year	NSC	18	49	33
NATED	Labour Relations (Human resource management) NSC - 1 semester	N5	0	75	25
NATED	Information Processing - 1 semester	N6	0	50	50
NATED	Management Communication* (Business Management Programme) - 1 semester	N4	10	13	76
NATED	Marketing Management - 1 semester	N6	0	77	23
NATED	Marketing Management - 1 semester	N6	6	76	18
NATED	Office Practice** - 1 semester	N5	0	12	88
NATED	Office Practice*** - 1 semester	N4	0	20	80
NATED	Personnel Management - 1 semester	N5	0	10	90
NATED	Sales Management - 1 semester	N5	4	48	48
Engineering					
Programme type	Course Subject and Duration	Level	% drop out	% failed	% passed
NATED	Electrical Trade Theory - 1 trimester	N2	4	50	46
NATED	Electro Technology - 1 trimester	N3	14	58	28
NATED	Engineering drawing (Mechanical Engineering) - 1 trimester	N2	7	48	44
NATED	Engineering drawing - 1 trimester	N1	9	42	49
NATED	Engineering science - 1 trimester	N4	8	50	42
NATED	Industrial electronics (Electrical Engineering) - 1 trimester	N4	11	56	33
NATED	Industrial electronics (Electrical Engineering) - 1 trimester	N2	0	58	42
NATED	Industrial electronics - 1 trimester	N5	0	43	57
NATED	Industrial electronics	N4	0	80	20
NATED	Mathematics - 1 trimester	N3	6	23	70
NATED	Mathematics (Civil Engineering) - 1 trimester	N1	0	80	20
NATED	Mathematics - 1 trimester	N4	0	75	25
NATED	Mechanotechnics - 1 trimester	N4	0	50	50
NATED	Motor Trade Theory (Civil Engineering) - 1 trimester	N1	19	38	44
NQF	Fitter and Turner - self paced allowing students to eventually pass	Level 4 artisan; Level 5 alternative trade test	4	4	92

* This course subject was identified by college management as 'high risk' although the 2005 results do not classify in quite the same way as the other subjects that formed the focus at the college.

** The researcher was unable to observe the N4 level course where only thirty-one of the sixty-one students who wrote the exam in 2005 passed as the timetable clashed with one of the other lessons observed. Instead, she observed N5 level students who were amongst the thirty-one who had passed in 2005.

*** These results are in marked contrast with results from other campuses at the particular college in that they exceed expectations. Apparently results for this 'high risk' subject at this campus also exceed provincial averages.

According to the lecturer, the average mark for provincial results for the course subject is twenty-seven per cent. Cases such as this should in future be used as 'success' case studies to establish reasons for this trend.

Students in the lessons observed

Ideally half (four) of the observed lessons at each college were supposed to be of course subjects with 'initial' level students and the other half with students at the 'non-initial' level. In actuality, thirty-nine per cent of the sample of lessons observed reportedly comprised 'initial' college students and fifty-four per cent reportedly comprised 'non-initial' students. Seven per cent of the classes were apparently 'mixed' but mostly 'non-initial' students. Information on the only NQF class observed was not available.

According to available data, the number of students registered for the thirty-two classes observed ranged from seven to fifty-four with an average of twenty-three students in a class. This information is confirmed by researchers' reports on the estimated number of students present in the observed lessons where data averages out at twenty-one students with the estimated number of students present ranging from three to forty-four. Lecturers' estimates of the range of ages of students across all the observed classes, ranged from fifteen to forty but with an estimated average age for the whole sample of classes as twenty.

According to lecturers' estimates only three per cent of students in the whole sample of observed lessons use English as their home language. An estimated twenty-six per cent of students speak Afrikaans at home, while seventy-one per cent use another southern African language as their home language. Less than one per cent of the students reportedly speak a language other than English or a southern African language at home.

Length of lesson observations

The duration of lesson observations ranged from forty minutes to one hundred and twenty minutes. On average the length of lesson observations was one hour.

Research process

The literature on academic development at South African higher education institutions and the international literature on academic support in the vocational or FET college sector in developed country contexts, indicated four areas of common concern related to students' educational success and requiring academic support. Other key factors considered to be important areas related to student 'success' in the South African higher education context were also identified. One of the aims of the case study research is to investigate the extent to which these factors are evident as key student support needs in the South African FET college context.

Researchers spent four to five days at each case study college collecting data during the period 8–20 February 2006.

Classroom observations

The classroom observation instruments used were designed to reflect some of the practices and processes advocated by academic development practitioners in South African higher education and the international FET college sector for overcoming the barriers identified (see Chapter 4). The schedule focuses on:

- use of language in tuition;
- issues related to 'academic' literacy, particularly reading and writing;
- the development of concepts and conceptual or technical language;
- practical applications of theory in the classroom context; and
- thinking skills and problem solving.

The lecturer and student interviews

The research instruments employed in the lecturer and student interviews used the areas of concern as their basis to ask questions and provide information (see Chapters 2 and 3). Lecturers and students were asked to agree or disagree in relation to twenty-nine items contributing to students' lack of success in subjects with high failure and/or drop out rates.

Post-lesson interviews were conducted with each of the thirty-two lecturers of the 'high risk' courses observed. Lecturers were asked what they think it is that makes the particular subject demanding or difficult for students. They were also asked to describe ways in which they avoid pitfalls when teaching this subject. Lecturers were then asked to indicate i) which of the list provided of blockages to learning they encounter on regular basis in relation to the study field; and ii) which of these aspects, in their opinion, require support or assistance or whether, in their opinion, support is being provided. In the focus group interviews with students, students were similarly asked to indicate which of the list of obstacles to learning they encounter on a regular basis in relation to 'difficult' course subjects in different study fields. Students were also asked to report on the language used by students whose home language differed from the language of instruction to discuss course work outside of the classroom.

Focus group interviews with college leadership

In the focus group interview with college leadership, senior staff at each of the case study colleges were asked to name the course subjects in the main areas of provision considered most 'high risk' and to outline what they think it is that makes each of these subjects demanding or difficult for students. Participants were then asked to describe what their

college is currently doing in terms of offering academic support. They were asked which, if any, of five models of incorporating student academic support (see Chapter 4) could work in their college in terms of improving student outcomes, and whether they could propose any alternative or additional models. Finally, leadership were asked about the support and resources needed to offer the academic support required and where responsibility for the various academic support needs should be located within college structures.

KEY FINDINGS IN RELATION TO THE RESEARCH QUESTIONS

Data analysis involved aggregating data from the four case studies to make generalisations for the sample as a whole.

Findings in Chapter 5 are presented in relation to:

- areas of concern or difficulty requiring academic support; and
- mainstream classroom practices and processes for student academic support.

Areas of concern or difficulty requiring support

These are the research questions:

- Which areas of concern or difficulty, identified as obstacles to student 'success' at South African higher education institutions and at FET/VET level internationally, are confirmed by staff and students at the case studies colleges as areas in need of academic support in the South African FET college context?
- What additional factors emerge from the data collected as possible barriers to learning in the South African FET college context?
- What, if anything, appears to differ?
- What are the main areas of concern at the FET colleges?

Areas of concern confirmed by the case studies

Lecturers and 'non-initial' college students were asked to agree or disagree in relation to twenty-nine items contributing to students' lack of success in subjects with high failure and/or drop out rates. In Appendix A, Table A shows the percentage of the entire sample of lecturers who agreed with each problem statement and rank order from highest to lowest levels of agreement. Table B shows the percentage of the entire sample of students that agreed with each problem statement and rank order from highest to lowest levels of agreement. Table C compares lecturers' and students' perceptions in relation to the 29 items.

Table 5.6 abstracts from this to list eleven common areas of greatest concern for both lecturers and students.

Table 5.6: Eleven areas of greatest concern for college students and lecturers

Students lack background knowledge and foundational understanding of particular technical subject areas
Students cannot speak English well enough
Students can read but struggle to make sense of and interpret academic or technical texts written in English
Students struggle to write extended texts or whole paragraphs in English
Students have difficulty when they have to apply theoretical knowledge in practical situations
Lack of access to resources that allow lecturers to provide students with opportunities to apply theoretical knowledge in practical situations, for example resources that allow for simulation (lecturer interview). Lack of opportunities for students to apply theory or classroom knowledge in real workplace situations (student interview)
Students can speak everyday English but have difficulty using it to talk about the way things work in particular technical areas
Students have difficulties with solving unpredictable or unfamiliar problems independently
Students' lack of numerical skills
Student absenteeism from their classes
Students struggle to make sense of and interpret technical diagrams, drawings and representations such as models, tables, graphs and charts, etc.

Drawing from the responses in the interviews to both the closed items and to more open-ended questions, staff and students at the four FET colleges appear to share the following concerns with the international FET college and South African higher education sectors:

- students' foundational knowledge and understanding of particular subject areas;
- students' proficiency in the language of instruction and assessment or examination;
- issues related to the development of 'academic' literacy, particularly reading and writing, and the development of concepts and the conceptual language to talk about the way things work in particular technical or vocational areas of study;
- practical applications of theory and the development of problem-solving thinking skills in particular areas of study; and
- students' learning histories.

Qualitative information on lecturers' and students' perceptions and experiences pertaining to each of these concerns is drawn from the discussions in the interviews and provided below.

Foundational knowledge, language and 'academic' literacy

Common concerns expressed by lecturers and students are that students lack background knowledge and foundational understanding needed for particular technical subject areas, including numerical skills. A concern is that students cannot speak English well enough, or they can speak 'everyday English' but have difficulty using it to talk about the way things work in particular technical areas. Students can read but struggle i) to make sense of and interpret academic or technical texts written in English; ii) to write extended texts or whole paragraphs in English; and iii) to make sense of and interpret technical diagrams, drawings and representations such as models, tables, graphs and charts, etc.

The issues of language, foundational knowledge and 'academic' literacy were raised in all the interviews. Lecturers said they believe that most problems experienced including 'language difficulties' were symptoms of 'a deeper underlying problem', that of students' 'poor education foundation'. The view is that students are 'not well-prepared by the schooling system'. At college level, they are required to understand and apply mathematical and scientific principles and they generally do not have 'a strong enough foundation'. A view expressed is that many students continue to struggle with this poor foundation throughout their studies without ever really being 'given an opportunity to "catch-up"'. Lack of, or (inappropriate or inadequate, entrance assessment and student placement tests to gauge whether students have adequate levels of English language competence and foundational subject knowledge is seen as a related issue. Lecturers felt that the 'entry level' requirements for certain subjects or courses are 'too low'.

Lecturers observed that students are entering college with 'weak reading and writing skills'. Because of the low levels of reading and writing of both first and second language students, some lecturers believe that the onus is on them to mediate content and concepts directly via visual or non-linguistic representations such as diagrams. Yet when it comes to the examinations, students experience problems understanding questions, reading instructions and writing answers, particularly questions that required them 'to write descriptions and explanations'. An Office Practice lecturer reported that many students' responses in examination scripts comprised 'individual words' rather than 'complete sentences'.

Lecturers reported that Business Studies students find subjects such as Market Research N6 and Sales Management N5 difficult because they are 'language-dependent'. For example, in N5 Sales Management, students are required to answer in full sentences and write whole paragraphs. Lecturers said that students have 'difficulty expressing themselves in English' and 'often lack subject specific vocabulary' experiencing particular difficulty 'using technical English/Afrikaans'. They reported that Engineering students have difficulty with subjects such as Physics and Engineering Drawing, where they are required to 'visualise', and 'think abstractly' and 'three dimensionally' and 'need additional technical drawing practice'.

At some colleges, lecturers said the use of Afrikaans as the medium of instruction in some classes is seen as disadvantageous to African students who are 'expected to learn in two second languages'. African students on such campuses said they had a problem with the use of Afrikaans in lessons and 'other college presentations'. Whilst an Applied Accounting lecturer acknowledged a need for 'glossaries of key terms in the African language of the region', an Engineering Drawing lecturer said 'there was little point as the terminology is in English, the examinations are in English, and English is used in the workplace'. On the other hand, some lecturers noted that 'multi-lingual support materials in African languages are not viable since equivalent terms for specialist technical language or concepts are not available'.

Lecturers also said that students find mathematical or accountancy-based subjects, indeed 'any subject that requires any sort of calculation', more difficult because they lack the underlying mathematical and numeracy skills. Lecturers find that 'many students are coming into college apparently innumerate' and 'unable to use a calculator properly', and 'subjects such as Accountancy require mathematical accuracy'. The view was expressed that Business Studies students are 'more comfortable' with 'content subjects' that require 'different reading and learning skills' from 'skills for reading mathematical texts' and 'for learning subjects which require understanding and application' as opposed to subjects which require 'reading content-based text and learning content'. A further observation is that many students have developed 'negative attitudes to mathematics' during their prior years of schooling and 'more mature' students often lack confidence because they have been 'out of the loop for sometime and find it difficult to keep up'. Engineering staff said that students have 'even more problems with science than maths' because foundational knowledge in this area is 'even weaker' and 'requires much deeper levels of thinking and insight'.

Lecturers observed that, in certain subjects, students only encounter difficulties when they reach higher levels of college study rather than at lower levels because 'some subjects suddenly become much more cognitively challenging' and students 'are getting too little grounding in theory' at lower levels of college study. For example, a lecturer pointed out that at N6 level, the focus of Industrial Electronics curriculum is supposed to be on calculations and drawing, but instead lectures find they have to spend time developing key concepts and theoretical underpinnings that should have been developed earlier on. On the other hand, staff at one college observed that, particularly in the study field of Business Studies, once students managed to reach the N4 level (post-matric), they generally 'coped better' as key concepts and terms 'are well-established'.

Some lecturers expressed the view that students who register for college programmes such as Engineering do so because they are 'not academically inclined', have performed poorly at school and want to 'work with their hands'. However, subjects such as Engineering are

mainly 'taught theoretically' at college level and courses include no compulsory practical components, whilst other subjects are simply 'too content heavy'. A counter-view was expressed by a student who argued that 'college students are not all high school drop-outs'. For many students, attending an FET college is not 'a last resort', rather 'they have chosen to study vocational courses'. A member of staff similarly stated that 'the influx of slightly older African students' who have been disadvantaged by poor schooling meant that the 'old image of practical education for students who are not academically inclined no longer applies to the majority of college students'. The system no longer caters mainly to 'failures from general education'. Rather, students perform poorly because of poor schooling, and it is therefore imperative that vocational education not become a 'watered down' form of general education.

Theory-practice relationship and problem-solving thinking skills

A common concern expressed by both students and lecturers is that students, especially those who have not 'come from technical high schools', have difficulty when they have to apply theoretical knowledge in practical situations and with solving less procedural or unfamiliar problems independently. Lack of access to resources that allow lecturers to provide students with opportunities to apply theoretical or classroom knowledge in practical situations, for example resources that allow for simulations, or in real workplace situations, are considered barriers.

A view expressed by some lecturers is that 'too many students have studied Biblical Studies and History as content-subjects at school', and that if 'more students took subjects such as mathematics' at school, they would 'have a better idea about how to apply knowledge'. Business Studies lecturers said that students experience problems when they have to deal with case studies in the examinations as opposed to 'content'. Lecturers said they find that students 'can manage to learn information', but they struggle to apply what they have learnt in the exams or tests, 'even in open-textbook tests'. Lecturers also commented that textbooks often only provide students with 'a very limited number of case studies' so that 'additional case study examples' have to be sourced, for example, by 'referring to old exam papers'. It was also noted that some 'everyday' terms used in case studies and examinations are unfamiliar to students – for example in one exam the term 'elevator' was used but students were only familiar with the word 'lift'. Thus, a related problem to the difficulties students experience with case studies is their 'poor general knowledge' and general 'lack of technical awareness'.

Some lecturers find that certain subjects are 'conceptually foreign' to students, not only because they have not studied them previously, but also because of the limitations of their prior knowledge, life experience or lack of exposure to the 'outside world'. For example, students tend to have no experience of personal budgeting or banking ('even how to use an ATM' and 'some do not even know what a cheque is'). One lecturer observed that, the

Marketing course included 'international marketing', yet most of her students 'had never been out of the town where they were born'. Another lecturer noted that some Engineering students came to college with no concept of a 'gear' as they 'had never seen machines with cogs'.

Students expressed the view that colleges are 'too much like school' in that, in class, students 'just read textbooks and learn a bunch of facts without gaining deeper understanding or knowledge of practical applications'. They felt that certain subjects were 'exclusively textbook-based' with 'no meaningful explanations or practical examples provided'. They expressed a strong need for more 'practical exposure', arguing that 'successful students get the chance to practice what they are learning in the real world'. One group of students pointed out that 'students are reaching level N5 and N6 and have never been taken into the workplace situation'. Their plea was for 'practical exposure to really understand what we are studying'. A lecturer expressed the view that the 'old system' where Engineering students attended a three month workshop before the theory worked better'.

Students and lecturers both attributed the lack of opportunities for practical application of theory and practical demonstrations in the classroom to outdated equipment and inadequate resources, workshops, simulation and computer facilities, and laboratories available on campus. As one student put it: 'I think we should at least get some practical (exposure) because sometimes the lecturer can explain a capacitor... only to find I don't even have a clue of what he's talking about'. Office Practice students argued that it is 'difficult to understand how an office works when one only has a textbook'. Lecturers also commented on the lack of 'formal linkages and partnerships with business enterprises or industrial concerns to facilitate greater practical and workplace experience'.

Time for practical applications of theory was raised as an issue in the lecturer and student interviews. Lecturers pointed out that the NIC/NSC 'route to Grade 12 enables students to go from Grade 9 straight to Grade 11'. They 'thus miss a year when they cannot really afford to', especially when they have 'failed or dropped out at school'. Lecturers stressed that some courses are very demanding as 'the syllabus covers in one year what school students are expected to cover in three years'. Engineering lecturers, in particular, felt that, because they have to 'cram a lot into a short space of time', 'there is simply not enough time for practise and practical application in class time'. One lecturer explained that, although a semester is eleven weeks, teaching at the beginning of year does not start until enrolments are completed, reducing the time available to nine weeks. A scheduled test every Friday takes up another nine days, further reducing the time available to seven weeks. A final 'test week' means that only six weeks of teaching time are available.

An argument was made that students are not given opportunities to apply what they have learnt because of lack of time, facilities, and because this is not necessarily 'part of the curriculum'. Besides having 'very little time for practice in class', lecturers reported that 'students generally do not do any work at home'. They find that they cannot expect students to do homework because many of them lacked facilities for this at home, or are 'too lazy' and lack self-motivation. At one college, lecturers reported that, because students at the college have to travel far to and from colleges, they do not have enough time to work or study at home.

Students similarly expressed the view that three month courses are 'too short a time to learn'. As a result, 'the pace is too fast and some parts of the curriculum are barely covered because there is simply not enough time'. A suggestion was made by students that colleges could 'cut into holidays' to extend the time available. Students also reported that some students' living conditions are not at all conducive to working at home.

Students' learning histories

A theme that emerged from discussions with lecturers is that, because of their prior school learning experiences, student 'success' is constrained by an attitude to learning that 'tends to be passive'. One view expressed is that students are accustomed to being 'spoon-fed' at school and 'don't ask for help if they do not understand'. Students similarly commented on the fact that students 'do not ask questions when they do not understand' but did not offer any explanation for this. On the other hand, some lecturers made the observation that students find the transition from 'OBE group work prevalent in general schooling' difficult. They struggle to concentrate on 'listening to a lecture' and to complete tasks individually rather than as a group.

Additional areas identified as requiring support in the FET context

Concerns expressed in the interviews which differ from areas identified as requiring support in the external research focus are:

- student absenteeism;
- lecturer knowledge and workplace experience;
- curriculum and examination alignment and coherence; and
- availability of textbooks, equipment and study resources for students.

Student absenteeism

Student absenteeism from their classes was identified as a common concern in both sets of interviews. Seventy per cent of the students and fifty-nine per cent of the lecturers agreed that this is a problem. Lecturers and students were also asked to consider factors that contributed to student absenteeism and that therefore require support. Table 5.7 shows the percentage of students and lecturers who agreed that each of the following factors contributed to student absenteeism in class.

Table 5.7: Factors perceived as contributing to student absenteeism

	% student	% lecturers
Lack of motivation	64	78
Financial difficulties	60	53
Cost of transport	58	44
Family problems	56	47
Lack of transport	52	41
Health problems	46	28
Emotional problems/stress	38	28

Data indicate that 'lack of motivation' is the factor most commonly identified by lecturers and students as contributing to student absenteeism. A lecturer pointed out that, under the 'old' apprentice system, there had been pressure from employers on students to achieve and pass in order to keep their jobs. This had served to motivate students. Lecturers felt that students are 'less motivated now-a-days' because employment opportunities are lacking and their achievement is 'not tied to their employment prospects'. Lecturers commented again on the lack of 'significant levels of formal linkages or partnerships' with business enterprises or industrial concerns to facilitate the placement of students. Students similarly expressed the view that 'to be successful, you need to know that you will get a job' and that colleges should be playing a greater role in creating job opportunities. A comment made was that 'students lack motivation because they doubt they will be offered work after finishing their studies'.

Students further attribute lack of effort and 'general slackness' amongst students to the fact that students are often pressurised by their families to get some sort of qualification and register for courses that have little appeal and hold no interest for them, or simply choose courses without realising what is involved. A comment was that 'students don't know why they are coming to college'. Some students would rather go to university but money is not available for this or 'for them to study what they really want to study' and they come to the college 'because it is cheaper'. Poor career guidance and insufficient or inadequate assistance with programme and course selection is seen as a critical factor here. Lecturers agreed that there are students who attend college only to appease their parents or families.

At one college, it was pointed out that some Engineering students register because this 'enables them to play rugby'. A lecturer observed that 'student attendance at lessons had improved since the campus management had begun to contact parents when a student had missed a few lessons'.

On the other hand, students were also of the opinion that there are students who are 'simply lazy' and 'lack self-motivation'. The view expressed was that successful students are the ones who put in high levels of effort to 'catch up fast', always attend class, pay attention and ask questions in class, work and study hard, practice often and do their homework, and are interested in what they are studying. Students pointed out the absenteeism increases after 10h30, as well as in the afternoons, and at the end of the week on Fridays. Other students observed that students 'visit their friends during class time', or they arrive late for classes and 'linger outside' rather than coming straight to class. The claim was made that there is peer pressure on students not to work but 'to mess around'. Some lecturers expressed the view that some students are simply 'too immature to cope with the freedom they get at college' compared to school. A lecturer expressed the need for colleges to introduce 'duly performed' certificates for entrance to examinations based on students' attendance and regular submission of work.

Other factors cited by students and lecturers as reasons for student absenteeism, besides those listed above, include alcohol and drug abuse. A factor cited by students which pertains to 'financial difficulties' is the scarcity and expense of student accommodation at some college campuses. Students reported that, as a result, many students have to travel long distances on a daily basis. Students felt that such students needed to be encouraged to work harder at college during 'school-time', and that libraries and study rooms are required on campus so that they can study during free periods or breaks. Students observed that some students simply stay away from classes because they do not like the lecturer's teaching styles or find them 'boring'. One group of students argued that 'what students need' to motivate them, are lecturers with strong personalities, who are 'strict disciplinarians' and who encourage high levels of effort. Lecturers expressed the opinion that some lecturers themselves are de-motivated and 'not that interested' and that this 'allows students to be lazy'. This was attributed to some extent to 'ongoing job insecurity' and the fact that some staff had been in temporary posts for five or six years. In some cases lecturers are simply 'overstretched'.

Lecturer knowledge and workplace experience

A number of the lecturers interviewed said they had replaced lecturers whose students achieved poor results the previous year. Limitations in some lecturers' own subject knowledge was cited as a contributing factor to high rates of failure. Lecturers believed that such lecturers tend to leave out the topics that they do not feel confident about teaching, and consequently students do not cover the entire curriculum. Lecturers also pointed out that,

whilst on the one hand appointees with a trade and industry background and experience do not always have formal teaching qualifications and do not know about theories of learning and teaching methods, other staff have no 'workplace experience' in the technical areas they teach.

Curriculum and examination alignment and coherence

Some lecturers attributed the difficulties that students experience to 'big gaps' between different levels of syllabi. For example, a lecturer said that at the N2 level in Engineering Drawing there is a 'huge leap' between the demands of the N1 and N2 syllabus. An additional 'curriculum problem' articulated by lecturers is that 'some topics in the curriculum are outdated'. For example, a Business Practice lecturer commented on the 'outdated syllabi'.

Lecturers also identified 'poorly conceived and worded examination papers' as an area of concern related to student 'success'. This makes it difficult for students to understand what is required. A further issue raised is that, because examiners are not allowed to repeat questions, the nature of some subjects is such that examination questions become contrived, obscure and irrelevant. The textbook also plays a role here. Lecturers reported that 'examiners in some subjects use their own jargon and symbols' so that students 'who have not used the textbook written by the examiner' are disadvantaged. 'New textbooks have to be ordered simply because the examiner has changed'. A difficulty reported is that some textbooks or workbooks do not 'match what is examined'. (In an interview with college leadership, staff pointed out that lecturers should rather rely on the syllabi and use the textbook as a guide.)

Availability of textbooks, equipment and study resources for students

Lecturers and students said that student 'success' on many campuses is constrained by the lack of libraries, resource centres, after-hour access to computers with INet connections and study centres. Some lecturers said 'late arrival of textbooks' due to the 'unreliability of bookshops and publishers' and the absence of a library of required and additional materials was a barrier to student 'success'. They reported that some students spend the money their parents have given them for textbooks and other equipment 'on other things'. Students who do not have their own textbooks or other equipment, for example, instruments for Engineering Drawing, tend to 'fall behind' rapidly as they get 'too little practice at the beginning of courses' and 'seldom catch up' because of the tight timeframes. Some lecturers suggested that the cost of textbooks and equipment should be included as part of each course fee. Students said that, in cases where colleges have systems for recovering textbooks at the end of courses for reissuing to successive groups of students, books have often been defaced by students who have underlined text and written notes in the books. They felt that colleges need to exercise better control in this regard and expressed a need for on-campus bookshops.

Mainstream classroom practices and processes for student academic support

Here the case study research questions are:

- What is the extent to which some of the classroom practices that seem to hold promise for student academic support purposes in FET are evident in classroom observations in the South African colleges?
- What mainstream teaching academic support needs are evident?

Evidence of mainstream classroom practices for student academic support

Lesson observations focused on practices and processes outlined in Chapter 4 related to:

- integrating language development with vocational educational content;
- integrating literacy development with vocational educational content;
- theoretical input followed by practical consolidation or opportunities to use theory deliberately in practical work; and
- developing thinking skills with content.

Before providing quantitative data on the above, the following are main trends evident in the lesson observations.

Integrating literacy and/or language development with vocational educational content:

- High levels of student exposure to the official language of instruction and assessment were apparent in classes. African languages were rarely or never used. None of the lecturers' proficiency in the language of instruction was rated as 'poor' or 'very poor'.
- Lecturers' instruction was interactive with a fair amount of questions and answers. Students were involved in answering questions when asked but seldom initiated questions themselves. Lecturers did not actively encourage students to interact with each other.
- Evidence of textbooks or study guides was high. There was much less evidence of lecturers getting 'high levels of student participation' in reading and interpreting textual information in textbooks. Lecturers tended to either explain work orally or use overheads, the chalkboard or real objects to elaborate and explain work from the textbook.
- There was evidence in all the lessons of students being engaged, to some extent, in reading simple texts or written representations but much less evidence of student engagement in reading more complex texts or representations. A more common

strategy observed was for students to 'underline key points' or 'highlight important information' in textbooks or handouts.

- In most lessons, students were rarely or never involved in writing extended texts or more complex symbolic representations. They were seldom required to produce texts or representations themselves. In most lessons there was no evidence of lecturers assisting students to develop strategies for independent writing.
- The most common strategy used by lecturers for developing conceptual understanding appears to be to demonstrate concepts and mediate knowledge orally and visually. Researchers reported observing some excellent examples of good expository teaching using non- and/or extra-linguistic information (such as drawings or models) to demonstrate technical terms or illustrate concepts and how they work.
- In most lessons, lecturers introduced new terms and concepts and linked these to everyday examples, language or contexts. However, few lecturers dealt with potentially conceptually misleading links by 'sorting out' differences between everyday terms or use of words in everyday contexts and the use of scientific or technical terms. There was very little evidence of bi/multi-lingual strategies involving African languages.
- In general, students were provided with few opportunities to use new technical terms or language themselves in class discussion or written work.

Theoretical input followed by practical consolidation or opportunities to use theory deliberately in practical work:

- There was evidence in most lessons of lecturers linking theoretical knowledge to practice. However, students in most lessons were provided with few opportunities to apply the theory and procedures they had learnt through individual and independent practice work. In most cases, lecturers took students collectively through the process of doing examples in class.

Developing thinking skills with content:

- There was no evidence, in most lessons, of lecturers modelling the cognitive skills for independent problem solving.
- Few opportunities were made available for students to experiment with applying what they had learnt to open-ended problems.
- Lecturers rarely modelled or assisted students to develop metacognitive processes needed for team problem solving.

What follows are detailed data on the degree to which some of the classroom practices that seem to hold promise for each of the above are evident in college classrooms.

Integrating literacy and/or language development with vocational educational content

Language use in teaching and learning

Lesson observations revealed high levels of student exposure to the official language of instruction and assessment in class. Table 5.8 shows the percentage of lessons in which the different languages were used as the medium of instruction.

Table 5.8: Lecturers' language use in observed lessons

	Exclusively	Extensively	Fairly often	Rarely	Never
English	50	44	0	0	6
Afrikaans	6	19	6	6	59
African language	0	0	3	25	72

Researcher reports showed that English was used 'exclusively' or 'extensively' by lecturers in ninety-four per cent of the observed lessons. Lecturers used Afrikaans 'exclusively', 'extensively' or 'fairly often' as the medium of instruction in thirty-four per cent of the sample of lessons. African languages were rarely or never used in all except three per cent of the observed lessons where an African language was used 'fairly often'. In one lesson the African language was used as a 'prompt' to get students to respond rather than to explain or 'translate'. Researchers reported evidence of lecturers using Afrikaans and English interchangeably for instruction in twenty-eight per cent of the observed lessons. For example, the lecturer in a lesson provided terminology in both English and Afrikaans. In another lesson, the main language of instruction was English but 'main points' were always also made in Afrikaans. Such lecturers apparently 'switched seamlessly between (English and Afrikaans) languages'.

Lecturers' language proficiency in the language of instruction

None of the lecturers' proficiency in the language of instruction was rated as 'poor' or 'very poor'. In the majority of cases, proficiency in the language of instruction was categorised as 'excellent' or 'good' with just six per cent of lecturers' English language proficiency deemed 'average'.

Lecturer-student interaction

In general, lecturers' instruction was found to be interactive with a fair amount of questions and answers. Researchers reported evidence of 'quite a lot' of interaction between the lecturer and students in just over half (fifty-six per cent) of the lessons with 'a great deal' of interaction observed in twenty-two per cent of the lessons. A common format was for lecturers to illustrate what they were teaching on the board or overhead, for example, by drawing diagrams, with students following and answering questions 'along the way'.

Qualitative data provided descriptions of lessons which started with lecturers getting students to recall what they had done in previous lesson and ensuring that they participated 'collectively' in tasks such as retrieving information from cash receipts and recording this according to the rules for cash receipt journals. One lecturer apparently ensured student participation in classroom interaction by targeting students other than those who put up their hands to answer. In another lesson, there was ongoing questioning of the students to see if they were keeping up and following what was being explained. However, in most lessons, students were involved in answering questions when asked but seldom initiated questions themselves. No or little student-lecturer interaction was observed in twenty-two per cent of the lessons. Such lessons mainly comprised 'the lecturer explaining or reading'.

In eighty-eight per cent of the observed lessons, English was used 'quite a lot', 'extensively or 'exclusively' in student-lecturer interactions. Afrikaans was used 'quite a lot', 'extensively or 'exclusively' in interactions in twenty-eight per cent of lessons. There was no or very little evidence of an African language being used except in six per cent of the lessons where it was used 'quite a lot' in interactions. A researcher reported that, in a NIC N2 Business Practice lesson, where all students were Setswana-speaking, the lecturer received little response from students when he asked questions in English 'until he asked them in Tswana'.

Student-student interaction

In general, lecturers did not encourage students to work together, ask one another questions or to explain their understanding of class work to one other. In just over half the lessons (fifty-three per cent), no student-student interaction about classwork was evident and in twenty-eight per cent of the observed lesson, only 'a little' student interaction occurred. Student interaction was evident 'fairly often' in nineteen per cent of the lessons but took the form of 'informal chatting' as opposed to structured group work. Interactions usually entailed students 'conferring with each other about what was required'.

In terms of the language used by students in peer interactions in the lessons, a general tendency for the whole sample was not really discernible although it seems that students use their mother-tongue and/or English. Also of relevance in this regard is that, in the student interviews, students were asked to report on the language used to discuss course work

outside of the classroom. This question referred specifically to students whose home language differed from the language of instruction. Table 5.9 shows details of the percentage of students who reported that the languages used most to discuss work outside of the classroom are English and an African language. This self-report data indicates that the tendency is for students to use their mother-tongue and/or English.

Table 5.9: Students' reports on language use to discuss work outside of the classroom

	% Lots	% Sometimes	% Not at all
English	44	48	8
Afrikaans	26	36	38
African language	42	30	28

Integrating literacy development with vocational educational content

Use of texts and textbooks

Evidence of textbooks or study guides appeared to be high. They were evident in ninety-four per cent of the observed lessons. In six per cent of the lessons, only the lecturer reportedly had a textbook or guide. In nineteen per cent of the lessons, less than half the students apparently had their own books/guides. In forty-four per cent of the lessons more than half of all students apparently had textbooks/ guides, and in thirty-one per cent of the observed lessons, all the students appeared to have copies of the textbook/guide. A number of lecturers' overhead presentations reportedly 'came directly from the textbook'.

However, overall, researchers' notes indicate that lecturers tend to either explain work orally or use overheads or the chalkboard to elaborate and explain work from the textbook through diagrams, graphs, mathematics symbols, real objects, etc. Thus, although students in many lessons had their textbooks open or had photocopies of pages from the textbook out on their desks, these were not always referred to and students' attention was mainly focused on the lecturer, chalkboard, overhead presentation, real objects or models used. Although lessons often focused on 'textbook examples', lecturers tended to 'interpret these step-by-step' for students, 'repeat instructions from textbooks', or 'explain the text'. In other lessons, students 'did not open their textbooks'.

Researchers commented that some lecturers' 'frequent reference to the printed study guide', tended to reinforce the perception 'that all worthwhile information was contained in this one text'. A researcher observed that students in one lesson 'seemed thrown by lecturers' lack of reference to the textbook'. Researchers also noted that, in some of the textbooks used, there is 'very little' extended text. One researcher observed that an N4 Mathematics textbook

comprised 'mostly headings with a few lines of text followed by some examples and at least a page of practice exercises and answers that did not include actual calculations'.

In seventy-two per cent of the sample of lessons observed, the textbooks were provided in English. In nine per cent they were provided in Afrikaans, and in nineteen per cent both English and Afrikaans versions were available. Some form of bilingual/dual medium texts (in Afrikaans and English but *not* an African language) was evident in twelve per cent of the lessons. This included, for example, lecturers writing terms in both languages on the chalkboard.

Student engagement in reading

There was evidence in all the lessons of students being engaged to some extent in reading simple texts or written representations such as single words (terms), phrases such as simple short instructions, numbers, notations, single sentences, organograms, drawings and diagrams. In forty-four per cent of the lessons, this happened 'fairly often' and in fifty-six per cent of the cases 'extensively'. However, students were engaged in reading more complex texts or representations 'fairly often' or 'extensively' in just under a third (thirty-one per cent) of the observed lessons. In sixty-nine per cent of the lessons students were reportedly never or 'rarely' engaged in reading extended texts or more complex written symbolic representations such as whole paragraphs, graphs, complex diagrams, etc.

Development of strategies for autonomous reading

In just over half of the lessons (fifty-three per cent), there was some evidence of lecturers assisting students to develop strategies for making sense of and interpreting texts/other written representations. The two most common approaches to this (evident in one third of the lessons) were i) asking questions about the text or representations that encourage student participation in making sense of them; and ii) getting students to use the information in texts or representation as sources of information. Researchers' notes show that lecturers tend to 'talk students through' written procedures from texts, for example, by drawing a graph of the chalkboard, or 'getting students to follow various procedures' outlined in texts, such as the process of completing an example of a stock ledger card, on the overhead or chalkboard, rather than engaging students with actual text.

Two strategies evident in one quarter (twenty-five per cent) of the lessons were: i) focusing students' attention on interpreting the relationship between texts or representation and the activities or tasks they were working on; and ii) getting them to use clues and cues or their prior knowledge to make intelligent guesses about the meaning of texts or other representations. For example, a lecturer did the latter in a lesson when students encountered the word 'fireproof' in the text. There were very low levels of evidence of strategies such as getting students to use their own words to summarise what has been read; getting students

to use titles and headings to identify main themes or ideas; getting students to skim text or representations for gist or scan for information; or of lectures using metacognitive techniques such as 'think aloud' comments designed to encourage students to begin to interrogate or ask their own questions about texts or representations when reading. A more common strategy that was observed is for students to 'underline key points' or 'highlight important information' in textbooks or handouts.

Student engagement in writing

Students did not do any writing at all in twenty-eight per cent of the lessons. The lecturer did all of the writing (on the chalkboard or overheads), whilst students 'watched and listened' without taking down diagrams or summaries provided on the board. In the seventy-two per cent lessons where they were engaged in some form of writing, students mainly wrote or copied *simple* texts such as single words, phrases or sentences or representations. In eighty-four per cent of the sample of observations, students were rarely or never involved in writing extended texts or more complex symbolic representations. (In one lesson where this took place, students were involved in 'drawing a graph to scale'.) In seventy-two per cent of the lessons, students were rarely or never required to produce or create their own texts or representations as opposed to copying down examples, or taking dictated notes or diagrams or drawings, etc.

In most lessons researchers' notes indicate that there was 'not much independent writing', 'even of students making notes from class discussions'. However, the kind of writing tasks students were involved in were generally writing practises related to or relevant to vocational training and included 'copying entries into a cash receipt journal', 'copying down technical drawings or diagrams' from the textbook, overhead or chalkboard, 'drawing up stock ledger cards and filling them in', 'drawing various types of organograms', and 'listing features and functions of parts of motor cars'.

Development of strategies for autonomous writing

Evidence of lecturers assisting students to develop strategies for producing their own written texts or technical representations was noted in only twenty-five per cent of the observed lessons. Well-rehearsed repertoires of student writing were evident in some of these lessons. For example, in one class students appeared to 'always be required to pre-read each module in preparation and to make a mind-map of key points'. During the observed lecture, students in this lesson underlined important words in the textbook whilst the lecturer explained the meaning of each of these key terms. Students were then required to summarise each paragraph in point form. They were later required to write a test covering the entire module. If they failed the test, they had to re-write it in their free periods or breaks. In a Business English N3 lesson, students had to complete 'short writing tasks' such as writing letters for homework. These were evidently 'established practices'.

The most common approaches for developing independent writing across the twenty-five per cent of lessons where this occurred, appear to be those of getting students to use information in texts or representations as sources of information for writing, producing, interpreting graphs, charts, etc. (evident in thirteen per cent of the lessons). The second most common approaches evident were i) using texts or representation as models or exemplars for the texts or representations students are working on; and ii) getting students to use their own words to rewrite or write summaries on what they had learnt or read (these were evident in only nine per cent of the lessons). Evidence of strategies such as using advanced organisers, mind-mapping and/or developing other note-taking strategies; and using schemes or outlines or completing lists or charts was very low (three per cent of the lessons).

Development of technical or conceptual language

There was evidence of lecturers explicitly introducing students to new technical terms or conceptual language in eighty-one per cent of the lessons. Researchers' notes show that in these lessons key terms (some examples of these are, 'chain/mass production', 'consumption', 'assets', 'capital liabilities', 'equity', 'radius', 'positive/negative gradient', 'budget surplus/deficit', 'revenue', 'centrifugal', 'wholesale', 'salutation', 'factoring', 'transposing', 'market analysis', 'differentials') were frequently listed on the board or overheads, or labelled on diagrams. However, reports showed that in some lessons there was no evidence of students writing down terms and their meanings for future reference. In general, those lessons described by researchers as 'not particularly conceptually challenging' and 'apparently boring' for students were those where the conceptual language or terms used were not developed or were 'already familiar' to students.

The most common strategy used by lecturers for developing conceptual understanding appears to be that of providing students with opportunities to process non- and/or extra-linguistic information (wooden models, real objects such as 'pumps', drawings – for example of split bearings or circuits, a 'stripped' engine on a chassis, etc.) that demonstrate technical terms or illustrate concepts and how they work (forty-one per cent of the lessons). For example, one lecturer used diagrams to illustrate 'friction force'. Researchers reported observing some excellent examples of the use of this strategy to demonstrate concepts and mediate knowledge orally and visually. A number of lecturers were reportedly 'particularly good' at using such approaches for illustrating and explaining how 'things work'.

There was considerably less evidence (twenty-eight per cent of the lessons) of lecturers providing students with opportunities to read and interpret textual information that elaborates on new concepts and terms particularly extended texts. Where this occurred, the tendency was for lecturers to simply read or refer students to definitions in textbooks/guides. Interestingly, there was greater evidence of lecturers using 3-D models or real objects, such as a motor, to illustrate concepts or technical terms and then comparing and linking this to diagrammatic representations, for example, on the chalkboard. In one

lesson, for example, students were required 'to visually translate 3-dimensional objects into 2-dimensional diagrams and remember a number of rules for illustrating sectioned objects'. However, in another lesson, the lecturer first followed this process but, after showing students the 'real object' and secondly diagrammatic representations, shifted the focus to the textbook by getting 'high levels of student participation' in reading and interpreting textual information.

The second most common set of strategies evident for developing understanding involved establishing students' existing schema, understandings or commonsense knowledge of the new terms (fifty-three per cent of the lessons); and focusing on meaning by explaining the meaning or reasoning underlying the terms (fifty per cent of the sample). Researchers observed that over half of the lecturers linked terms or concepts to everyday examples, language or contexts. In one lesson the lecturer 'gave a simple demonstration of the main production components and sequence by mixing glasses of orange squash from basic ingredients' to give students an idea of 'how production is broken down'. However, a weakness in this strategy is that lecturers in only sixteen per cent of the lessons dealt with potentially conceptually misleading links by 'sorting out' differences between related commonsense or everyday terms or use of words in everyday contexts and the scientific or technical terms and their use. Indeed, a researcher observed that she found a lecturer's attempts to link a technical term to other 'similar sounding' everyday words confusing. On the other hand, one lecturer started his lesson by asking students to draw a graph and soon established that the students 'drew these freehand and not to scale'. In this way, he was able to establish that the rules and reasons for doing this in more 'scientific' ways needed to be explicated.

Finally, although data show that lecturers in nineteen per cent of the lessons used forms of translation of the terms in students' primary language, this predominantly involved English and Afrikaans. There was very little evidence of bi/multi-lingual strategies involving African languages.

Students' opportunities to practise using technical terms and conceptual language

Table 5.10 shows the percentage of lesson where students were provided with opportunities to practise using new technical terms or language in class discussion or written work.

Table 5.10: Extent of classroom opportunities to practise using new terms

	% of lessons
Never	31
A little	38
Fairly often	26
Extensively	6

Data indicate that in sixty-nine per cent of the lessons students were provided with no or few opportunities to use new technical terms or language themselves in class discussion or written work. In one class where this did happen, the researcher noted that, when some students used the new terms incorrectly, students were corrected without establishing where their misconceptions lay or without any explanation as to why they were wrong.

Theoretical input followed by practical consolidation or opportunities to use theory deliberately in practical work

Demonstrations of practical applications of theory in the classroom setting

According to researchers' reports, there was evidence in seventy-two per cent of the lessons of lecturers providing examples of a variety of practical situations where the 'rules' and procedures apply. In other words, in almost two thirds of the lessons, there was evidence of theoretical knowledge being linked to practice. There was evidence in some of these lessons of lecturers explaining principles ('knowing why') underlying procedures ('knowing how') or of lecturers illustrating or demonstrating how new knowledge or concepts become principles that can be generalised and applied across a range of practical contexts. For example, a researcher reported that: 'While the lecturer was showing students how to complete the stock card, she reminded them why what she was doing is actually necessary in a factory situation'. However, this was not the case in other lessons, for example, one researcher reported that: 'Students had an idea that they needed to know the equation for a straight line and how to apply the formula but did not get a sense of why this was useful knowledge'. Another researcher observed that, in some lessons, 'learning and teaching' appeared to be 'orientated to passing examinations but not to students' future work practices' and that much depends on the kind of exam questions lecturers expect.

Students' opportunities to practise applying theory in the classroom setting

Students were provided with some opportunities to apply their newly acquired knowledge in half (fifty per cent) of the lessons observed. In lessons where this was evident, it occurred 'a little' in sixteen per cent of the lessons and 'a great deal' or 'quite a lot' in just over a third (thirty-four per cent) of lessons. For example, in an Applied Accounting lesson the pattern seemed to be for the lecturer to first complete an example (in this case a cash receipt journal) on the overhead asking the students to 'guide' her. Students were then required to practise following the procedures on their own. When they had finished, the lecturer worked on the next receipt collaboratively with the class, prompting them to direct her and then got the class to complete an example on their own. In another lesson, after the lecturers' demonstration, students completed exercises independently and, 'before the end of the lesson', the lecturer called each student to her desk to go through the exercises 'on a one to one basis'. In an Engineering Drawing class, students each completed drawings 'with

different dimensions'. The task required 'understanding what they were doing, a reasonably high level of eye-hand co-ordination and fine motor control'.

However, the data shows that in sixty-six per cent of the lessons, students themselves were provided with 'no' or 'very little' opportunity to practise applying the theory and procedures they had learnt. In most cases, 'application exercises' took the form of lecturers taking students 'collectively through the process of doing examples' in class. Although such lessons were usually 'very demanding for students in respect of watching and listening' and following demonstration on 'how things work', it seems that students are not being provided with enough opportunities to engage in individual and independent practice work in class (or in homework). A researcher noted the 'rapid pace' and 'relentless drive to cover all the material' in a lesson where only 'a minority of students appeared to be keeping up with the pace'.

It seems that the trend is for students to work through procedures as a class with the lecturer leading them through the process rather than for students to work on an individual basis. This appears to be the most commonly employed strategy for assisting students to 'gain mastery and understanding of technical procedures'. Evidence is, however, that in more than half of the lessons observed, such teacher-centered methods were not alternated with more independent methods. On the other hand, in some lessons where students were required to work on their own, progress was reportedly very slow. This could explain why some lecturers prefer and find it more efficient to cover examples and exercises collectively in class. A further observation made by researchers is that, whilst some students were able to work very effectively independently, others 'appeared to be completely lost' or simply 'copied from other students' work'.

Developing thinking skills with content

Lecturer modelling of thinking skills

In fifty-nine per cent of the lessons, there was no reported evidence of lecturers modelling the cognitive skills that students need to develop in order to solve novel problems independently such as hypothesising, estimating, comparing, exploring patterns and discovering connections. For example, by using 'think alouds' and by asking: 'If...then' questions or 'what happens if...'. In just ten per cent of the lessons this occurred 'a little'. It seems that in sixty-nine per cent of the lessons there was not much evidence of lecturers assisting students to develop strategies that help them solve different types of problems. In just under a third (thirty-one per cent) of the lessons this occurred 'quite a lot'. For example, in one lesson different formats for faxes, memos and telephone messages were compared for differences and similarities.

Independent problem solving

As noted, the reported tendency is for lecturers to 'work deductively using question and answer techniques to draw responses from students about standard procedures'. Such procedural teaching and learning is indeed an enormously important aspect of vocational learning. As one researcher observed, 'the ability to follow set procedures with a high degree of precision and efficiency is highly valued in many FET subjects'. Such 'mastery' is vital if students are to 'show initiative and experiment' with solving novel problems independently. However, as noted in Chapter 1, colleges are increasingly expected to be responsive to the need for a knowledgeable and 'thinking' workforce capable of higher order problem solving and decision making. Thus, arguably also of interest is the extent to which students are provided with open-ended tasks that stimulate thinking skills.

In eighty-eight per cent of the lessons observed, students were reportedly provided with no opportunities to make judgements, grapple with and solve novel problems independently of the lecturer. Few opportunities are apparently being made available for students to experiment with applying what they have learnt to open-ended problems. There was evidence of this happening 'fairly often' in just six per cent of the lessons, and 'a little' in six per cent of the lessons.

In eight per cent of those lessons where students were provided with higher order thinking and problem-solving opportunities, lecturers showed a tendency to 'routinise' tasks by providing too much direction and ongoing procedural advice making students follow step-by-step instructions so that 'problem solving' became a demonstration. In four per cent of the lessons, lecturers monitored students to ensure that their efforts were heading in the right direction without 'over-directing', for example by suggesting, 'If I were you, I would think about...'. There was no reported evidence in any lessons of tasks being broken up into a series of smaller tasks where each stage of problem solving is progressively more complex or challenging. Indeed, researchers reported that instructions were sometimes difficult to follow because tasks were 'not broken up' into manageable pieces.

In ninety-five per cent of the lessons, lecturers never or rarely modelled or assisted students to develop metacognitive skills and processes needed for team problem solving such as how to clarify and justify their thinking, how to evaluate each other's approaches, for example, through questions calling for reasons for support for their ideas or responses. Modelling and assistance with this was evident 'fairly often' in five per cent of lessons.

In the conclusion, some of the mainstream academic support needs made apparent through these lesson observations are identified.

CONCLUSION - MAINSTREAM TEACHING ACADEMIC SUPPORT NEEDS

Whilst one certainly does not want to detract attention from the dimension of vocational education that emphasises the systematic following of rules and procedures and from the teaching of discipline or occupational knowledge, evidence is that there is scope for FET lecturers to become much more aware of strategies for integrating language and/or literacy development with vocational educational content and associated ideas or understandings such as:

- distinctions between basic interpersonal communication skills requiring a communicative approach and cognitive academic language proficiency requiring a cognitive approach and the need for students to gain access to 'discourse communities';
- the literacy and language demands of the subjects they are teaching, the texts used and the tasks, assignments and assessment set;
- the importance of their interactions with students in generating student-initiated questions and developing conceptual understanding and mastery in the use of conceptual language and key terms (including the use of bi/multi-lingual teaching strategies and translation);
- strategies for developing conceptual and technical language, particularly in an additional language, and for dealing with potentially conceptually misleading links;
- maximising students' opportunities for oral and written language development and participation;
- generating higher levels of learner participation in interpreting textual information and reading and writing in class;
- ways in which they can assist students in developing critical reading skills and expose them to a wide variety of strategies for making sense of and interpreting textual information, specifically extended texts and more complex scientific or technical representations;
- the importance of providing students with opportunities to read and interpret complex textual information independently;
- a wider variety of strategies for assisting students in developing autonomous writing skills; and
- the importance of providing opportunities for students to produce texts or representation themselves, for example, through independent writing tasks and note taking.

With respect to theoretical input followed by practical consolidation or opportunities to use theory deliberately in practical work (refer to Chapter 4), there is scope for vocational educators to become more aware of:

- teaching theoretical knowledge which requires understanding of underlying principles ('knowing why') as well as procedural knowledge which requires 'knowing how';
- deploying a mixed pedagogy where teacher-centered methods are alternated with more independent methods; and
- providing adequate opportunities for independent, individual practice work.

There is also scope for vocational educators to become more aware of strategies for developing thinking skills with content knowledge (refer to Chapter 4) and:

- consciously modelling thinking skills such as classifying, hypothesising, comparing, etc.;
- deploying a mixed pedagogy which includes open-ended tasks to stimulate problem-solving thinking skills;
- deploying a cognitive or thinking skills framework as a resource for extending teaching and learning repertoires so that tuition goes beyond factual recall and procedural knowledge and students are engaged with content at different levels of cognitive demand;
- how best to structure and design 'staged' problem-solving tasks, that provide clear guidance as to what is expected and include specific assessment criteria; and
- the 'judicious' and appropriate use of team-based problem solving.

A problem, however, is the issue of time and the practicability of incorporating components of academic support into the mainstream curriculum. Chapter 6 goes on to provide case study findings on models for incorporating student academic support, the resources needed, and ideas about where responsibility for support should reside.

Chapter 6

MODELS, RESOURCES AND RESPONSIBILITIES

INTRODUCTION

This chapter discusses the case study findings related to student academic support models. Findings are presented in relation to the research questions outlined in Chapter 1. These are:

- What models for academic support are perceived by college leadership at the case study colleges as viable for addressing obstacles to student 'success'? Which features or dimensions of these models already exist?
- What alternative models emerge or are proposed?
- What support and resources are needed to offer the kind of support required?
- Where should responsibility for the various academic support needs be located within college structures?

EXISTING DIMENSIONS AND VIABILITY OF ACADEMIC SUPPORT MODELS

College leadership was asked to respond to five descriptions of the academic support models identified in Chapter 4. These are: foundational models; 'catch-up' models; 'slower stream' models; literacy 'in context' models; and 'separate' literacy models. Researchers also asked participants to describe what their college is currently doing in terms of offering academic support in 'high risk' subjects.

Overall, student academic support at the colleges does not appear to be a coherent and 'thought-out' concept. However, a number of features or dimensions of the academic support models presented in the interviews are evident. Details of these extant features or dimensions are elaborated on together with college leaderships' views on the viability of the five models presented. For clarity, the description of each model from the interview schedule is first provided.

Model 1: Foundational model

The following is a model that has been used in some 'high risk' university courses or with 'high risk' students, particularly in situations with high levels of difference between low and high performing learners.

Admission tests or other diagnostic tests are used to identify students in need of pre-course subject preparation. Such students attend a compulsory introductory course which is directly related to the mainstream course programme. The pre-session course is forward looking or 'foundational' rather than 'bridging'. It focuses on providing a 'gateway' into the mainstream course by developing the necessary subject knowledge base and conceptual or 'vocational' language for coping with the mainstream course. The course also integrates subject specific study skills. Although the foundational pre-session course is compulsory, it is not credit bearing. Such provisioning of student support may take the form of intensive 5-8 week summer programme, or it may take up to an additional year. To accommodate this 'extended time' model, such students usually complete fewer credit courses, at least in the first year.

Extant support features or dimensions

Existing academic support features or dimensions identified by college leadership linked to this Foundational model are evident.

Aptitude or placement testing

Leadership at one college reported that 'Integrated tests' are administered on enrolment so as to facilitate appropriate placement of students. Another college reported that standardised tests covering 'communication and numeracy' but 'not linked to curriculum' are used for career guidance by subject specialists who help students choose their subjects at an appropriate level. Business Studies students are tested on the HSRC's 'General Scholastic Aptitude Test', comprising four sections: language, numeracy, reasoning ability and two-dimensional spatial relations'. Engineering students are tested through 'Competency Tests: Engineering Studies' comprising six sections: memory, numeracy, verbal comprehension, engineering insight, and 2-dimensional spatial relations. A third college said all entering students write 'in-house' placement tests for Engineering and Business Studies. These are psychometric tests that have been 'adapted' by college staff and cover 'English communication and mathematical literacy'. Test results are used to provide placement advice to students, and, at one campus, placement tests are used to identify students in need of a 6 month Level 4 ABET course 'but students do not have to accept this advice'. They are thus not 'admission tests'.

Foundation courses

Leadership identified the National Certificate Orientation (NCOR) in Engineering and Business Studies, introduced by the Department of Education, and designed to address the poor readiness of many students for programmes, as existing examples of this model. An opinion expressed is that, the NCOR 'has done wonders for Engineering' as, 'before its introduction student failure rates were much higher'. One group of college leadership said that 'foundational programmes in Engineering are better at N1 Level rather than at N3 Level as students are very weak when they arrive and cannot cope with the N1 course'. A foundational course at this level 'serves to prepare students better' for subsequent levels. However, leadership at a college reported that lecturers are 'critical' of the Engineering NCOR. They have found it to be 'under-resourced in terms of materials' and 'poorly planned'. Leadership at another college said that, in their experience, 'unfortunately even the NCOR level is too high for some students', or it 'prepares students for N1', but when 'they get to N2 they start to struggle again'.

In terms of colleges' experiences of foundation courses other than NCOR, senior staff at a college reported that, in 2005, a programme had been run for a small group of ten students who 'would not have been accepted into N4 Business Studies'. The course, called, 'General Administration and Business', had covered computer skills, entrepreneurship, numeracy and communication. Placement tests re-administered after the course showed that student scores had improved and the students were able to 'get on to N4'. As yet, the college did not have information on how these students are coping in 2006. They had decided not to repeat the introductory course this year in case it emerges that the current cohort of students 'are confused by the shift from the OBE methodology of the foundation course' to the approach in N4.

Another group of college leadership reported that accredited subject-based 'bridging' courses had been offered to students at their college in 2003. However, these were not compulsory and student demand had been low. In 2004, they had offered 'introductory foundational courses' instead, but these were discontinued as 'too many students had failed'. Possible reasons for this lack of success, however, were that 'staff-members were over-stretched at the time due to a moratorium on appointments and internal redeployment of personnel to other campuses'. 'Student resistance' to non-credit bearing courses was also cited as a factor. Leadership at one college said that a foundation class in mathematics and drawing used to be offered to Engineering students, but 'this had been dropped in favour of ABET'.

Perceived constraints and viability of the foundation model

A main constraint communicated is that the foundational model 'cannot easily be accommodated in terms of current trimester time-frames governing provisioning of NATED

programmes'. NATED programmes operate according to 'a strict timetable which fits into national exams' and foundation courses would 'throw out the time allocated to each course'. Timeframes of most courses are 'extremely tight' with 'little or no time for add-ons'. Other constraints identified besides time are 'acute staff shortages' and the 'corporate culture' or 'business model for running colleges', as well as financing of the programmes. Colleges would 'need additional staff to teach foundational courses' and 'the funds to hire them'. Whilst this was 'possible for NCOR as colleges are provided with staff who can be deployed to teach the NCOR', 'state buy-in' would be necessary for other foundational programmes. A view is that 'whilst student fees for foundational courses could be one way of generating funds, this, and the extra time required, could make the college route a less attractive option for students'.

Nevertheless, interviewees believe there is merit and value in the model for 'certain subjects'. Some senior staff felt that a foundation model 'needs to become an integral part of programmes' and should not be seen as 'something separate' as this would 'increase staff and student buy-in'. One group considered the foundational model important for students moving from GET to FET 'because vocational FET is often regarded as a soft option'. The view expressed is that the model is 'appropriate for addressing the issue of fundamentals in terms of subject knowledge (mathematical literacy in particular), language as well as study skills, in particular, methods for organising information in high factual content subjects such as Office Practice'. One suggestion is that 'the model be incorporated into new syllabi'.

Further suggestions are that 'a special emphasis is needed on developing foundational mathematics skills for Business Studies subjects such as Applied Accountancy and Cost Accountancy and for Engineering subjects which require basic as well as fairly advanced mathematical skills'. Leadership at one college expressed the view that 'accountancy-based foundation courses in Business Management, as opposed to the Financial Management stream where students do have a maths and accountancy foundation, would be extremely useful'. The model is regarded as 'ideally suited' for supporting students on learnerships where 'time is more flexible' and programmes 'can be stretched to accommodate additional components'.

It was acknowledged that an important dimension of this model is the provision of effective vocational guidance and reliable placement and diagnostic testing on admission. The view was expressed that 'some of the problems experienced could be avoided if students could be placed at the correct level in the correct courses in the first place'. However, some college leadership observed that, in terms of the FET Act, unlike universities and universities of technology, FET colleges are 'not allowed to turn students away'. 'Colleges have to accept school certificates as entrance to courses even if students do not perform well in placement tests'.

Essentially the view is that this model's viability depends on:

- foundational programmes being compulsory and non-negotiable for students identified as in need of such support;
- appropriate admission tests;
- the appointment of specialist educators who have the requisite programme and curriculum knowledge and teaching skills;
- adequate or additional classroom space and resources;
- 'state buy-in' in terms of budgets; and
- an 'adequate budget for research, monitoring and development'.

Model 2: 'Catch up' model

The following model of student support is typically used in some secondary schools for 'high risk' subjects such as mathematics and science as a means of improving the average performance of a class.

Subject departments or teachers set realistic but specific course-based targets of improving the average performance of students in the subjects (for example, improving average performance 'by 10 per cent' or 'to at least 60 per cent', etc.) Pace setters are used to plan and monitor coverage of the curriculum across the school year so that all students finish the course at the same time. Regular assessment points are also built in during the academic year. Information from tests or assessment results at each assessment point is used to diagnose when and which students are not coping or reaching the required levels for different topics or course components. Compulsory 'catch-up' sessions for these students are held, for example, on Saturdays or after school during school terms. These additional tuition sessions or tutorials are designed and targeted to revise, supplement and reinforce the course content or topics covered in class and the tests/assessment. Thus, the student support programme is synchronised or aligned with the year or curricula programme of the course so that support is 'built in' over the year of the course.

This model involves increased tuition hours that focus on reviewing work covered in class - for example, by providing expanded explanations of concepts covered, additional test and exam or practical preparation and study material. Support may also involve giving students 'a head start' on material for future classes. What is important is that the model involves on-going supplemental instruction linked to the on-going tracking of student performance and to the curriculum as it is covered across the year. Although it may be necessary for students to complete fewer courses each year to accommodate this model, it is less likely than in Model 1 and 3.

Extant support features or dimensions

Existing support features or dimensions identified as related to the 'Catch up' model are tutorials, mentoring, student initiated study groups, and regular testing and assessment.

Tutorials

Tutorial systems are seen by college leadership as 'in line with the catch-up model'. Leadership reported that more formal on-course tutorial-based programmes are sometimes in place on college campuses. Some college leadership reported that they have provided tutorials 'with varying degrees of success' to supplement some full-time programmes. On-course support in the form of tutorials is generally available for students who request help (for example, after hours on a specific day of the week) but most such support occurs on an *ad hoc* basis. For example, Engineering lecturers at one campus report that 'tutorials' are provided in the afternoons for students 'who are struggling'. Lecturers stay for one hour after class, making themselves available to students who approach them for help. Leadership observed that this type of intervention is mostly happening on an informal or unstructured basis, for example, through lecturers meeting students 'after-hours' to discuss problems. Essentially, the approach to date has been that lecturers 'do what they can in the class situation' and it has 'been up to individual lecturers' to provide extra assistance if necessary.

In reality, students do not always approach lecturers for help, even if lecturers have told them that they are willing to provide this. Lecturers have found that students do not 'make the most of this opportunity'. They attribute this to 'lack of motivation' or to the fact that some students belong to lift clubs and cannot stay after class. However, one campus reportedly has a tutorial programme involving third year students supporting first year students who are taking certain programmes such as Financial Management and have been identified as in need of support (defined as achieving less than 50 per cent). Staff said this programme generally 'works quite well' but tends to 'break down when students stop attending because they are under work pressure'. A further tendency for is for students who do not need support to attend 'in case they are missing out' whilst the students who 'really need support are less committed'. College leadership at a campus reported that a version of the 'catch up' model was in place 'to some extent' in that additional periods had been introduced in the case of 'typing', and a request had been expressed for a similar intervention for 'English'.

Mentoring

Leadership at a college reported that a mentoring system, where every lecturer mentored roughly twenty-four students over year, had been 'trialed' at one of their campuses. The idea was that each student had a fifteen minute one-on-one session with their mentor twice a term to identify personal and academic support needs. The mentor's role was largely to

inform the Student Support Unit so that the unit could ensure that referrals were made and issues addressed, for example, through counselling or extra classes from relevant lecturers. This system was found not to be effective, largely because of lack of support from students who did not attend tutorial sessions. Leadership at another college reported that they had a similar system in place, but that 'only a few students and lecturers are proactive and take the initiative in this respect'.

Student initiated study groups

Colleges reported that students at some college hostels had initiated their own study groups. At one campus, a student support officer has provided the student initiated study groups with a degree of support.

Regular testing and assessment

Systems of regular testing have been implemented in some subjects at some campuses. The idea is that this form of continuous assessment is useful for 'picking up problems sooner'. Leadership at a college reported that 'continuous monitoring of student progress and associated supplementary interventions' had been practiced 'informally' at their college in 2004. Students experiencing difficulties in particular subjects were identified through the monitoring process and 'given the option' of additional or supplementary tuition and support. One group said management had tried to promote regular testing and monitoring of student progress. Whilst there were staff who had 'complied with this', 'some lecturers are more dedicated and monitor student progress but others do not'. One college pointed out that 'catch-up' is carried out in skills programmes 'in that students redo sections of the programme until they are found to be competent'. It was noted that 'in skills programmes there are always students who are at different levels'.

Perceived constraints and viability of the 'catch-up' model

Some senior staff felt that the model is currently not viable. There are too many constraints in terms of implementation. Lecturers are 'already over-stretched' and staffing shortages mean that 'dedicated lectures are doing more than their fair share' and 'there is only so much good will'. Other staff said that, although some lecturers do stay on after hours or come in during holidays to assist students, 'these are the exceptions'. Furthermore, whilst there are 'groups of dedicated students', in general, student motivation and willingness to do 'even the most basic levels of work' is low. In addition, students on some campuses have to travel great distances and organise 'group transport'. This is cheaper, but arrives and leaves at 'set times'. If they are kept late or stay on, the taxi leaves without them and they are 'stuck' at the college as they cannot afford to take taxis at other times.

A campus manager reported that a model aimed at 'aligning student performance with national standards for all Business Studies course subjects offered' has 'by-and-large been incorporated in their current campus action plan'. They found this to be constrained by staffing shortages and administrative shortcomings. Another issue raised is that of ensuring lecturer 'buy-in' and commitment through incentives such as payment for working overtime. Leadership raised questions as to who will carry the cost of this, although leadership at one college reported that 'the system is one where lecturers are required to work a certain number of hours' and that this 'includes time for supporting individual students'. A further constraint raised is that the 'FET Act does not allow colleges to prevent students from writing examinations, irrespective of their term mark'.

Of concern is that the FET timeframes are 'very restrictive' and Engineering lecturers, in particular, struggle to test students regularly and still cover the required curriculum in ten weeks. The argument is that the ten-week trimester system in Engineering 'barely allows enough time for lecturers to cover the syllabus let alone extra time for catch-up'. Leadership at a college said that Business Studies full-time programmes allowed for more opportunities to catch-up than Engineering programmes 'as they have more time'. A further difficulty raised with regard to Engineering is that the programmes are 'so intense and difficult' for students who already find 'the workload very stressful', that increasing the workload through catch-up sessions might serve to overwhelm them. It was also noted that some programmes in the Business Studies and Utility fields are similarly 'very full'. For example, some programmes are 'thirty-five hours a week with students starting at 07h30 and finishing at 16h30, except on Fridays, leaving very little time for tutorials or catch-up sessions'.

Nonetheless, the model is perceived by college leadership as potentially having 'high value' 'if a formal structured approach' can be implemented. The suggestion is that the situation should be one where students 'whose performance is lagging' are obliged to attend catch-up classes. 'Catch-up' sessions could be built into the timetable but 'a plan would also have to be made as to what "successful" students would do during these sessions'. The advantage of the model is that 'it provides the option of completing a programme within the time allocated'. In this way it is 'suited to the current FET system bearing in mind the inflexibility of programmes with regard to timeframes and examinations'. One group thought that Model 2 could be 'applicable to specific courses' and 'should be offered on a continuous basis'. The model is also regarded as 'ideally suited' for supporting students on learnerships and skills programmes where assessment is ongoing and facilitators and assessors are 'well-positioned to identify student needs for support at critical stages'. A comment was made that 'policy needs to support the implementation of models' such as this. Leadership at one college said that, if year-long programmes, as opposed to trimester ones, were introduced, this model could be very effective.

Essentially the view is that this model's viability depends on:

- 'catch-up' programmes being compulsory and non-negotiable for students identified as in need of this;
- college programmes allowing for additional work sessions to be 'added into them';
- staff 'buy-in' and 'goodwill' and incentives, in particular in terms of 'putting in extra time' and ensuring that programmes are linked to regular assessment;
- staff and students 'coping with added pressure';
- planning that takes into account 'the tight timetable' and 'some students' complex travel arrangements'; and
- available funding to pay appropriately qualified and trained tutors or additional staff.

Model 3: 'Slower stream' model

This is *similar to Model 2* but students cover the curriculum at a slower pace over an extended period of time. In other words, they do not complete the credit bearing course in the 'standard' time. For example, they may take a year to cover a half-year course or module. Admission tests or other diagnostic tests are used to identify whether a large enough number of students at the outset are in need of more time. Additional time is used to supplement and reinforce course content or topics, review work tested, provide expanded explanations of concepts, and for tests and exam or practical preparation. Students in this 'slower stream' extended time model will probably need to complete fewer courses each year to accommodate this model.

Extant support features or dimensions

Existing support features or dimensions identified and related to the 'slower stream' model, have previously been discussed and are: aptitude or placement testing, tutorials, mentoring and student initiated study groups.

Perceived constraints and viability of the 'slower stream' model

Some college leadership said that this model (and its name) 'reminded them of the special class in school'. One view is that the model is 'not viable, as programmes would be extended and would no longer fit neatly into the national exam system'. An argument is that colleges would not cope with staffing and timetabling implications and the cost of extending programmes. Some participants viewed this 'extended time' model as particular unfeasible for trimester-based (NATED) Engineering courses. Some college leadership felt that Business

Studies courses 'are already long enough'. The Engineering head at a college argued that 'no one uses the full hour to teach' anyway so 'there is no need to extend teaching time'.

Leadership at a college reported that N2 students on one course complete two modules in six months rather than four, but anecdotal evidence is that, 'rather than make the best use of the time, students tend to relax and do less work'. At another college, leadership said they had piloted an approach where NIC/NCOR or N1 Business Studies students, for example, do two rather than four courses in their first and second semesters (six months per module x two modules at a time). Initially results had been promising, but when the pilot had 'been extended to other campuses with larger classes, it seems students had simply done less work'. A further concern expressed is that the 'sales pitches' of colleges has been that they 'offer a quicker route to matric'. If colleges extend programmes (or include compulsory foundation modules), they would 'have to change their marketing strategy'.

There was also some discussion regarding the availability and use of diagnostic or admission tests required to determine the level of students for placement in the most appropriate programme. A concern was expressed that colleges 'do not yet have standard placement tests for all subjects'. Leadership at a college observed that, although their Engineering Department uses a placement test, this 'cannot be used to force students who have legitimate school certificates to start at a lower level unless their parents or guardians agree to this'.

On the other hand, this model was seen to 'hold promise' by some college leadership, particularly when viewed against 'the current high failure rates in the six-month programmes'. Participants at a college noted that students on the 12-month NSC programme (N3 Level) generally coped better than students enrolled on the N3 semester courses. One group agreed that three of the six N3 subjects identified as 'high risk' at their college 'could possibly be offered on a twelve month basis as an option for those students who struggled to keep up'. Other participants said that students 'who can cope could do the courses over six months but the rest could be required to take one year'. One participant added that students who have no background in relation to computers, 'could certainly benefit' from an extended course. It was also said that in reality 'Engineering could do with extra time'.

Leadership at a college said that 'if trimester courses could be changed to semester courses', this 'would allow for more time' for practical sessions in Engineering. One group expressed the view that Model 3 was particularly 'relevant for younger students in school equivalent courses' (N1 and N2). Once again, learnership programmes were seen as 'eminently suited' to this model. In general, leadership agreed that 'extra time' would allow 'slower students' to do 'extra work' and 'keep up'. It would allow lecturers to spend more time on sections which students find difficult.

The view expressed is that this model's viability depends on:

- changes to the current funding model which 'discourages colleges from allowing students to take longer to complete a course';
- students taking on the extra costs;
- human resources;
- effective diagnostic and subject-based admission tests;
- eliminating the stigma attached to the notion of 'slower stream' courses;
- tight structuring so that the 'best use' is made of the 'extra time'; and
- research on the effectiveness of this approach as efforts so far 'suggest unevenness across college campuses'.

Model 4: Literacy 'in-context' model

This is a model that is being used in some FET colleges in South Africa:

Student support takes the form of a programme where expert language and literacy practitioners work with subject area specialist lecturers on using the mainstream curriculum as a vehicle for language and literacy development. Language and literacy development is thus located in the context of the subjects. Such support focuses on assisting lecturers in better understanding the relationship between language and learning and of the importance of providing students with technical concepts and language to think and communicate with. It focuses their attention on ensuring access to the technical or conceptual language specific to disciplinary or vocational area – such as, the discourse of 'language of business', 'Engineering' - and the written genres appropriate to that work.

It draws lecturers' attention to the teaching of vocabulary and terminology in relation to construct or concept development, for example, by making explicit commonalities and differences between students' everyday or commonsense notions and vocational, occupational or scientific terms and concepts. It assists lecturers in adopting teaching styles that allow learners to make use of all the linguistic resources that they bring into classrooms to facilitate conceptual and cognitive development, for example, by incorporating the use of bilingual teaching and learning resources and texts (such as computer-based and other glossaries or other forms of translation) in classes with second language students. It focuses on increasing lecturers' awareness of the literacy and language demands of their style of teaching, as well as of the texts and assessment they use. It is designed to increase lecturers' awareness of the hidden complexities in material for students whose first language is not the language of instruction. It assists them to consider the design of assessment instruments and procedures; the way students' interpret assessment tasks; and how to make tasks more manageable by 'staging'. That is, breaking them up into a series of smaller tasks with each

stage progressively more cognitively demanding. It considers the quality of formative assessment, in particular the written comments and feedback provided to students, and re-orientates lecturers to more appropriate ways of responding.

Extant support features or dimensions

Existing support features or dimensions linked to the 'literacy in context' model were identified.

Language policies

The trend in language policies at the colleges appears to be that 'the official language of instruction should be used to ensure maximum exposure and opportunity to master its use'. The use of other languages 'should not be encouraged'. It was noted that, although some college campuses have explicit language policies, 'not all lecturers appear to be aware of policies'.

Support for staff INSET

According to some participants, certain NQF Level 4 courses require lecturers to study teaching methodologies which 'include communication'. However, lecturers are often reluctant to upgrade their knowledge and skills because of 'a lack of security in their posts'. Some senior staff expressed support for lecturers being accredited for participating in programmes. One group said that their college offers staff study assistance but few staff use this opportunity. It was, however, noted that most academic support initiatives to date have targeted students rather than lecturers through staff development. It seems that the issue of dealing with lecturer quality and capacity is a 'much thornier issue', 'especially in the light of under-staffing'.

Mainstream teaching

College leadership said that, in most cases, academic support is provided as part of the mainstream curriculum teaching. However, this is not necessarily, planned, co-ordinated and structured. Rather it 'depends on individual lecturers' and 'varies depending on the individuals'. In the post-lesson interviews, mainstream lecturers were asked to describe some of the ways in which they avoid pitfalls when teaching 'high risk' subjects. The following are some of the strategies lecturers reported using:

- good lesson preparation;
- placing a strong emphasis on non-textual, non-linguistic or visual representations as a means of illustrating concepts and connecting theory with practice;

- being creative and using whatever everyday familiar examples, real objects or models are on hand (such as starters and alternators) to explain key terms, concepts, and functions;
- getting students to make 3-D models - although barriers to this are availability of time and lack of resources, facilities and material;
- regular testing with feedback loops and tracking of progress;
- selecting and using textbooks that 'deal with the content better';
- summarising chapters from textbooks;
- regular homework based on work taught in class and going through homework in class so that students realise that they need to practice and that 'this will be checked';
- only using English in class to increase English language competence;
- providing key terms;
- providing English and Afrikaans terminology;
- explaining 'almost every word';
- asking second language students to explain to others in mother-tongue;
- constant questioning in class to establish whether students are 'keeping up';
- encouraging meaningful dialogue between lecturers and students;
- providing as much individual attention as possible;
- never assuming foundational knowledge and understanding;
- identifying trends in misconceptions and dealing with these in class;
- constant revision and reinforcing of key concepts and theoretical underpinnings;
- using student appraisals of lecturers to assess how students are responding to lecturers;
- mastering the subject being taught so that lecturers are able to explain properly;
- providing students with advice on how best to tackle examinations; and
- motivating students and gaining their personal commitment to the lecturer to do the best they can.

Perceived constraints and viability of the 'literacy in context' model

Some senior college staff members held that students 'are already supported in mainstream teaching in this regard'. Other senior staff expressed the view that 'correct grammar use and spelling' are not a 'particular priority' for Engineering students. One argument made is that Engineering students need to develop competence in 'calculations' and 'drawing', and that this requires 'limited technical vocabulary' which students 'pick up without any real

difficulty' at post-N4 levels of study. A view which was also expressed is that bi- and multi-lingual teaching is neither 'relevant' nor 'helpful' to students at the FET level. A further observation made is that Engineering terminology used in learning material provided for students 'is not standardised' and 'some writers create their own symbols and terminology' which 'confuses students', and it is this that 'creates problems for them in exams'.

One response to this model is that support should 'first focus' on developing students' English language and literacy competence and that, in this respect, Model 4 is 'too limited' for the language and literacy needs of most FET students. The argument is that students need to develop 'basic oral and written language competence' before they can be taught 'technical language' and that 'a more generic approach as represented by Model 5', the 'separate' literacy model, is what is required. Some participants also expressed the view that lecturers 'should focus on teaching their subjects' and should 'not have to deal with such student support issues'. One view expressed is that 'universities have support people who deal with these matters', and colleges should similarly 'have a compulsory literacy and language model'.

A counter view was expressed by academic leadership, who felt strongly about the need for 'language to be built into all subjects'. This opinion is that developing language skills across all fields would 'go a long way to improving student performance'. The idea is that language and literacy development is necessary for concept development and, for this to occur, 'reinforcement' is necessary, particularly given the difficulties engineering students experience 'in coming to grips with theory'. It was acknowledged that 'language is only part of the problem' for Engineering students who also need to 'be able to visualise and apply information', and that this is embedded in of the notion of 'academic literacy'. It was further acknowledged that 'Engineering students do not read with understanding'. Most such staff acknowledged the importance of subject specific language and literacy development interventions to aid concept development, particularly 'for theoretical subjects' and acknowledged the possibility that 'not enough' is happening in classrooms in this regard.

Participants in one interview said they 'liked the idea' of 'the language of the subject' receiving proper attention as this was recognised as 'an area of weakness' across most NATED and some NQF courses. Entry-level Engineering theory courses were reportedly weakest with respect to lecturers 'consciously developing language and literacy'. Some leadership felt that lecturers are not using 'new terms enough, if at all' in class. Lecturers 'mostly refer students to textbooks for definitions' and are not 'familiarising students with technical terms through usage'. Factors believed to contribute to this are that lecturers are not multi-lingual and that their own English competence 'is not always as good as it should be'.

A further factor cited is that, 'too few colleges of education specialise in training lecturers for the FET college sector'. Consequently, most lecturers 'are not attuned to learning and language theories and the particular principles of VET and the teaching and learning needs of their students'. 'Those who know the subjects well do not always know how to teach, and those who know how to teach do not always know the language of the subjects as well as they should'. Support for a 'well-taught and carefully managed in-house lecturer development programme which is directly linked to programmes' was expressed.

The view is that the viability of the model depends on:

- the appointment of suitably qualified language and literacy specialists 'to lead the process';
- colleges having sufficient funds to employ and retain language experts to support lecturers;
- a considerable amount of training, time and money being invested in staff development;
- lecturers employed by the college 'being up to what would be required of them'. (A view expressed is that Engineering staff in particular are 'technical people' who are not 'language inclined'.)
- securing 'buy-in' from lecturers who would need to spend time with language experts and on planning lessons that incorporate new approaches into their teaching; and
- the extent to which increasing the focus on language and learning is seen as taking up valuable time in lessons. Staff who are required to teach in English and Afrikaans find this time consuming, and 'as it is, lecturers do not have enough time to do enough application work in class'.

Model 5: 'Separate' literacy model

Some higher education institutions offer an interfaculty language and literacy support.

This model focuses on developing students' language proficiency, communication, reading and writing skills separately from course content. Such support generally takes the form of:

- developing general communication, reading and writing skills in the language of instruction, general study skills (mind-mapping, note-taking, using titles, headings, skimming for gist, scanning, reading speed and accuracy); and

- writing centres incorporating one-on-one consultation where students are assisted with individual writing, projects or assignments. This includes pre-writing assistance, comments on drafts of essays, assignments, projects or presentations of work, and reviewing and redrafting, polishing and editing these. The focus is on developing students' awareness of writing and of making meaning explicit in writing, of presenting for an audience, of the relationship between the writer and reader and of how much explanation might be required, conventions of genres or types of writing, etc. It includes liaison with lecturers on task design or assignments.

Extant support features or dimensions

Existing support features or dimensions that are related to the 'separate literacy' model were identified.

Computer-assisted learning programmes

It was noted that aspects of this model are already in place at some sites, particularly 'the first part' of the model, albeit on a limited basis. For example, through the use of computer-assisted programmes, specifically PLATO and the Language Excellence course, as well as through the 'intensive' life skills, study skills and reading and writing skills training offered during student orientation. Staff at one campus said that student participation in PLATO had been ensured by 'making it into a subject' and 'awarding marks'. Leadership at one college reported that 'all students have a once a week, ninety minute period in the learning laboratory' on one campus. However, at other larger campuses at this college, students reportedly get 'much less exposure'. Some leadership said that 'unresolved licensing issues and software problems', unavailability of computers and a lack of full-time facilitators and staff training has meant that PLATO has not become operational on a sustained basis at a number of sites. One college reported that PLATO had been installed at the most rural and remote campus where it was needed, but when there were technical problems, technicians had to travel three hundred kilometres. Student attendance was also cited as a problem.

In some cases, college staff is positive about the impact of PLATO, but clearly the 'PLATO experience' has not been a positive one at all college campuses. One group commented that, when students start PLATO 'they love it' and, 'according to the programme, their reading ages do improve'. The problem experienced with such 'sets of software' is that 'students rapidly outgrow them', so that, after six months to a year, depending on progress, 'boredom tends to set in'. 'Additional more advanced levels' are then required but these 'are expensive' and campuses cannot afford to purchase higher levels of software'. Participants also said that much depends on the facilitator's skills and ability to use the 'diagnostic aspects' of the programme. It was noted that colleges seem to have opted for PLATO 'because it was made available rather than as a result of careful consideration of other

options'. A programme manager was of the view 'that the contents are too general and removed from what students are doing in other subjects'.

ABET and NCOR

Leadership from a college observed that this 'separate literacy' model 'has been tried in ABET courses' and 'to a lesser extent' in their NCOR. Another college reported that they had tried to introduce a compulsory reading course for N4 students but had found that, once students established that the course did not count as a credit, they dropped out in the second half of the year even though they had paid in full for the course.

'Stand-alone' support

Most college campuses reportedly provide 'stand-alone' support such as study, reading and writing skill interventions during student orientation each year. In one case, a partnership with a nearby university provides for post-graduate psychology students to assist groups of 'at risk' college students through compulsory study methods sessions. Student Support Units also provide workshops on mind-mapping, time management and study skills for 'students who seek help with these areas or are referred by lecturers'. Off-campus leadership and other training are also sometimes provided to selected students through partnerships with, for example, companies or NGOs.

Student support officers

Some campuses have student support officers who assist with some aspects. For example, at one campus an N6 student reportedly assists the student support officer by 'running the resources centre' and 'helping with students with subject selection'.

Perceived constraints and viability of the 'separate' literacy model

Some reservations were expressed about the writing centre component of the model. A concern is that writing centre staff might 'virtually end up doing students' assignments for them as has happened at some technikons'.

However, there was generally 'strong agreement' about the need for 'generic' or 'general' English language and literacy interventions. College leadership at one college suggested using this model to 'target N3-N4 Level students'. The first part of the model was deemed 'eminently suitable' for this purpose. Another group felt that the model is 'useful for all entry-level Engineering and Business Studies students'. However, some participants expressed the view that 'the emphasis should be on basic communication' rather than 'technical' language and literacy. Senior Engineering staff at one college said that communication skills are needed across all Engineering courses and a generic model which

'deals with English language and workplace communication would be very valuable'. A view is that students 'need assistance with the transition from general education to FET, particularly with reference to teaching approaches and time frames'. The suggestion was made that model could also be used for learnerships or where learners are at ABET Level 4 rather than NQF Level 1 for example, for preparatory literacy provision, in other words, where intensive literacy learning to reach a certain threshold is indicated.

The view expressed is that this model's viability depends on:

- refinements of the existing PLATO and Learning Excellence computer-based learning programmes;
- properly trained staff to run these programmes;
- adequate facilities and computer equipment with 'after hours access';
- suitably qualified language and literacy specialists; and
- funding.

Alternative emerging or proposed models

A sixth model, which relates specifically to VET contexts and the specialisation of students' occupational identities, began to emerge through the discussions. Inputs from a number of participants suggest that what is required is a kind of 'student extension or enrichment model' which provides students with opportunities to acquire necessary background experiences and general knowledge. Such a model is based on the view that 'outside exposure' or 'simulations of various types are necessary for the vast majority of students across the NATED curriculum', and that 'this would also assist with several NQF-aligned courses'. One idea is to have simulated office, business and technical workshop environments on campus which students would visit 'to bridge the gap between the real world and courses'. A second element includes 'practical exposure to the workplace' through visits to companies, mines, workshops and businesses 'although the logistics of this would be complex'. Participants also mentioned the need for more use of role-play and audio-visual material such as educational videos for these purposes. Other avenues that could be explored are those of establishing internships; providing students with opportunities to assist with the marketing and administrative functions of colleges, for example by designing and typing forms, the preparation of files and photocopying, etc.; establishing an internal and/or community 'employment agency' or 'Girl Friday' service.

An existing support feature or dimension of this emerging model takes the form of educational excursions and field visits where students purportedly 'get some practical exposure and experience'. For example, Tourism students from one campus visit the airport

and Engineering students visit a power plant, etc. Staff at a college said they were considering using 'one of the three breaks in the year' to introduce a compulsory Engineering practical course for students before they enter N3 and before they exit the programme. Some leadership felt that, if facilities or software for creating simulations were available, 'compulsory practical components' should also be introduced in Business Studies, for example in Office Practice, so that students were provided with 'orientation for gaining practical experience' and be shown, for example 'how a fax machine works'. A further reason for this support model is that lecturers themselves often have limited workplace experience and struggle 'to relate course content to workplace practices'. Some college leadership commented that 'not enough lecturers have strong artisan backgrounds or workplace experience in subjects such as Chemical Engineering, Mechanical Engineering (especially boilermakers) and Engineering Drawing, largely because colleges cannot pay competitive salaries'.

The view is that the viability of this model would depend upon issues such as:

- the availability of simulation software and facilities and training for effective use of these;
- staff development in the use of experiential learning involving both practical and theoretical knowledge (refer to Chapter 3);
- infrastructure and equipment for practice-based experiences;
- co-ordinating practical sessions with content and theory presented in lectures;
- campus transport or vehicles; and
- budgets.

CONCLUSION – ACADEMIC SUPPORT MODELS FOR THE FET CONTEXT

The view of college leadership appears to be that, although no one 'generic' model could meet student academic support needs, all the models, including a 'student extension or enrichment model' which provides students with opportunities to acquire necessary background experiences and general knowledge, are relevant and would work in different contexts and at different levels. Indeed, a number of the features or dimensions of student academic support embedded in the models presented in the interviews are already evident on college campuses – these include: aspects of mainstream teaching; aptitude or placement testing; 'stand alone' courses; bridging course and ABET; foundation courses and NCOR; computer-assisted learning programmes; tutorials; mentoring; language policies; regular testing and assessment; student support officers; student initiated study groups; support for staff inset; and educational excursions and field visits.

An 'eclectic' approach combining features or dimensions of different models was also considered a viable approach. For example, leadership at one college reported that Office Practice was no longer a 'high risk' subject as a result of a support intervention that included bringing in 'outside' experts; changes in teaching methodology; and allocating more teaching time by increasing lessons from five to six per week. Essentially, it was agreed that 'more integrated thinking' is required 'in respect of a whole college approach'. Some groups said that the 'flexible' timeframes and features such as ongoing 'built-in' assessment procedures of learnerships and skills programmes, meant that these programmes 'have even greater potential' for accommodating intervention models.

SUPPORT AND RESOURCES NEEDED

In summary, the following support and resource needs were identified and elaborated on in the interviews with college leadership.

State support and 'buy in'

The backing of the DoE and provincial education departments is seen as essential both in terms of provision of funds to develop academic support programmes and in terms of:

- offering more flexible programmes, compulsory and credit bearing foundational programmes for students identified as in need of such support, and college programmes which allow for additional work sessions to be 'added into them';
- incentives for institutions to improve success rates and for staff support and 'buy in', in particular in terms of 'putting in extra time' and ensuring that programmes are linked to regular assessment; and
- a funding model that allows students to take longer to complete a course, or the extra costs that this might have for students.

Planning and structuring

The following are some of the issues identified:

- the necessity for a quality management system for improving institutional functioning and systems that 'support a staff development culture', high expectations and setting realistic 'improved' performance targets;
- more effective pre-course college career guidance, support and advice;

- planning that takes into account 'the tight timetables' as well as students' 'often complex' travel arrangements;
- structuring so that the best use is made of 'extra' support time; and
- identifying or developing appropriate and valid subject-based admission tests and tools for testing and placement of students.

Staffing

Human resources requirements identified include:

- the appointment of student support educators and specialist educators in language and literacy at each college to co-ordinate and oversee the development and implementation of college-wide academic support initiatives and to assist in leading support processes; and
- increases in personnel who have the requisite programme and curriculum knowledge and teaching skills including suitably trained staff for rendering student academic support; staff to design and administer admission 'tools for testing and placement of students' and to provide effective career guidance and 'pre course support and advice'; properly trained full-time facilitators to run computer-assisted programmes across all sites where this is needed; and education technology specialists.

Staff development/INSET

Suggestions are that the following are prioritised:

- subject knowledge competence;
- training in the area of academic support for academic staff;
- understanding of learning theories and the 'learning process' for those lecturers 'who have not been trained as teachers';
- English language proficiency/competence; and
- exposure for lecturers who have no or little workplace experience to business and industry.

Resources, facilities and equipment

This includes:

- the operationalisation of PLATO and all computer-assisted learning programmes on a sustained basis across all sites where this is needed;
- access to 'higher levels of' and/or refinements to the PLATO and Learning Excellence computer-based learning programmes where this is needed, as well as access to other computer-assisted programmes;
- equipment and facilities for practice-based applications or experience. For example, on-campus simulation facilities and simulation software, classrooms which are equipped for drawing; technical and language laboratories for Engineering and Business Studies on all campuses; and the upgrading of existing workshops and associated equipment;
- a well- and relevantly- stocked library, resource and study centre at each campus so that students can study, prepare assignments, do homework, conduct independent research and 'get away from only using the textbook'. This includes after-hour access to computers with INet connections, curriculum resources and current publications relevant to specialist areas for staff, and subject specialist magazines for students to promote a reading culture;
- subject specific bi/trilingual glossaries with explanations of technical terms and concepts;
- additional classroom space for support programmes, as well as study spaces where students can 'sit and work'; and
- transport or college vehicles for workplace visits, field trips, etc.

Partnerships and linkages

This entails developing stronger formal linkages and arrangements with business and industry to support work or practical experience opportunities for students.

Funding and financing

This includes financing of academic support measures with site-based as well as centralised budgets including budgets for field trips and for transport or the purchasing of vehicles.

Research and monitoring

This involves research funds and research into pass and throughput rates and the effectiveness of any academic support initiatives including the placement tests used, computer-assisted learning programmes, use of audiovisual resources and material, and workshop or workplace visits, so that colleges can establish 'whether what they are doing really works'.

RESPONSIBILITIES

Recommendations made in terms of responsibilities and structuring

The following are some of the recommendations made by various members of college leadership in the interviews in terms of responsibilities and structuring:

- academic support should be an academic matter and should i) ultimately be the responsibility of whoever is in charge of academic affairs (usually the academic vice rector or the deputy CEO); and ii) be located and implemented through academic structures;
- an appropriate model or approach for academic support needs to be decided on at this level in consultation with academic staff (which may be different for different subjects) and implemented through academic support and programme managers through campus-based academic heads and campus heads;
- there needs to be 'an integrated team approach' for establishing the deeper reasons underlying high failure rates in certain subjects;
- planning and implementation of academic support for full-time programmes at campuses and learnerships should be linked;
- the academic manager and team could drive monitoring, research and development in academic support, student development programmes and be responsible for professional support to lecturers as well as lecturer evaluation. External role-players such as DoE subject advisers as well as other 'expert practitioners' should also be involved in assisting with the development of lecturers' subject knowledge, teaching and assessment methodology as needed;
- the viability of a designated Head of Department (HoD) for high risk subjects should be considered. New subject specialists could be appointed – one for each of the new DoE programmes. The senior staff could then use each one of these specialists to mentor the programme staff and assist with a transition to year-long programmes with a different structure – that is, core subjects plus electives;

- the Student Support Unit could take responsibility for intake testing and guidance, pre-course support and advice as well as generic academic support needs with regard to study skills, the provisioning and running of the resource centres, simulation facilities and student study areas. The Linkages and Marketing divisions could be drawn on in respect of partnerships with business, programme planning with industry partners and revision of any college recruitment and admission materials;
- the Linkages Unit in liaison with the Marketing and Communications Unit would be responsible for facilitating initial contacts or linkages with business or industry. The Linkages Unit could be responsible for simulations and enterprise visits by liaising with partners and building linkages. Such links would be passed on to relevant HoDs or subject heads for action, with lecturers making actual arrangements. The SSU could maintain a database in this regard as part of student record-keeping. Marketing and Communications would play a similar role to Linkages, although this would be mainly about advertising, generating interest in the courses on offer at colleges and possible 'changes in sales pitch'; and
- the Human Resources and Finance divisions would play a role in respect of staff development needs, be involved with programme staffing and any adjustments to conditions of service.

CONCLUSION – RESOURCES AND RESPONSIBILITIES

Support and resource implications identified by college leadership

Support and resource implications identified by college leadership include:

- state and DoE support and 'buy in';
- effective planning and structuring;
- adequate and appropriate staffing;
- staff development/INSET;
- additional resources, facilities and equipment;
- improved partnerships and linkages with industry and business;
- additional funding and financing; and
- proper research and monitoring.

With regard to responsibility for the various academic support needs, the view of college management is that this should be the responsibility of the person in overall charge of academic affairs, and be located and implemented through academic structures.

Chapter 7 draws on these case study findings to construct a framework for organising academic support in the FET college sector.

PART 3: CONCLUSIONS AND RECOMMENDATIONS

Chapter 7

A FRAMEWORK FOR ORGANISING STUDENT ACADEMIC SUPPORT IN FET COLLEGES

INTRODUCTION

This chapter draws on evidence from the external and internal research to construct a framework for organising student academic support to improve student success in FET colleges. Data generated from the reviews of the South African academic development movement (Boughey 2005a) and the international FET literature (Harris 2005) and the four FET college case studies have been synthesised to answer the following questions:

- What framework could best serve for organising academic support for student 'success' at FET colleges?
- What are key recommendations or criteria for organising academic support in FET colleges?
- What are the implications and requirements for this?

A FRAMEWORK FOR STUDENT ACADEMIC SUPPORT

The following are six key criteria or recommendations for a framework:

1. Student academic support should be part of overall institutional development and planned within the context of a concern for overall institutional quality.
2. Student academic support should be theoretically grounded and not deployed in commonsense, ad hoc or 'faddish' ways.
3. Student academic support should be integrated into mainstream teaching with vocational education content knowledge.
4. No one, 'generic' model should be considered appropriate for incorporation of academic support in all study fields, subjects and at all levels.
5. Pre-course selection and placement of students should be important aspects of student academic support.

6. Student academic support interventions should be empirically-validated and tested through research.

Recommendation 1: Student academic support should be part of overall institutional development and planned within the context of a concern for overall institutional quality.

Support for learning should be built into institutional structures by putting in place quality management systems that support a staff development culture underpinned by:

- professional values;
- internal accountability;
- high expectations;
- performance improvement targets;
- enhanced curriculum delivery and teaching methodologies; and
- staff appraisal.

Academic support (planning, structuring, staffing) should be implemented through academic structures and academic heads. Support and programme managers and lecturers should work in 'an integrated team approach'. Academic support for all programmes (full-time programmes, learnerships, etc.) should be linked. 'Conventional' student support structures, such as support units, and strategies, such as foundational modules, and tutorials should be seen as resources for 'institutional development' rather than 'student development'. Student academic support also entails i) training in the area of academic support for academic staff; and ii) engaging teaching staff in ongoing development as professional educators.

Recommendation 2: Student academic support should be theoretically grounded and not deployed in commonsense, ad hoc or 'faddish' ways.

In terms of theorising and conceptualising support and development at FET colleges, the following ideas are important:

- Theories of knowledge 'transfer' (its possibility and efficacy, for example, transfer between theory and practice), types of knowledge, and types of transfer provide a general understanding of approaches to student academic support. The adoption of an approach to student support that is non-universalist in its position on knowledge transfer is recommended. This means taking a position of integrating academic

support into the mainstream curriculum, for example, teaching language within a subject domain.

- Students need to gain access to communities of practice and occupational identities which characterise both the FET colleges and the worlds of work. Some workplace learning requires acquiring more practical or technical skills, practice or know-how, whilst other occupational learning requires the acquisition of more principled knowledge and theoretical understanding (knowing why). Thus, some college subjects will have a more 'practical' knowledge base where the emphasis is on procedural understanding and 'real world' or context-embedded application tasks and problem solving. Other subjects will have a more theoretical knowledge base where the emphasis is on conceptual understanding and abstract or context-independent application tasks and problem solving.

Recommendation 3: Student academic support should be integrated into mainstream teaching with vocational education content knowledge.

Integrating components of the remit of student academic support into the mainstream curriculum involves:

- developing thinking skills with content;
- integrating literacy and language development with vocational educational content; and
- theoretical input and opportunities to apply theory in practice.

Underpinning the above is the assumption that lecturers are clearly in control of discipline or content knowledge.

Recommendation 4: No one, 'generic' model should be considered appropriate for incorporation of academic support in all study fields, subjects and at all levels.

Potential models for addressing the institutionalisation and mainstreaming of academic support include:

- Foundational models providing a 'gateway' into the mainstream course by developing the necessary subject knowledge base for coping with the mainstream course are appropriate for addressing the issue of fundamentals in terms of subject knowledge;
- 'Catch-up' models which include assessment points and compulsory 'catch-up' sessions are appropriate for students 'whose performance is lagging';

- 'Slower stream' models where students cover the curriculum at a slower pace over an extended period of time are appropriate for providing 'extra time' for lecturers to spend more time on sections which students find difficult;
- Literacy 'in context' models where language and literacy development is located in the context of the subjects are appropriate for developing subject specific language and literacy;
- 'Separate' literacy models, which focus on developing students' language proficiency, communication, reading and writing skills separately from course content but linked to vocational education, are appropriate for interfaculty language and literacy support and preparatory literacy provision, where intensive literacy learning to reach a certain threshold is indicated; and
- 'Extension or enrichment' models which provide students with opportunities to acquire necessary background or practical experience and general knowledge.

Different academic support models are appropriate in different contexts, for different subjects, and at different levels.

Recommendation 5: Student academic support interventions should be empirically-validated and tested through research.

Analysis of tracking data and cohort performance should be used to:

- monitor pass and throughput rates;
- identify high risk courses at all levels;
- research reasons for their risk factor (this includes research into reasons for low levels of student motivation and monitoring attendance and absenteeism) so as to inform programme curricula, the incorporation of additional support for learning within courses, or the building of foundation work below them;
- monitor the implementation and effectiveness of any academic support initiatives including placement tests used, computer-assisted learning programmes, use of audiovisual resources and material, and workshop or workplace visits, attendance incentives such as 'duly performed' certificates for entrance to examinations based on students' attendance and submission of work; and
- assess the impact of academic support efforts on student achievement in terms of cost per successful student.

Recommendation 6: Pre-course guidance and placement of students should be important aspects of student academic support.

- Students who have been placed in programmes of study which are conceptually or practically too demanding are unlikely to be able to benefit from them. Thus, placement should entail selecting students on the basis of alternative admissions tests and counselling them into appropriate programmes on the basis of these tests.
- Related to this issue, is the issue of ensuring that students select and are placed in courses linked to skills demand or shortages thereby increasing employment prospects. This entails programme and enrolment planning with industry and business partners that is linked to or increases students' chances of being offered jobs when they finish their studies.
- Information about students' entry-level abilities and knowledge should also be used to feed into curriculum development and teaching methodology and allow mainstream lecturers to articulate the curriculum with students' needs and address problem areas once teaching begins.

The following are four main implications or requirements for this framework:

1. Dominant constructions of what it means to offer student academic support will probably need to be challenged and shifted towards a more embracing understanding of the notion of academic support as offered through mainstream work.
2. Policy frameworks, the support and authority of the national and provincial education departments, and the ability to sustain funding systemically are crucial.
3. Professional development for mainstream teaching staff will be required.
4. Additional human and infrastructural resources will be needed.

Implication 1: Dominant constructions of what it means to offer student academic support through work 'in the mainstream' will probably need to be challenged.

There are likely to be assumptions that academic support initiatives should 'sit apart' from the mainstream teaching and learning activities of the rest of the institution. Opinions may be that 'problems' are located only in the students and can be 'cured' through separate academic support or bridging programmes. However:

- adjunct programmes for student development do not address poor teaching on the part of academics or poor course design which does not take into account students' learning histories; and
- it is often poorly designed assignments that drive students into support structures such as writing centres, when a better designed task by their lecturer might have been easier to 'decode' and execute.

Implication 2: Policy frameworks, the support and authority of the national and provincial education departments, and the ability to sustain funding systemically are essential.

For example, in terms of:

- external accountability measures and incentives for institutions to improve success rates and for lecturer 'buy-in', in particular in terms of extra time and effort, and for ensuring that programmes are linked to regular assessment;
- support for offering more responsive programmes, for example, i) the introduction of compulsory foundational programmes for students identified as at risk; and ii) extended programmes which allow for additional work sessions; and
- funds for the development of academic support programmes, to cover staffing; lecturers' INSET costs, research and monitoring, increased time-based programme costs, as well as a funding model that allows students to take longer to complete a course.

Implication 3: Professional development for mainstream teaching staff will be required.

Evidence from the FET classroom observations is that greater understanding will be required of practices and processes relevant to integrating academic support into the curriculum. In particular, in terms of:

- teaching theoretical knowledge which requires understanding of underlying principles ('knowing why') as well as procedural knowledge which requires 'knowing how';
- theory-led approaches which entail providing opportunities to use theory in independent, individual practice work (for example, opportunities to practice in class or through homework);
- teaching a second language with content, and developing students' 'academic' or 'technical' literacy; and

- integrating thinking skills with content (for example, the development of a content by cognitive challenge framework across cognate subject areas, and deploying a mixed pedagogy which includes more open-ended tasks).

Overall difficulties, however, are likely to be:

- the practicability of integrating so many components of academic support into the curriculum;
- achieving a balance so that attention to these aspects enhances rather than detracts from the teaching of specialist content or vocational education knowledge; and
- ensuring that teaching strategies are theoretically grounded so practices are not deployed in *ad hoc* and instrumental ways.

External role-players, such as Department of Education subject advisers as well as other 'expert practitioners', will also need to be involved in assisting with the development, where needed, of:

- lecturers' subject knowledge competence, in particular understanding of underlying knowledge principles and ability to engage students with principled as well as procedural knowledge;
- English language proficiency; and
- assessment methodology.

Other areas of concern raised through the internal research focus are the need for greater understanding of learning theories for those lecturers 'who have not been trained as teachers'; and exposure to business and industry for lecturers who have no or little workplace experience.

Implication 4: Additional human and infrastructural resources will be needed.

Resources will be required i) to allow staff capacity to be developed so that they can respond to students' learning needs aligned to high standards and achieving the desired outcomes; and ii) to offer students additional learning support, programmes and enrichment for learning.

Human resources requirements include:

- student support specialist educators in language and literacy and suitably trained staff for rendering student academic support;

- staff to design and administer admission tools for testing and placement of students and to provide effective career guidance and pre-course support and advice;
- properly trained full-time facilitators and education technology specialists to develop and run computer-assisted programmes across all sites where needed; and
- personnel who have the requisite programme and curriculum knowledge and teaching skills.

A cadre of professional student support staff will be needed who have the kudos and status to be able to deal with those appointed to the mainstream. However, it cannot be assumed that staff appointed to do academic support work will arrive with all the expertise needed to engage with teaching and learning-related issues at the level required.

Facilities, equipment and infrastructure for student support include:

- access to a range of computer-assisted learning programmes on a sustained basis across sites where needed;
- opportunities for practical work, and equipment and facilities for practice-based applications or experiences such as on-campus simulation facilities and software, classrooms that are equipped for drawing and technical laboratories, the upgrading of existing workshops and associated equipment; and strong formal linkages and arrangements with business and industry to support work or practical experience opportunities for students;
- well- and relevantly-stocked libraries, resource and study centres with after-hour access to computers with INet connections and curriculum resources;
- subject specific bi/trilingual glossaries or explanations of technical terms and concepts;
- adequate classroom space for support programmes;
- transport or college vehicles for workplace visits, field trips and enrichment excursions; and
- proximate hostel and/or student accommodation.

Appendix A

Table A: Percentage of lecturers who agreed with each problem statement and rank order from highest to lowest levels of agreement

No.	Problem statement	% Agreed	Rank
16	Students lack background knowledge and foundational understanding of particular technical subject areas	91	1
1	Students cannot speak English well enough	88	2
7	Students' low reading levels	88	2
8	Students can read but struggle to make sense of and interpret academic or technical texts written in English	88	2
12	Students' low levels of writing skills	88	2
13	Students struggle to write extended texts or whole paragraphs in English	88	2
19	Students have difficulty when they have to apply theoretical knowledge in practical situations	78	3
21	Lack of access to resources that allow lecturers to provide students with opportunities to apply theoretical knowledge in practical situations, for example resources that allow for simulation	78	3
5	Students can speak everyday English but have difficulty using it to talk about the way things work in particular technical areas	75	4
22	Students have difficulties with solving unpredictable or unfamiliar problems independently	69	5
18	Students' lack of numerical skills	66	6
27	Student absenteeism from their classes	59	7
9	Students struggle to make sense of and interpret technical diagrams, drawings and representations such as models, tables, graphs and charts, etc.	56	8
6	Students struggle to talk about the way things work in particular technical areas, even when they are using their home language	50	9
14	Students struggle to produce their own technical diagrams, drawings and representations, models, graphs, charts, etc.	47	10
4	Unavailability of bilingual textbooks or other support material or resources, for example, worksheets or glossaries that include forms of translation of important terms and concepts in the African language of the region	44	11
10	Lecturers do not know how to teach students 'academic' reading, that is, how to make sense of and interpret technical texts and how to make sense of and interpret technical diagrams, drawings, representations, models, tables, graphs, charts, etc.	44	11
26	Insufficient contact time available for instruction to cover the curriculum	41	12
29	Students' lack of participation in discussion and work when they are present in class	41	12
3	Lecturers' inability to use the African language of the region interchangeably with English or Afrikaans to explain work as needed	38	13
15	Lecturers lack of the 'know-how' to teach students 'academic' forms of	38	13

	writing, that is how to write technical texts and how to create technical diagrams, drawings, representations, models, tables, graphs, charts, etc.		
17	Lecturers' low levels of knowledge and expertise in the technical or subject areas they have to teach	31	14
23	Lecturers do not know how to teach students problem-solving strategies	31	14
2	Lecturers are not sufficiently proficient in the official language of instruction	28	15
11	Badly written textbooks or other support material (including poor pedagogical practices)	28	15
20	Lecturers' lack of 'know-how' to create opportunities for students to apply theoretical knowledge in practical situations	19	16
28	Lecturer absenteeism from class	16	17
25	Lecturers do not know how to assist students to develop the skills necessary to work in teams	13	18
24	Students struggle to solve problems in teams	9	19

Table B: Percentage of students who agreed with each problem statement and rank order from highest to lowest levels of agreement

No.	Problem statement	% Agreed	Rank
16	Students cannot cope with some subjects because they don't have enough background knowledge and understanding of the subjects from their previous schooling	80	1
5	Students can speak everyday English but have difficulty using English to talk about the way things work in particular technical areas or subjects	80	1
21	Students struggle to solve new or unusual problems on their own	76	2
19	Students do not know how to apply theory or classroom knowledge in practical situations	72	3
20	Lecturers do not provide students with opportunities to apply theory or classroom knowledge in real workplace situations	72	3
26	Students are often absent from class	70	4
1	Students cannot speak English well enough	64	5
18	Students lack number skills	64	6
28	Students do not all participate in discussion and work even when they are in class	62	7
4	The textbook or other reading material used in class does not include translations in the African language of the region	60	8
13	Students struggle to write long passages or whole paragraphs in English	58	9
8	Students can read in their home language but struggle to read and understand English	56	10
9	Students find it difficult to understand technical drawings and diagrams like graphs and charts	56	10
24	Lecturers do not teach students how to work as a team to solve problems	54	11
6	Students struggle to talk about the way things work in some technical areas or subjects even if they use their home language	52	12
14	Students don't know how to draw their own technical diagrams and drawings like graphs or charts	52	12
3	Lecturers are not able to speak and explain in the main African language of the region	50	13
7	Students have difficulties with reading	50	14
22	Lecturers do not teach students how to solve unusual problems on their own	48	15
23	Students do not know how to work in teams or groups to solve problems	48	15
11	The textbooks or study material used in class are not clear and confuse students	40	16
29	Lecturers do not give students enough opportunities to participate in discussing and doing work in class	34	17
10	Lecturers do not explain and help students to understand and interpret technical writing, diagrams or drawings	28	18
12	Students have difficulties with writing even in their home language	28	18

17	Lecturers don't have enough knowledge of the subjects they are teaching and are not experts in the technical areas they teach	26	19
25	The amount of time available for teaching is too little or too short	24	20
15	Lecturers do not teach students how to write technical texts like business letters or reports, or how to draw their own technical diagrams and drawings like charts or graphs	22	21
2	Lecturers' English is not good enough to teach the subjects in English	20	22
27	Lecturers are often absent from their classes	20	22

Table C: Comparison of lecturers' and students' perceptions: percentage of lecturers and students who agreed with each problem statement and ranking of problems from highest to lowest levels of agreement for both groups

Statements are ranked in order from highest to lowest levels of lecturer agreement	% Lect.	% Stud.	Lect. Rank	Stud. Rank
Students lack background knowledge and foundational understanding of particular technical subject areas	91	80	1	1
Students cannot speak English well enough	88	68	2	5
Students' low reading levels	88	50	2	14
Students can read, but struggle to make sense of and interpret academic or technical texts written in English	88	56	2	10
Students' low levels of writing skills (even in their home language)	88	28	2	18
Students struggle to write extended texts or whole paragraphs in English	88	58	2	9
Students have difficulty when they have to apply theoretical knowledge in practical situations	78	72	3	3
Lack of access to resources that allow lecturers to provide students with opportunities to apply theoretical knowledge in practical situations, for example resources that allow for simulation (lecturer interview). Lack of opportunities for students to apply theory or classroom knowledge in real workplace situations (student interview)	78	72	3	3
Students can speak everyday English but have difficulty using it to talk about the way things work in particular technical areas	75	80	4	1
Students have difficulties with solving unpredictable or unfamiliar problems independently	69	76	5	2
Students' lack of numerical skills	66	64	6	6
Student absenteeism from their classes	59	70	7	4
Students struggle to make sense of and interpret technical diagrams, drawings and representations such as models, tables, graphs and charts, etc.	56	56	8	10
Students struggle to talk about the way things work in particular technical areas even when they are using their home language	50	52	9	12
Students struggle to produce their own technical diagrams, drawings and representations, models, graphs, charts, etc.	47	52	10	12
Unavailability of bilingual textbooks or other support material or resources, for example, worksheets or glossaries that include forms of translation of important terms and concepts in the African language of the region	44	60	11	8
Lecturers do not know how to teach students 'academic' reading, that is, how to make sense of and interpret technical texts and how to make sense of and interpret technical diagrams, drawings, representations, models, tables, graphs, charts, etc.	44	28	11	18
Insufficient contact time available for instruction to cover the curriculum	41	24	12	20
Students' lack of participation in discussion and work when they are present in class	41	62	12	7
Lecturers' inability to use the African language of the region interchangeably with English or Afrikaans to explain work as needed	38	50	13	13

Lecturers' lack of the 'know-how' to teach students 'academic' forms of writing, that is how to write technical texts and how to create technical diagrams, drawings, representations, models, tables, graphs, charts, etc.	38	22	13	21
Lecturers' low levels of knowledge and expertise in the technical or subject areas they have to teach	31	26	14	19
Lecturers do not know how to teach students problem-solving strategies	31	48	14	15
Lecturers are not sufficiently proficient in the official language of instruction	28	20	15	22
Badly written textbooks or other support material (including poor pedagogical practices)	28	40	15	16
Lecturers' lack of 'know-how' to create opportunities for students to apply theoretical knowledge in practical situations	19	N/A	16	N/A
Lecturer absenteeism from class	16	20	17	22
Lecturers do not know how to assist students to develop the skills necessary to work in teams	13	54	18	11
Students struggle to solve problems in teams	9	48	19	15
Lecturers do not give students enough opportunities to participate in discussing and doing work in class	N/A	34	N/A	17

References

- Aarkrog V (2003) The coherence between practice situations and ways of transfer, Paper presented at the European Conference on Educational Research, University of Hamburg, 17-20 September <<http://www.leeds.ac.uk/educol/documents/00003416.htm>>
- African National Congress (1998) *Growth, employment and redistribution: a macroeconomic strategy*. Johannesburg: ANC
- African National Congress (1994) *The Reconstruction and Development Programme*. Johannesburg: Umanyano Publications
- Agar D & Mashishi K (1986) Student perceptions of Academic Support at Wits, *ASPECTS 7: Proceedings of the 1986 ASP Conference*, University of Natal, Pietermaritzburg 3-5 December 1986
- Allie S (1987) The physics foundation course at UCT, *ASPECTS 8: Proceedings of the 1987 ASP Conference*, Rhodes University, 2-4 December 1987
- Amos T & Quinn L (1997) Management education and training: the role of integrated language development, *South African Journal of Higher Education*, 11(1):186-191
- Angelil-Carter S (1994a) Cognitive mapping within the writing process in S Angelil-Carter, D Bond, M Paxton & L Thesen (eds) *Language in Academic Development at UCT*. Academic Development Programme, UCT: Cape Town
- Angelil-Carter S (1994b) The adjunct model of content-based language teaching, *South African Journal of Higher Education* 8(2):9-14
- Applebee AN (1984) Writing and reasoning, *Review of Educational Research* 54(4):577-596
- Badat S (2003) *Transforming South African higher education, 1990 - 2003: goals, policy initiatives and critical challenges and issues*. Pretoria: CHET Consortium B
- Badenhorst FD, Foster DH & Lea SJ (1990) Factors affecting academic performance in first year psychology at the University of Cape Town, *South African Journal of Higher Education*, 4(1):39-45
- Ballard B & Clanchy J (1988) Literacy in the university: an anthropological approach in G Taylor, B Ballard, V Beasley, HK Bock, J Clanchy &
- P Nightingale *Literacy by degrees*. Milton Keynes: SRHE & Open University Press
- Barnesley S (1992) Thoughts on the psychological processes underlying difficulties commonly experienced by African science students at university, *Proceedings of the 7th Conference of the South African Association for Academic Development*, Port Elizabeth Technikon, 3-5 December 1992

- Barton C (2003) Problem-solving and EAP: themes and issues in a collaborative teaching venture, *English for Specific Purposes*, 23(3):297-314
- Bartholomae D (1985) Re-inventing the university in M Rose (ed) *When writers can't write*. New York: Guilford Press
- Barton D & Pitt K (2003) *Adult ESOL pedagogy: a review of research, an annotated bibliography and recommendations for future research*, Literacy Research Centre, University of Lancaster, Report for National Research and Development Centre for Adult Literacy and Numeracy, Institute of Education, University of London <<http://www.nrdc.org.uk>>
- Becher T & Trowler P (2001) *Academic tribes and territories: intellectual enquiry and the cultures of disciplines*. (2nd ed) Buckingham: Open University Press/SRHE
- Beckett D (2004) Embodied competence and generic skill: the emergence of inferential understanding, *Educational Philosophy and Theory*, 36(5):497-508 (Special issue: Work-based learning; guest editors Christopher Winch & John Gingell)
- Behr AL (1987) South African universities today: perceptions for a changing society, *South African Journal of Higher Education*, 1(1):3-9
- Bernstein B (1996) *Pedagogy, symbolic control and identity: theory, research, critique*. London: Taylor & Francis
- Bertram C (2003) Students doing it for themselves: the role of informal study groups in a mixed mode teacher education programme, *South African Journal of Higher Education*, 2003(2):218-225
- Bhola H (1995) *Functional literacy, workplace literacy and technical and vocational education: interfaces and policy perspectives*. UNEVOC Studies in Technical and Vocational Education, No. 5, UNESCO (Paris): International Project on Technical and Vocational Education
- Biggs J (1988) Approaches to learning and essay writing in RR Schmech (ed) *Learning Strategies and Learning Styles*. Plenum: New York
- Biggs JB (1987) *Student approaches to learning and studying*. Victoria: Australian Council for Educational Research
- Billett S (1998) Appropriation and ontogeny: identifying compatibility between cognitive and sociocultural contributions to adult learning and development, *International Journal of Lifelong Education*, 17(1):21-34
- Bloor T & Bloor M (1995) *The functional analysis of English*. London: Edward Arnold
- Bock, HK (1988) Academic literacy: starting point or goal? in G Taylor, B Ballard, V Beasley, H K Bock, J Clanchy & P Nightingale (eds) *Literacy by degrees*. Stony Stratford: SRHE & Open University Press
- Bonanno P (2004) Metacognition within a constructivist model of learning, *Int. J. Cont. Engineering Education and Lifelong Learning*, 14(1-2):9-23

- Bond D (1992) What can a learning skills workshop tell us about educational development?, *Proceedings of the 7th Conference of the South African Association for Academic Development*, Port Elizabeth Technikon, 3-5 December 1992
- Bonnet M (1995) Teaching thinking and the sanctity of content, *Journal of Philosophy of Education*, 29(3):295-309
- Boud D (2001) Knowledge at work: issues of learning, in D Boud & N Solomon (eds) *Work-based learning: a new higher education?* Buckingham: Society for Research in Higher Education and Oxford University Press
- Boud D & Felletti G (1991) *The challenge of problem based learning*. London: Kogan Page
- Boud D & Solomon N (2001) (eds) *Work-based learning: a new higher education?* Buckingham: Society for Research in Higher Education and Oxford University Press
- Boughey C (1995) The UNIZUL writing respondent programme: an alternative to a traditional writing centre, *Proceedings of the 1995 Annual Conference of the South African Association for Academic Development*, Technikon Free State, 29 November - 1 December 1995
- Boughey C (1997) Learning to write by writing to learn: a groupwork approach, *English Language Teaching Journal*, 55(2):126-134
- Boughey C (2002) Naming students problems: an analysis of language-related discourses at a South African university, *Teaching in Higher Education*, 7(3):295-307
- Boughey C (2003) Academic development in South Africa: from social reproduction to capitalist expansion? Keynote paper at the annual conference of the South African Academic Development Association, Cape Technikon, 3-5 December 2003
- Boughey C (2005a) Lessons learned from Academic Development movement in South African Higher Education and their relevance for student support initiatives in the FET college sector. Review undertaken for the HSRC, DANIDA Student Support Unit Project, part of the Support to Education and Skills Development Programme
- Boughey C (2005b) Epistemological access to the university: an alternative perspective, *South African Journal of Higher Education* 19(3):page numbers not yet available
- Boughey C & Goodman K (1994) Writing across the curriculum: the case of biochemistry in M Walker (ed) *Curriculum development: issues and cases*. Bellville: University of the Western Cape Press
- Boughey C & van Rensburg V (1994) Writing to learn in occupational therapy in M Walker (ed) *Curriculum development: issues and cases*. Bellville: University of the Western Cape Press
- Bourdieu P (2002) Forms of capital in NW Biggart (ed) *Readings in economic sociology*. Malden, Mass.: Blackwell
- Bozalek V (1993) Finding students voices: some experiences in the Social Work department, University of the Western Cape, *Proceedings of the 1993 Annual Conference of the South African Association for Academic Development*, University of the Western Cape, 1-3 December 1993

- Bradbury J (1993) *The meta-language of cognition*, Proceedings of the Kenton, Olwandle Conference, 1993
- Bradley JD (1984) *Aspects of the assessment of the slow stream Chemistry I course at Wits, ASPECTS 5: A selection of papers and workshop items presented at the ASP Workshop*, University of Cape Town, 4-6 December 1984
- Bradley JD, Gerrans GC & Long GC (1989) *Concepts associated with chemical equilibrium*, I. *Spectrum* 27(1) cited in Mammen, 1996
- Broekman I, Cook J, Giraud J, Klein G, Potter C & Watson P (2003) *Gregorian chants and rap: dimensions of the work of the EDO in a changing university*, Proceedings of the 9th Conference of the South African Association for Academic Development, University of the Western Cape, 1-3 December 2003
- Brumfit C (1987) *Is language education or is education language?* Inaugural Lecture, Faculty of Educational Studies, University of Southampton, 7 May 1987
- Bulman F (1988) *Listening comprehension: the Cinderella skill*, ASPECTS 9: *Papers Presented at the ASP Conference*, University of Cape Town, December 1988
- Bulman F & Inglis M (1986) *Looking at course design in Learning Language Logic*. ASPECTS 7: *Proceedings of the 1986 ASP Conference*, University of Natal, Pietermaritzburg, 3-5 December 1986
- Bunting I (2002a) *Funding in N Cloete, R Fehnel, P Maassen, T Moja, H Perold & T Gibbon (eds) Transformation in higher education: global pressures and local realities in South Africa*. Cape Town: Juta
- Bunting I (2002b) *Students in N Cloete, R Fehnel, P Maassen, T Moja, H Perold & T Gibbon (eds) Transformation in higher education: global pressures and local realities in South Africa*. Cape Town: Juta
- Buzan T (1974) *Use your head*. London: BBC
- Buzan T (1984) *Speed reading*. New York: Dutton
- Cannon R & Boughey C (2000) *Lecturing in S Makoni (ed) Improving university teaching*. Johannesburg: Wits University Press
- Carlo M & Sylvester E (1996) *Adult second-language reading research: how may it inform assessment and instruction?* Philadelphia, National Center on Adult Literacy (ERIC: ED412373)
- Carrell PL & Eisterhold JC (1983) *Schema theory and ESL reading pedagogy*, TESOL Quarterly, 17:553-573
- Carrell PL, Devine J & Eskey DE (1988) *Interactive approaches to second language reading*. Cambridge: Cambridge University Press
- Champagne A (1986) *Teaching for workplace success*, Occasional Paper No. 113, National Center Publications, Columbus, Ohio: National Center for Research in Vocational Education, page 29 (ERIC: ED268386)

- Chouliariki L & Fairclough N (1999) *Discourse in late modernity*. Edinburgh: Edinburgh University Press
- Christie F (1985) *Language education*. Victoria: Deakin University Press
- Christie F (1993) The received tradition of English teaching: the decline of rhetoric and the corruption of grammar in B Green (ed) *The insistence of the letter: literacy studies and curriculum theorizing*. London: Falmer
- Clark R & Ivanic R (1997) *The politics of writing*. London: Routledge
- Clarke L & Winch C (2004) Apprenticeship and applied theoretical knowledge, *Educational Philosophy and Theory*, 36(5):509-21
- Clarence J (1987) Creditbearing courses in English for academic purposes – perpetuating or preventing independent learning? *ASPects 8: Proceedings of the 1987 ASP Conference*, Rhodes University, 2-4 December 1987
- Clayton E (1995) Scaffold: graded support or gibbet. The acquisition of terminology-concepts in a scientific discipline, *Proceedings of the 1995 Annual Conference of the South African Association for Academic Development*, Technikon Free State, 29 November - 1 December 1995
- Cloete N (2002) Policy expectations in N Cloete, R Fehnel, P Maassen, T Moja, H Perold & T Gibbon *Transformation in higher education: global pressures and local realities in South Africa*. Landsdowne: Juta & Company
- Coetzee S & Boughey C (1994) Personal voice and academic knowledge: the story of writing to learn in occupational therapy continues ... in B Leibowitz. & M Walker (eds) *Voices learning and development*. Bellville: University of the Western Cape Press
- Coffield F, Moseley D, Hall E & Ecclestone K (2004) *Learning styles and post-16 learning: a systematic and critical review*. London: Learning and Skills Development Agency
- Cohen AD (1987) Studying learner strategies: how we get the information in A Wenden & J Rubin (eds) *Learner strategies in language learning*. London: Prentice Hall
- Colley H (2000) Exploring myths of mentor: a rough guide to the history of mentoring from a Marxist feminist perspective. Paper presented at the British Educational Research Association Conference, Cardiff University, September 7-10
<<http://www.leeds.ac.uk/educol/documents/00001500.htm>>
- Cornell C (1992) Collaborative work on a Foundation Course in history as argument: towards a case study, *Proceedings of the 7th Conference of the South African Association for Academic Development*, Port Elizabeth Technikon, 3-5 December 1992
- Cornell C & Witz L (1993) The debate continues: critical perspectives on the development of the History I curriculum at the University of the Western Cape, *Proceedings of the 9th Conference of the South African Association for Academic Development*, University of the Western Cape, 1-3 December 1993

- Cornford I (2002a) Reflective teaching: empirical research findings and some implications for teacher education, *Journal of Vocational Education and Training*, 54(2):219-35
- Cornford I (2002b) Learning-to-learn strategies as a basis for effective lifelong learning, *International Journal of Lifelong Education*, 21(4):357-68
- Cornford I (2002c) Two models for promoting transfer: a comparison and critical analysis, *Journal of Vocational Education and Training*, 54(1):85-102
- Cullen J, Hadjivassilou K, Hamilton E, Kelleher J, Sommerlad E & Stern E (2002) *Review of current pedagogic research and practice in the fields of post-compulsory education and lifelong learning*, The Tavistock Institute, Report prepared for the Economic and Social Research Council
- Cummins J & Swain M (1984) *Bilingualism in education*. London: Longman
- Dalvit L (In progress) ICT and multilingualism in education: a case study on the production and use of computer-based material in both English and the African languages for Computer Science. Ongoing doctoral research. Grahamstown: Rhodes University Faculty of Education
- Davies E & Tisani N (1993) 5 years of tutor training at Rhodes University, *Proceedings of the 1993 Conference of the South African Association for Academic Development*, University of the Western Cape, 1-3 December 1993
- Davies E & Vorster J (1994) The SI leader as a teaching resource, *Proceedings of the 1994 Annual Conference of the South African Association for Academic Development*, University of Natal, 30 November-2 December 1994
- Davies T-A & Pillay D (2000) Small, medium and micro enterprise (SMME) partnerships: a tertiary initiative to create a unique co-operative education model in commerce (The Business Clinic), *South African Journal of Higher Education*, 14(3):196-203
- Davies E & Quirn L (1995) AD in practice: language development and problem solving in law, *Proceedings of the 1995 Annual Conference of the South African Association for Academic Development*, Technikon Free State, 29 November - 1 December 1995
- De Bono E (1970) *Lateral thinking: a textbook of creativity*. London: Ward Lock Educational
- De Bono E (1971) *The mechanism of mind*. Harmondsworth: Penguin
- De Villiers AB (1990) An evaluation of meta-learning in a first-year student development programme, *South African Journal of Higher Education*, 4(2):38-43
- Dison A & Selikow T (1992) The lunchtime programme: a response to some of the constraints faced by ASP in Sociology at Wits University, *Proceedings of the 7th Conference of the South African Association for Academic Development*, Port Elizabeth Technikon, 3-5 December 1992
- Donald C & Rutherford M (1994) Evaluation of the first year of a college of science, *South African Journal of Higher Education*, 8(2):45-53
- Downs CT, Inglls M & Akhurst EGJ (1995) Developing students' general knowledge as a foundation for studying life science at university: the Science Foundation programme

- experience, *Proceedings of the Annual Conference of the South African Association for Academic Development*, Technikon Free State, 29 November - 1 December 1995
- Du Toit A & Orr M (1987) *Achievers' handbook*. Johannesburg: Southern
- Eakins P (1997) *The theory and practice of co-operative education: a case study*. Melbourne: Royal Melbourne Institute of Technology
- Egginis S (1994) *An introduction to systemic functional linguistics*. London: Pinter
- Elbow P (1973) *Writing without teachers*. New York: Oxford University Press
- Emig J (1971) *The composing processes of twelfth graders*. National Council of Teachers of English (NCTE) Research Report No. 13. Urbana, Illinois: NCTE
- Emig J (1977) Writing as a mode of learning, *College Composition and Communication*, 28:122-128
- Emory J (1992) Workshop techniques as a strategy for teaching physics, *Proceedings of the 7th Conference of the South African Association for Academic Development*, Port Elizabeth Technikon, 3-5 December 1992
- Ensor P (1993) Building a team effort in health: facilitating curriculum development in UWC's School of Pharmacy, *Proceedings of the 9th Conference of the South African Association for Academic Development*, University of the Western Cape, 1-3 December 1993
- Entwistle N & Ramsden P (1983) *Understanding student learning*. London: Croom Helm
- Eraut M (2000) Non-formal learning, implicit learning and tacit knowledge in professional work in Coffield F (ed) *The necessity of informal learning*, ESRC Learning Society Programme, Bristol: Polity Press
- Fahnstock J (1986) Accommodating science: the rhetorical life of scientific facts, *Written Communication* 3:275-296. Cited in Geisler, 1994.
- Falk I & Miller P (2001) *Literacy and numeracy in vocational education and training: review of research*, Australian National Training Authority (ANTA), National Centre for Vocational Education Research (NCVER) (ERIC: ED454392 or <<http://www.ncver.edu.au/research/proj/nr9005.pdf>>)
- Fataar A (2000) Engaging the narrowing education trajectory in South Africa, *South African Review of Education*, 6:19-30
- Fertig M (2003) Managing tutorial provision in further education, Paper presented at the British Educational Research Association Annual Conference, Heriot-Watt University, Edinburgh, 11-13 September <<http://www.leeds.ac.uk/educol/documents/00003248.htm>>
- Feuerstein R, Klein PS & Tannenbaum AJ (1991) *Mediated learning experiences: theoretical, psychosocial and learning implications*. London: Freund
- Flowers LS & Hayes JR (1980) Identifying the organisation of the writing processes in LW Gregg & ER Steinberg (eds) *Cognitive processes in writing*. Hillsdale, NJ: Lawrence Erlbaum Associates

- Foggin C (1991) A description and assessment of the recent ASP initiatives at the University of Durban Westville with particular reference to the programme in the Faculty of Arts, *Proceedings of the 6th Annual Conference of the South African Association for Academic Development*, University of the Witwatersrand, 5-7 December 1991
- Foster D & Leibowitz B (1996) Accounts of learning a second language: lessons from UWC Linguistics 2 students about second language acquisition and schooling, *Proceedings of the 11th National Conference of the South African Association for Academic Development*, University of Fort Hare, 27-29 November 1996
- Fourie CM (2003) Deep learning? What deep learning? *South African Journal of Higher Education*, 17(1):123-131
- Fullan M (1982) *The meaning of educational change*. Ontario: OISE Press
- Fullan M (1991) *The new meaning of educational change*. London: Cassell
- Fuller A & Unwin L (2004) Expansive learning environments, integrating organizational and personal development, in H Rainbird, A Munto & L Holly (eds) *Workplace learning in context*. London: Routledge
- Further Education Unit (1979) *A basis for choice*. London: FEU
- Gamble J (2003) *FET Colleges in action: South African case studies*, research report. NTSIKA and HSRC
- Gamble J (2004) Tacit knowledge in craft pedagogy: a sociological analysis. Unpublished PhD thesis. University of Cape Town
- Gamble J. (2006) Theory and practice in the vocational curriculum, in M Young and J Gamble (eds) *Knowledge, Curriculum and Qualifications for South African Further Education*. Cape Town: HSRC Press
- Gasa M, Mji M, Ntuli M, Vumase M & Zwane M (1994) Revisited: the language question, *Proceedings of the 1994 Conference of the South African Association for Academic Development*, University of Natal, Durban, 30 November – 2 December 1994
- Gibb J (2004) (ed) *Generic skills in vocational education and training: research readings*, Australian National Training Authority, Australia: National Centre for Vocational Education Research Ltd.
- Gee JP (1990) *Social linguistics and literacy: ideology in discourse*. Basingstoke: Falmer
- Geisler C (1994) *Academic literacy and the nature of expertise: reading, writing and knowing in academic philosophy*. Hillsdale, NJ: Lawrence Erlbaum
- Geyser H (2004) Learning from assessment in S Gravett & H Geyser (eds) *Teaching and Learning in Higher Education*. Pretoria: Van Schaik
- Glaser R (1985) *The nature of expertise*, occasional paper no. 107, National Center Publications, Columbus, Ohio: National Center for Research in Vocational Education, page 26 (ERIC: ED261190)

- Goduka I (1999) Indigenous epistemologies - ways of knowing: affirming a legacy, *South African Journal of Higher Education*, 13(3)26-35
- Goody J (1977) *The domestication of the savage mind*. Cambridge: Cambridge University Press
- Gough D (2000) Discourse and students experience of higher education in B Leibowitz & Y Mohamed (eds) *Routes to writing in southern Africa*. Cape Town: Silk Road
- Grayson D (1991) The science foundation programme – a holistic approach, *Proceedings of the 6th Conference of the South African Association for Academic Development*, University of the Witwatersrand, 5-7 December 1991
- Grewar A (1987) Teaching students to think, read and write: study skills for under-prepared students, *Proceedings of the 1987 ASP Conference*, Rhodes University 2-4 December 1984
- Halliday MAK (1973) *Explorations in the functions of language*. London: Edward Arnold
- Halliday MAK (1978) *Language as social semiotic*. London: Edward Arnold
- Halliday MAK (1994) *Introduction to functional grammar*. London: Edward Arnold
- Hammond M (2001) Key skills: a metamorphosis of failure? Paper presented at the Learning and Skills Development Agency Conference at Robinson College, Cambridge, 5-7 December 2002 <<http://www.leeds.ac.uk/educol/documents/00001922.htm>>
- Harran M (Ongoing) A critical ethnographic study of report writing as a literacy practice by automotive engineers. Unfinished doctoral dissertation, Rhodes University, Grahamstown
- Harris J (2005) An overview of the international literature on student support in the Further Education and Training college sector: review undertaken for the Human Science Research Council, DANIDA Student Support Unit Project, part of the Support to Education and Skills Development Programme, September
- Havelock EA (1986) *The muse learns to write: reflections on orality and literacy from antiquity to the present*. New Haven: Yale University Press
- Hawarden J (1985) Some non-academic problems of ASP students at the University of the Witwatersrand, *ASPects 6: Proceedings of the 6th ASP Conference*, University of the Witwatersrand, 2-4 December 1985
- Heath SB (1983) *Ways with words*. Cambridge: Cambridge University Press
- Henkel M (2000) *Academic identities and policy change in higher education*. London: Jessica Kingsley
- Higher Education Learning and Teaching Association of Southern Africa. 2005 *Draft Constitution*. Stellenbosch: HELTASA
- Hill P (1995) A survey project as a rich source of language work, *Proceedings of the 14th Annual Conference of the Southern African Applied Linguistics Association*. University of the Free State, 28 June - 1 July 1994

- Holt-Reynolds D (2000) What does the teacher do? Constructivist pedagogies and prospective teachers beliefs about the role of a teacher. *Teaching and Teacher Education*, 16:21-32
- Holtman L, Marshall D & Lindner C (2004) Widening epistemological access: two undergraduate science courses in H Griesel (ed) *Curriculum responsiveness: case studies in higher education*. Pretoria: SAUVCA
- Holtzhausen S (1998) The development of facilitators as a prerequisite to the successful transformation of educational change, *South African Journal of Higher Education*, 12(3):33-37
- Hounsell D (1987) Essay writing and the quality of feedback in JTE Richardson, MW Eysenck & DW Piper (eds) *Student learning: research in education and cognitive psychology*. Milton Keynes: Open University Press
- Hunter P (1985) Academic support programme staffing and institutional policy, *ASpects 5: A selection of papers and workshop items presented at the ASP workshop 1985*, University of Cape Town, 4-6 December 1985
- Hunter P (1989) The transforming of learning: the evolution of the academic support programme, *South African Journal of Higher Education*, 3(2):68-78
- Human Sciences Research Council (2005) Supporting students in the FET college sector: proposal for phase 2 of the research project. Research Programme on Human Resources Development, March
- Ivanic R & Ming-i L (2005) *Understanding the relationships between learning and teaching: an analysis of the contribution of applied linguistics*, Literacy Research Centre, University of Lancaster, Report for National Research and Development Centre for Adult Literacy and Numeracy, Institute of Education, University of London <<http://www.nrdc.org.uk>>
- Jacobs J (1993) Vocational and general education: new relationship or shotgun marriage? *Leadership Abstracts*, Vol. 6(9):2-3
- Jackson F (1994) Acquiring applied linguistics discourse: the role of divers writing tasks for academic development in a postgraduate degree, *Proceedings of the 1994 Annual Conference of the South African Association for Academic Development*, University of Natal 30 November-2 December 1994
- Jiya Z (1993) Language difficulties of black BSc students, *South African Journal of Higher Education*, 7(1):80-84
- Johnson K & Morrow K (1981) *Communication in the classroom*. Harlow: Longman
- Kapp R (1996) Language, culture and the politics of the tutorial: the case for multilingualism in the tertiary context, *Proceedings of the 11th National Conference of the South African Association for Academic Development*, University of Fort Hare, 27-29 November 1996
- Kasper L (1997) Assessing the metacognitive growth of ESL student writers, *Teaching English as a Second Language*, 3 (1) (ERIC: EJ57986)

- Katz E (1995) Narrative paths into the academic kraal, *Proceedings of the 1995 Annual Conference of the South African Association for Academic Development*, Technikon Free State 29 November-1 December 1995
- Kelly A (2001) The evolution of key skills: towards a Tawney paradigm, *Journal of Vocational Education and Training*, 53(1):21-33
- Kitchin F & Frame J (1991) Mentoring in an academic context: a tool for educational development? *Proceedings of the 6th Conference of the South African Association for Academic Development*, University of the Witwatersrand, 5-7 December 1991
- Knoblauch CH & Brannon L (1984) *Rhetorical traditions and the teaching of writing*. Upper Montclair, NJ: Boynton Cook
- Kolb DA (1984) *Experiential learning: experience as the source of learning and development*. NJ: Prentice Hall
- Kotecha P & Rutherford M (1987) The first year of Wits integrated study programme for engineering: a case study, *ASPECTS 8: Proceedings of the 1987 ASP Conference*, Rhodes University 2-4 December 1987
- KPMG (2005) *Review of English for speakers of other languages*, Report for the Department for Education and Skills, Skills for Life Unit and the Learning and Skills Council
- Kraak A (2001) Policy ambiguity and slippage: higher education under the new state, 1994-2001 in A Kraak & M Young (eds) *Education in retrospect: policy and implementation since 1990*. Pretoria: HSRC
- Kraak A & Young M (2005) Editorial, *Journal of Education and Work*, 18(1):5-18
- Langer J & Applebee AN (1987) *How writing shapes thinking: a study of teaching and learning*. Illinois: National Council for the Teaching of English (NCTE)
- Lauri G (2001) Barriers to learners successful completion of VET flexible delivery programmes, in *Research to Reality: Putting VET research to work*, proceedings of Australian Vocational Education and Training Research Association Conference, Adelaide, March 28-30 (ERIC: ED456278)
- Lave J & Wenger E (1991) *Situated learning: legitimate peripheral participation*. Cambridge: Cambridge University Press
- Leibowitz B (1994) A revealing correspondence: research into students learning and writing in the first year history course in M Walker (ed) *Curriculum development: issues and cases*. Bellville: University of the Western Cape
- Leibowitz B & Parkerson A (1994) The role of the writing centre in challenging practice and policy on writing at the University of the Western Cape, *Proceedings of the 1994 Conference of the South African Association for Academic Development*, University of Natal 30 November-2 December 1994

- Livingston K, Soden R & Kirkwood M (2004) *Post-16 pedagogy and thinking skills: an evaluation*. Final report to the Learning and Skills Research Centre. Guildford: Learning and Skills Development Agency
- Lemmer M, Lemmer N & Smit JJA (1996) A didactically based approach to the presentation of practical work in first year Physics courses, *South African Journal of Higher Education*, 10(1):147-154
- Luckett K & Sutherland L (2000) Assessment practices that improve teaching and learning in S Makoni (ed) *Improving teaching and learning in higher education*. Johannesburg: Wits University Press
- Luria AR (1976) *Cognitive development: its cultural and social foundations*. Cambridge, Mass.: Harvard University Press
- Macdonald C (1990a) *Swimming up the waterfall: a study of school-based learning experiences*. Final Report of the Threshold Project. Pretoria: HSRC
- Macdonald C (1990b) "How many years do you have?" *English Language skills evaluation*. Final report of the Threshold Project. Pretoria: HSRC
- Mahatey N & Kwenaithe N (1992) The Residence Assistantship Programme: towards a holistic approach to student development, *Proceedings of the 7th Conference of the South African Association for Academic Development*, Port Elizabeth Technikon, 3-5 December 1992
- Mammen KJ (1996) Chemistry students erroneous conceptions of limiting reagent, *South African Journal of Higher Education*, 10(1):188-195
- Mandew M (1993) Exploring the notion of cultural capital and its implications for educational development, *Proceedings of the 1993 Conference of the South African Association for Academic Development* University of the Western Cape, 1-3 December 1993
- Manie A & Bijker T (1994) Evaluating the use of information technology (IT) in the Academic Development Programme at UWC in B Leibowitz & M Walker (eds) *Voices development and learning. AD Dialogues Vol. 3*. Bellville: University of the Western Cape
- Mannion G & Ivanic R (2004) Mapping literacy practices: theory, methodology, methods, Paper presented at the British Educational Association Research Annual Conference, University of Manchester, 16-18 September
<<http://www.leeds.ac.uk/educol/documents/00003841.htm>>
- Marion F & Säljö R (1976) On qualitative differences in Learning-I: outcome and process, *British Journal of Educational Psychology*, 46(1):4-11
- Masui C & De Corte E (1999) Enhancing learning and problem solving skills: orienting and self-judging, two powerful and trainable learning tools, *Learning and Instruction*, 9(6):517-42
- Mayer E (1992) *Key competencies*, Report of the Committee to advise the Australian Education Council and Ministers of Vocational Education, Employment and Training on employment-related Key Competencies for post-compulsory education and training

- McGrath S (2004) The state of the South African Further Education and Training college sector, in *Shifting understandings of skill*. Pretoria: HSRC Press
- McKenna R & Fitzpatrick L (2004) *Building sustainable adult literacy provision: a review of international trends in adult literacy policy and programs*. Australia: NVCE
- Mehl M (1988) Academic support: developmental giant or academic pauper? *South African Journal of Higher Education*, 2(1):17-20
- Mentis M & Frelick S (1993) Teaching thinking and thinking teaching: adaptations of Feuerstein's cognitive theories in a university setting, *South African Journal of Higher Education*, 7(1):101-109
- Mitchell L (1997) *Working with arguments*. Durban: University of Durban-Westville Press
- Mohan B (1990) *LEP students and the integration of language and content: knowledge structures and tasks*, Office of Bilingual Education and Minority Languages Affairs, Washington DC. (ERIC: ED341264)
- Morrow W (1993) Epistemological access in the university, *AD Issues*1 (1):3-5
- Moseley D, Baumfield V, Higgins S, Lin M, Miller J, Newton D, Robson S, Elliot J & Gregson M (2004) *Thinking skill frameworks for Post-16 learners: an evaluation*. A research report for the Learning and Skills Research Centre. Guildford: Learning and Skills Development Agency
- Motha C & May M (1996) Towards improving students academic writing: a joint venture with academic mainstream, *Proceedings of the 11th National Conference of the South African Association for Academic Development*, University of Fort Hare, 27-29 November 1996
- Moulder J (1991) Remedial education programmes: miracle of failure? *South African Journal of Higher Education*, 5(1):5-10
- Moyo C, Donn G & Hounsell D (1997) *Academic development and strategic change in South Africa: the SAAAD needs assessment and audit of academic development*. Braamfontein: South African Association for Academic Development
- Mphahlele MK, Green G, Huddle P, Mahooana P, Ncube C, Ogude A, Pinto D, Ramsden J, Rollnick M & White M (1994) Tutor development through workshop delivery, *Proceedings of the 1994 Conference of the South African Association for Academic Development*, University of Natal, 30 November-2 December 1994
- Muller J (2001) *Reclaiming knowledge: social theory, curriculum and education policy*. London: Routledge
- Mugoya C (1991) A study into the use of English across the curriculum in Transkei, Unpublished honours dissertation, University of Transkei
- Mutinucio IV (1995) Students learning difficulties of the concept of energy, *Proceedings of the 1995 Annual Conference of the South African Association for Academic Development*, Technikon Free State, 29 November-1 December 1995
- National Education Policy Investigation (1992) *Report on post-secondary education*. Pretoria

- Ncube C, Rollnick M & Manyatis S (1996) Student adjustment to university learning, *Proceedings of the 11th National Conference of the South African Association for Academic Development*, University of Fort Hare, 27-29 November 1996
- Nelson R & Foss L (1992) Developing appropriate counseling skills as an ASP tutor, *Proceedings of the 7th Conference of the South African Academic Development Association*. Port Elizabeth Technikon, 3-5 December 1992
- NRDC (2003) *Research review, adult literacy and numeracy interventions and outcomes: an exploratory study and review of controlled trials*. Institute of Education, NRDC
- Ntombela P, Ogram B, Zinner F, Tshabalala T & Majola B (1994) The student mentor programme on the Pietermaritzburg campus of the University of Natal: an affirmative action in action! *Proceedings of the 1994 Annual Conference of the South African Association for Academic Development*, University of Natal, 30 November-2 December 1994
- Olivier L (1996) Small scale quantitative research into tutorials identifying a developmental approach to teaching that integrates a tutorial and a writing process into a lecture, *Proceedings of the 11th National Conference of the South African Association for Academic Development*, University of Fort Hare, 27-29 November 1996
- Olivier-Shaw A (1994) Model C schools: multilingual education. *Crux*, 28(3):41-46
- Olsen D (1977) From utterance to text: the bias of language in speech and writing. *Harvard Educational Review*, 47:254-279
- Ong W (1982) *Orality and literacy: the technologising of the word*. London: Methuen
- Ogude NA (1995) Difficulties and challenges experienced in introducing conceptual tutorials in a traditional setting, *Proceedings of the 1995 Annual Conference of the South African Association for Academic Development*, Technikon Free State, 29 November - 1 December 1995
- Palazzo L (1987) The workshop approach for English 1 students, *ASPECTS 8: Proceedings of the 1987 ASP Conference*, Rhodes University, 2-4 December 1987
- Parkerson A (1996) A tale of two writers: an exploration of the one-on-one writing consultation as a context for learning at the University of the Western Cape, *Proceedings of the 11th National Conference of the South African Association for Academic Development*, University of Fort Hare, 27-29 November 1996
- Parsons PG (1993) The student at risk, *South African Journal of Higher Education*, 7(1):24-32
- Pavlich G & Orkin M (1993) *Diversity and quality: academic development at South African tertiary institutions*. Braamfontein: CASE
- Paxton M (1995) Tutor responses to student writing, *South African Journal of Higher Education*, 9(1):189-198
- Peires M-L (1994) Code-switching as an aid to L2 learning, *Proceedings of the 14th Annual Conference of the Southern African Applied Linguistics Association*. University of the Free State 28 June-1 July 1994

- Pennycook A (1994) *The cultural politics of English as an international language*. London: Longman
- Phillipson R (1992) *Linguistic imperialism*. Oxford: Oxford University Press
- Pillay AB & Loonat MS (1993) Student misconceptions concerning atomic nucleus, *South African Journal of Higher Education*, 7(3):190-192
- Pithers R & Soden R (1999) Assessing vocational tutors thinking skills, *Journal of Vocational Education and Training*, 51(1):23-36
- Platt E (1996) *The vocational classroom: a great place to learn English*. Washington DC: Centre for Applied Linguistics (ERIC: ED406856)
- Postma F (1993) Learning strategies in chemistry, *South African Journal of Higher Education* 7(3): 102-103
- Potter C & van der Merwe E (1993) Academic performance in engineering, *South African Journal of Higher Education*, 7(1):33-46
- Powell R, Smith R & Reakes A (2004) Basic skills and key skills: a review of the literature, Final Report <<http://www.leeds.ac.uk/educol/documents/00003620.htm>>
- Quinn L. (2000) An examination of feedback on draft essays, using Halliday's definition of context. *Per Linguam* 16(1):1-17
- Raimes A (1985) What unskilled ESL students do as they write: a classroom study of composing, *TESOL Quarterly* 19(2):229-258
- Rainbird H, Munro A & Holly L (2004) (eds) *Workplace learning in context*. London: Routledge
- Reilly T (1988) *ESL through content area instruction*, ERIC Digest, ED296572
- Richardson J (2005) Learning as cognitive development, paper prepared from project research seminar, Clare College, University of Cambridge. The Social and Organisational Mediation of University Learning (SOMUL), Centre for Higher Education Research and Information, Open University. Project funded by the Economic and Social Research Council as part of its Teaching and Learning Research Programme
- Roberts C, Gidley N, Eldred J, Brittan J, Grief S, Cooper B, Bayham M, Shrubshall P, Windsor V, Castillino C & Walsh M (2005) *Embedded teaching and learning of adult literacy, numeracy and ESOL*, Institute of Education, University of London, National Research and Development Centre for Adult Numeracy and Literacy
- Rosenberg S (1995) Illuminating innovation: the first year of the Rhodes University English for Academic Purposes Course, *Proceedings of the 1995 Annual Conference of the South African Association for Academic Development*, Technikon Free State, 29 November-1 December 1995
- Rollnick M & Rutherford M (1991) An evaluation of the physical science course in the College of Science at the University of the Witwatersrand, *Proceedings of the 6th Conference of the South African Association for Academic Development*, University of the Witwatersrand, 5-7 December 1991

- Rumelhart D & Ortony A (1984) The representation of knowledge in memory in Anderson RC, Spiro RJ & Montague WE *Schooling and the Acquisition of Knowledge*. Hillsdale, NJ: Lawrence Erlbaum
- Ruth, D. 1993. The role and status of tutors at university. *Proceedings of the 1993 Conference of the South African Association for Academic Development*, University of the Western Cape 1-3 December 1993
- Rutherford M & Donald C (1994) Increasing access to tertiary education through a college of science, *South African Journal of Higher Education*, 7(3):211-215
- Schon D (1993) *The reflective practitioner*. New York: Basic Books
- Scott I (1984) ASP selection and the issue of compulsion: a UCT perspective, *ASPECTS 5: A selection of papers and workshop items presented at the ASP Workshop*, University of Cape Town, 4-6 December 1984
- Scott I (2001) *Public funding for academic development: analysis and proposals*. Individual submission to the Ministry of Education in response to the 2001 Discussion Document *Funding of Public Higher Education: A New Framework*. Cape Town: UCT
- Scott I & Yeld N (1987) Towards a foundation programme in arts and social sciences. *ASPECTS 8: Proceedings of the 1987 ASP Conference*, Rhodes University, 2-4 December 1987
- Scribner S & Cole M (1981) *The psychology of literacy*. Cambridge, Mass: Harvard University Press
- Searle R & Naidoo K (1995) Issues and dilemmas in teaching large groups, *Proceedings of the 1995 Annual Conference of the South African Association for Academic Development*, Technikon Free State 29 November - 1 December 1995
- Shochet I (1985) University admissions: can we measure potential? *Aspects 6: Proceedings of the 6th ASP Conference*, University of the Witwatersrand, 2-4 December 1985
- Skehan P (1993) *Individual differences in second-language learning*. London: Edward Arnold
- Slabbert JA (1994) Metalearning and education for all, *South African Journal of Higher Education*, 8(1):38-41
- Slemming F (1995) An exploration of factors which impact on essay writing, *Proceedings of the 1995 Annual Conference of the South African Association for Academic Development*, Technikon Free State, 29 November-1 December 1995
- Soden R & Pithers R (2001a) A study of teaching, learning and thinking in further education, Paper presented at 4th International Conference on Vocational Education and Training Research, University of Wolverhampton, 16-18 July 2001
<<http://www.leeds.ac.uk/educol/documents/00001773.htm>>
- Soden R & Pithers R (2001b) Knowledge matters in vocational problem-solving: a cognitive view, *Journal of Vocational Education and Training*, 53(2):205-22
- Sommers N (1982) Responding to student writing, *College Composition and Communication*, 33(2):148-156

- South African Qualifications Authority (2004) Design, develop and implement assessment of learning in higher education. Unit Standard 14297. Pretoria: South African Qualifications Authority
- Stahl N (1991) *How college learning specialists can help college students*, ERIC Digest (ED334571)
- Starfield S (1987) What we can learn about learner training: a review of some of the literature, *ASPECTS 8. Proceedings of the 1987 ASP Conference*, Rhodes University, 2-4 December 1987
- Starfield S (1990a) Science and language: a new look at some old issues, *South African Journal of Higher Education*, 4(2):84-89
- Starfield S (1990b) Contextualising language and study skills, *Proceedings of the English Academic Conference on English at Tertiary Level*. University of Pretoria, July 1989. Published as a special edition of the *South African Journal of Higher Education*.
- Stasz C, Hayward G, Oh S & Wright S (2004) *Outcomes and processes in vocational education*, LSRC Research Report. London, Learning and Skills Research Centre
- Street B (1984) *Literacy in theory and practice*. Cambridge: Cambridge University Press
- Street B (1995) *Social literacies: critical approaches to literacy in development, ethnography and education*. London: Longman
- Street B (1996) Preface to M Prinsloo & M Breier (eds) *The social uses of literacy*. Bertsam & Amsterdam: Sached and John Benjamin
- Taylor G, Ballard B, Beasley V, Bock HK, Clanchy J & Nightingale P (1988) *Literacy by degrees*. Milton Keynes: SRHE & Open University Press
- Tema BO (1988) Academic support: its assumptions and its implications, *South African Journal of Higher Education*, 2(1):29-31
- Thomas R (1992) Teaching for transfer of learning, National Center for Research in Vocational Education, Berkeley, California (ERIC: ED352469)
- Thomson C (In progress) Changing words and worlds? A phenomenology of the acquisition of an academic literacy. Ongoing doctoral research. Faculty of Education, Rhodes University: Grahamstown
- Tillema H (2003) Integrating developmental assessment with student-directed instruction: a case in vocational education in the Netherlands, *Journal of Vocational Education and Training*, 55(1):113-25
- Tisani N (1988) First year black students in humanities and the tutorial system at Rhodes, *ASPECTS 9: Proceedings of the ASP Conference*, University of Cape Town, December 1988
- Tisani N (1992) Discipline specific skills: the history skills project at Rhodes, *Proceedings of the 6th Conference of the South African Association for Academic Development*, University of the Witwatersrand, 5-7 December 1991

- Torr L (1991) Academic support in the History Department, University of Natal, Durban, *Proceedings of the 6th Conference of the South African Association for Academic Development*, University of the Witwatersrand, 5-7 December 1991
- University of Natal (1989) *The role in society of the University of Natal: 1989 onwards*. Durban: University of Natal
- van Aardt A & van Wyk CK (1993) Student achievement in mathematics, *South African Journal of Higher Education*, 7(3):233-238
- van Dyk PJ & van Dyk AC (1993) Student achievement: a hierarchical classification as predictor, *South African Journal of Higher Education*, 7(3):239-245
- van Rensburg V (1994) Transforming the quality of teaching: an action research project in M Walker (ed) *Curriculum Development: Issues and Cases. AD Dialogues Volume 2*. Bellville: University of the Western Cape
- Venter E (2001) A constructivist approach to learning and teaching, *South African Journal of Higher Education*, 15(2):86-92
- Vermaak M (1992) Transferable thinking skills? *Proceedings of the 7th Conference of the South African Association for Academic Development*, Port Elizabeth Technikon, 3-5 December 1993
- Volbrecht T (1992a) The theory that lies behind ESL materials. The basic English language skills book: a personal view, *Proceedings of the 7th Conference of the South African Association for Academic Development*, Port Elizabeth Technikon, 3-5 December 1992
- Volbrecht T (1992b) At play in the fields of the flawed, *Proceedings of the 7th Conference of the South African Association for Academic Development*, Port Elizabeth Technikon, 3-5 December 1992
- Volbrecht T & Boughey C (2004) Curriculum responsiveness from the margins? A reappraisal of academic development in South Africa in H Griesel (ed) *Curriculum responsiveness: case studies in higher education*. Pretoria: SAUVCA
- Vygotsky LS (1978) *Mind in society: the development of higher psychological processes*. Cambridge: Cambridge University Press
- Vygotsky LS (1982) *Thought and language*. Cambridge, Mass.: MIT Press
- wa Kalonji K (1995) African languages in EAP classrooms: a resource or a hindrance to the development of communicative competence? *Proceedings of the 15th Annual Conference of the Southern African Applied Linguistics Association*. University of Stellenbosch, 10-12 July 1995
- Walker M (1994) Achieving excellence: research as a basis for curriculum development in M Walker (ed) *Curriculum development: issues and cases. AD Dialogues Volume 2*. Bellville: University of the Western Cape
- Walker M & Badsha N (1993) Academic development: the 1990s, *South African Journal of Higher Education*, 7(1):59-62
- Wallace MJ (1980) *Study skills in English*. Cambridge: Cambridge University Press

- Wallace B & Adams HB (1989) Assessment and development of the potential of high school pupils in the third-world context of KwaZulu/Natal, *South African Journal of Higher Education*, 3(1):83-97
- Watson M, Nicholson L & Sharplin E (2001) *Vocational education and training literacy and numeracy: review of research*, Australian National Training Authority (ANTA), National Centre for Vocational Education Research (NCVER)
<<http://www.ncver.edu.au/research/proj/nr9004.pdf>>
- White E (1984) Post structural literary criticism and the response to student writing, *College Composition and Communication*, 35(2):186-195
- White R & Arndt V (1991) *Process writing*. Harlow: Longman
- Widdowson H (1979) *Explorations in applied linguistics*. Oxford: Oxford University Press
- Wilkins D (1976) *Notional syllabuses*. Oxford: Oxford University Press
- Wilkinson AC, Buchner J & Smit J (1999) A framework for the development of flexible print-based resources in South African higher education, *South African Journal of Higher Education*, 13(2):118-128
- Williams K (2005) Lecturer and student (mis)understandings of assessment task verbs: mind the gap, *Teaching in Higher Education*, 10(2):157-173
- Winberg C (2000) Authorship, authority and social responsibility in educational materials development, *Proceedings of the 2000 Annual Conference of the Southern African Applied Linguistics Association*. University of Stellenbosch, 14-16 September 2000
- Wood T (1997) Revisiting language education: the semantics of understanding, *South African Journal of Higher Education*, 11(1):41-47
- Wright J (Ongoing) Boundary crossing in content-language integration in higher education: a case study in Radiography. Unfinished doctoral dissertation, Rhodes University, Grahamstown
- Yeld N (1986) Credit and compulsion for ASP courses: gains and losses, *ASPECTS 7: Proceedings of the 1986 ASP Conference*, University of Natal, Pietermaritzburg, 3-5 December 1986
- Young M (2002) Durkheim, Vygotsky and the curriculum, Paper presented at the 5th Congress of the International Society for Cultural Research and Activity Theory, Amsterdam, Vrije Universiteit, 18-22 June
- Zamel V (1982) Writing: the process of discovering meaning, *TESOL Quarterly*, 16(2):195-210
- Zamel V (1985) Responding to student writing, *TESOL Quarterly*, 19(1):79-101