Designing a second-language[1] bridging course for university students

C. A. Puhl and J. J. Swartz

The increasing number of students, especially black students, enrolling at university and needing to study in a medium of instruction which is not their mother tongue has underlined the need for additional language preparation as one way to reduce the failure and dropout rate. A possible solution is a bridging course aimed at developing academic language competencies to enable students to cope with communicative demands of their chosen course.

An effective bridging course must take into account the requirements of the chosen institution and course, the level of student competency already achieved, and the actual student needs. These needs are divided into three areas: cognitive, which includes communicative macro-language skills and problem-solving skills; affective which includes self-confidence, acceptance of responsibility, and motivation; and behavioural, which includes cross-cultural competencies.

Issues include duration of the course, the extent to which the course caters for special purposes, and the didactic strategies employed. Three further considerations are the influence on the course of sponsors from business and industry, the academic level of the course, and effective evaluation methods.

Die toenemende aantal studente, veral swart studente, wat aan 'n universiteit registreer waar die onderrigmedium nie hul moedertaal is nie, noodsaak bykomende taalvoorbereiding in 'n poging om die druip- en uitsaksyfer te verminder. Een moontlike oplossing is 'n oorbruggingskursus wat gemik is op die ontwikkeling van akademiese taalvermoëns om studente in staat te stel om die kommunikatiewe eise van hul gekose kursus die hoof te bied.

'n Effektiewe oorbruggingskursus moet die volgende faktore in ag neem: die vereistes van die gekose inrigting en kursus, die vaardigheidsvlak wat die student alreeds bereik het sowel as die werklike studentebehoeftes. Hierdie behoeftes word in drie kategorieë verdeel: kognitief - wat kommunikatiewe makro-taalvaardighede en probleem-oplossingsvaardighede insluit; affektief- wat selfvertroue, aanvaarding of verantwoordelikheid en motivering insluit; en gedrags- wat kruis-kulturele bevoegdhede insluit.

Sake rakende die duur van die kursus, die mate waarin die kursus in spesiale behoeftes voorsien en die didaktiese strategieë wat gebruik word, is ingesluit. Drie verdere oorwegings is die invloed van borge uit die sake- en industriële wêreld op die kursus, die akademiese peil van die kursus en effektiewe evalueringsmetodes.

1 Introduction

The need for academic support programmes arises from the recognition that many students entering university are inadequately prepared to carry out university studies successfully. The metaphor of a bridge has come into use, implying a worrisome distance between one educational end and the next educational beginning. Traditional university tuition has not succeeded in coping with that distance, and it is one of the reasons often put forward to account for high university failure rates. Bridging, therefore, is an attempt to make post matriculation studies accessible to underprepared students who, nevertheless, are regarded as having the potential to succeed.

The most obvious distance to be spanned by a bridging course may be a language one, and is almost certainly so when tertiary studies must be pursued in a language which is not the student's mother tongue. Language, especially in this context, can hardly be separated from its base in culturally defined knowledge and behaviour. Other less obvious distances exist between the university and the potential student. These differences may be related to the urban, rural, socio-economic, and cultural background of the student, as well as to the ethnic-related institution of which he or she is a product.

This distance cannot adequately be described by one factor, although one may be the focus of intervention efforts. Language has the advantage of addressing a variety of factors, of cutting across all curricula, and of being able to serve a student's academic, affective and cultural needs. Thus, whatever their focus, most bridging courses contain language components.

In this paper, we analyze more fully the need for bridging, and propose several considerations for designing special language-centred bridging courses. These considerations include requirements of the university course of study, student needs, didactic approaches, and the role of sponsors. An example of such a bridging course is provided in a case study.

2 The need for bridging

There is an education crisis in South Africa. According to Hofmeyr and Spence (1989):

- South Africa is an underdeveloped country, with a general shortage of resources - financial, material and human. There is an acute shortage of highly skilled blacks[2] in most fields.
- There is a considerable increase in the number of black matriculants (who already outnumber whites). Many seek tertiary education.
- Black matriculants in general are inadequately prepared for university study, a situation which seems to result mainly from the problems in black education. (The education system in South Africa is characterised by centralised, authoritarian control, with separate education departments for different racial groups.)

The 1976 uprisings highlighted this crisis, which is confirmed by the following figures given by Hofmeyr and Spence (1989):

- The pupil-teacher ratio in black education is 41:1 (while for whites it is 16:1).
- 87% of black teachers are underqualified (compared with 2% for whites).
- The government spends R476 per capita per year on black education (compared with R2508 per capita per year for whites).

- The matric pass rate for blacks is 56% (compared with 94% for whites).
- There is an extremely high university failure rate in general in South Africa. Of a sample of 3690 students who enrolled for a degree course in 1980, only 27% obtained their degree in the minimum period (and only 15% of those who enrolled for a B Sc degree). This testifies to the large gap between matric and university.

For many reasons, including the decline in the number of traditional students, the proportion of university places held by blacks is expected to rise dramatically in the next decade. Inevitably, these black students will have to cope with a medium of instruction - English - which is not their mother tongue. Problems of communication are bound to ensue.

These facts all underline the need for bridging courses. The increasing number of prospective students who may be termed "disadvantaged" or "underprepared" means that these courses will have to be greatly expanded and adapted to meet the widely differing needs of non-traditional students.

Although words like disadvantaged and underprepared are used in the literature, we need to go beyond this deficiency model of bridging and define the situation more in terms of difference than deficiency. The university has its own cultural roots in the traditions of the West; furthermore, it can be characterized to some extent as "western European male". Though the modern system dates from the 11th century, only in the late 20th century have its doors been opened to others, for example women, for attendance in significant numbers. It seems that anyone not Western and male may expect a larger distance between his or her own background and the university, and may find deliberate bridging efforts quite appropriate and beneficial.

In the American setting, bridging efforts have been developed for Hispanics, blacks, women, foreign students, and those designated in some way as disadvantaged relative to the demands of tertiary education. In the South African setting, the increasing numbers of prospective students from traditionally non-Western language and cultural backgrounds make bridging efforts on a large scale both necessary and feasible. Underlying issues concern change: to what extent the non-Western student must change to fit into this Western institution, and to what extent the university must adapt to African realities (for a fuller discussion see Mehl, 1988).

Another factor in the need for bridging is an economic one in terms of both money and human endeavour. University study is expensive and a student who must repeat a year suffers financial loss while not earning any income. In addition, it costs the state thousands. An unsuccessful year of study is a costly way of determining student goals and placement. The demoralizing effect of a mismatch between university demands and student abilities as well as feelings of failure are also costly. Spending extra years to complete degree work ties up seats that would otherwise be available to incoming students.

First perceived as a peripheral activity, bridging is becoming more and more a fact of university life, and may well be the forerunner of new policies, strategies and structures to meet the challenge of the future.

3 Characteristics of programmes: bridging vc academic support

Bridging courses can in some ways be distinguished from academic support programmes (ASPs), though at times the distinctions are blurred. Their aims are demonstrably

similar. Both acknowledge the gap between a student's entry level and the academic demands of a chosen course of study and both aim to close that gap by developing student potential. The main differences seem to lie in **how** these aims are achieved, and **how long** it takes to achieve them.

(a) Bridging courses are usually held before university study commences, while most ASPs form part of the actual degree course or are concurrent with it. ASPs may be offered in the form of a bridging year or may be integrated into all the years of study, in which case the degree course is extended, e.g. four years' work is covered in five years. A bridging course, however, may be as short as a few weeks.

(b) The content of a bridging course is likely to be more general, emphasizing components such as language for academic purposes and thinking and problem-solving skills. Affective needs are also addressed. The content of ASPs is more likely to be course specific, involving compensatory work in a particular subject field, e.g. mathematics. The language input may be directly related to the course content.

(c) Bridging courses, while recommended, are usually voluntary, though a bursary-holder may be compelled to attend by his or her sponsor. They tend not to carry credits. ASPs are often obligatory and may include credits.

(d) Funding for bridging and ASP courses is often obtained outside the university from the private sector. Universities however seem to be assuming more responsibility in these efforts.

(e) Sponsors and the private sector in general may play a major role in the planning and presentation of bridging courses, possibly in conjunction with a central unit at the university. ASPs are often faculty-based or "owned", ownership implying staff participation in all the stages of programme development (Hofmeyr and Spence, 1989: 41). There may even be a variety of ASPs within a given faculty to cater for very specific needs.

4 Principles for designing a bridging course

Considerations for designing any type of support programme should include the actual skill requirements of the chosen course of study and the requirements of the tertiary institution at which it is offered, the level of student competency already achieved, and the cognitive, affective and behavioural needs of the participating students. Decisions must be taken regarding the duration of the course, the extent to which it will cater for special purposes, and the didactic strategies to be employed. The needs of sponsors will have to be considered. Furthermore, the academic level at which the course is to be presented must be determined, as well as effective methods of evaluating the final product.

Unfortunately many bridging courses have proved less than popular in South Africa and course designers would do well to note the reasons for their failure (Mehl, 1988) in order to learn from the experience of others.

4.1 *Requirements of institutions and courses*

In a document issued by the Department of National Education (1988), entitled: A Philosophy for Technikon Education, some characteristics of tertiary education are

listed. These include "the student's ability to work on his own... insight into an evaluation of subject matter, the lesser degree of guidance by the lecturer... and the encouragement of creative thinking and problem solving". If these requirements are considered against the background of the common learning styles used by under-prepared students, viz. "rote memorization and dependence on a teacher or text-book" (Hofmeyr and Spence, 1989: 42; also Wales, Nardi, and Stager, 1988), it is clear that one of the issues a bridging course must address is the need to improve students' learning strategies. The course of study for which students have enrolled will also determine the cognitive orientation of the bridging course. Not only is it true that language competence is a crucial variable in any learning process, but a knowledge of the vocabulary and specific language functions relevant to particular fields of study are bound to prove invaluable to aspiring students. For this reason, academic staff should be involved in the planning of bridging courses for students in their faculty. This is not to say that all the requirements of a given institution or faculty can be incorporated into a bridging course, let alone one whose primary focus is the development of language proficiency, but given the limitations of time and the size of the gap to be bridged, these requirements should be accommodated as far as possible in the course design.

4.2 *Student competencies*

Because the matriculation examination has been shown to be a less than reliable indicator of university success especially among black students (Schochet, 1986; Sass, 1988), student admission procedures have become more flexible to include the results of aptitude and proficiency tests, interviews, assessment of motivation, opinions of teachers, and biographical data (Hofmeyr and Spence, 1989). This means that while the entrance level of selected students may be below the matric norm, the students' disadvantaged background and academic potential have acted in their favour. While this selection process seems fairer, it makes even greater demands on the bridging course. In fact, many students who successfully obtain a matriculation exemption may also require bridging. To determine students' language competence, pre-testing of language proficiency provides a useful guide to the required level and content of the envisaged course.

4.3 *Actual student needs*

One of the reasons suggested for the unpopularity of many bridging courses is that students and universities often differ in their perception of what makes for successful tertiary study (Tema, 1988). Somehow, as Tema says, underprepared students must be made aware of their weaknesses without destroying their self-confidence or creating the impression that they are being denied equality with other students who do not require bridging. Thus students should be involved in identifying their own needs.

A survey of academic support courses offered at South African universities reveals that most, if not all, include a language skills component. This acknowledgement of the importance of language in providing access to specific subject matter strengthens the view that language can also serve the cognitive, affective and behavioural needs of students.

4.3.1 *Cognitive needs*

To acknowledge a student's cognitive needs is to recognize that it is not only what students do not know that is important, by also how they can be helped to gain that knowledge. Many students, both black and white, have come through an uncritical, conservative education on the basis of their ability to memorize and reproduce textbook material. These bad learning habits have to be unlearned and replaced with positive and independent learning approaches involving specific thinking and problem-solving skills, preferably in a way that relates to the chosen field of study. Furthermore, students need to be helped to apply these skills in the academic context. Nor can these skills be divorced from the language required to understand and use them. This language need complements the more obvious need to communicate in oral and written form in the medium of instruction. Discussing the elements of a support programme for engineering students at UCT, Sass notes:

> An understanding of English, particularly as it is used in a scientific and technological context, is essential to the successful study of engineering in an English medium institution. Furthermore, effective communication, both orally and in writing, is essential in the practice of engineering. Most essential in this area is the development of the skill involved in the logical ordering of arguments in words as opposed to symbols. (Sass, 1988: 27)

As long as educational systems do not promote the development of thinking skills in the schools, it will remain the task of pre-university bridging courses to begin to address this deficiency. This requires the use of "suitable materials which build the requisite thinking skills explicitly into the presentation of the content" (Mehl, 1988: 19). In mastering these skills, students need to use certain language macro-functions such as definition, simplification, comparison and contrast, classification, generalization, and developing ideas in discourse, to give a few examples. (Vide Odendaal, 1985, for an extensive analysis of English language functions which mother-tongue speakers of black languages most need to master.) It is clear that a student's language needs are inseparable from broader cognitive needs, and, moreover, that the latter can be accommodated within a course whose primary focus is on language.

The enormity of the language-learning task that students face should not be underestimated. The L_2, in this case English, is probably not spoken in the home. A large proportion of black homes have no electricity for television. Printed materials such as newspapers and magazines are sparse in these homes. Given separate residential areas, there is little opportunity for contact with English-speaking peers. Most of the teachers in the black schools, not fully qualified, as shown above, still must attempt to function in a language not their mother tongue and which they have grasped only to a degree (Odendaal, 1985). It takes time to become fluent in another language, time which is not found for these students in the home, neighbourhood, church, with friends, or from the media, and not even at secondary school.

The situation may be illuminated by comparison with that in the American setting. With about 7% of the population Spanish-speaking, children from these

homes (where Spanish is usually spoken) can still find English in school, with friends, and by means of the all-pervasive media. A child coming to school from a school in a Spanish-speaking country needs one or two extra years in which he or she attends special bilingual classes or repeats a year's studies, just to function well enough in English. This child is in a sense supported (or pressurized, depending on viewpoint) in L_2 learning if only by the size of the large English-speaking environment. In some ways, in the States it has become a luxury to study one's mother tongue, let alone study IN that mother tongue.

The time needed by pre-tertiary students in the American setting when English is the major need is noteworthy. For example, a foreign student who finishes secondary school in his or her country before coming to the United States may need one or two extra years in the States for language development before degree work, or very much of it, is begun. Many universities offer programmes in English as a second language and, based on students' English proficiency test scores, may require incoming students to complete that program before commencing study in the degree programme. It is common also for foreign students to need time to adjust to life in a new environment, and a language program allows this opportunity as well. Immigrants to the States whose mother tongue is a language other than English have similar needs, and if they are refugees, interrupted schooling may have stunted cognitive growth, adding underpreparedness to language need.

Often these students are served by a combination of bridging work done before regular course work, and then by tutoring, ASP work, counselling and study skills development concurrent with university credit courses (Johns, 1989).

Turning to thinking skills, in which we include creative thinking and problem-solving, we have already noted several calls for improvement in this area. It is not enough to preach against rote learning; one must provide a systematic alternative. Wales, Nardi, and Stager (1988) state:

> Research shows that students need not just encouragement, but carefully guided practice of explicitly taught, specific thinking skills and processes applied over time in various subjects. (1988:682)

Considering that this observation was made of engineering students in the USA, one realizes that the situation is not unique to South African students, but is a generalized educational need.

Fortunately there has recently been great activity in the teaching of thinking. One who teaches thinking says nothing about what to think, but rather shows how to use the powers of the mind in a full and disciplined way. Several approaches can be identified, and a few examples follow. Edward de Bono (1976, 1986) offers about 70 procedures, or "tools", for channelling one's thought processes; he has created six sets of teaching materials published as the CoRT (which stands for Cognitive Research Trust) programme. David Perkins, of Harvard University, worked on the development of the Odyssey Curriculum (Adams et al., 1986); his approach is explicated in the book *The teaching of thinking* (Nickerson, Perkins and Smith, 1985). The approaches used by Feuerstein (with Jensen, 1980) and Sternberg (1986) must be noted as extremey useful for improving cognitive operational functioning.

The work of such leaders in the field can be studied with specific purposes and specific groups of learners in mind. The challenge is to create a course tailored to the needs of these learners in particular. A contextualized course that draws upon the natural connection between language and thought would seem to be exactly what such students need.

Wales, Nardi, and Stager (1988) go on to connect communication skill with thinking skill in the education of engineers; in fact, they put communication at the top of their hierarchy of thinking skills, showing that decision-makers must listen, evaluate ideas and opinions, agree on the problem to be solved as well as options to solve it, plan a solution, and implement it. They point out that individual decision-makers must hold discussions in their heads, with the right brain putting forth creative choices and the left brain testing them logically and critically. Integration of the two is necessary for good academic and later professional decision-making, and learners must command enough of the language, as well as that particular subset of the language, in which to carry out the thinking/communication process.

4.3.2 *Affective needs*

A holistic approach to preparing a student for tertiary study is essential in that a prospective student, a whole person, is taking a new and huge step in life. Students must be seen as more than learners or thinkers. At this stage of late adolescence, one's hopes, fears, loves and hates may still be finding strength and expression. For them as well as for us all, emotions are also reasons, and as such, have a role in thinking. A bridging course must also address non-academic issues which feature strongly in the success of students at university, all the more so for beginning students. It has already been noted that many students enter such courses with a negative attitude: they see this type of support as "a form of academic racial discrimination" (Hofmeyr and Spence, 1989 : 45). Black students are often subject to a variety of political pressures; they bring with them an awareness of the inferior separatist education they have received, and which they reject; they have lived through boycotts and the general disruption and closure of schools. In short they may well have been alienated by the system, with negative consequences for their self-image, confidence and motivation. There is thus an urgent need for personal development, in addition to academic support.

A bridging course must promote the will to learn, and to succeed in this goal, it must provide students with incentives. A possible incentive may be the students' perception of the course as being directly relevant to their particular needs. Another may be sufficient feedback to enable them to monitor their progress. The setting of challenging tasks invites students to accept responsibility for their own learning and indeed their own lives. The successful execution of tasks promotes confidence. Interesting and stimulating material presented in a lively manner encourages motivation and attendance.

Disincentives may result when the course is seen as merely another hurdle to be crossed before qualifying for tertiary study. If students struggle with any component of the course, empathy, not paternalism, is needed. They must be made aware

of their potential and the growth they have achieved thus far, accepting educational weaknesses as challenges to be met. For the inevitable problems that will arise, they need help in developing the skill to respond with assertiveness rather than submissiveness or aggressiveness. Much of the success or failure of the course will depend on the prevailing atmosphere; it is essential that students come to realise that learning is enhanced when they are calm and relaxed.

4.3.3 *Behavioural needs*

The mental image that many people associate with education at any level is that of a young person a) listening to a teacher, or b) reading from books. While listening and reading are language behaviours, so too are the productive skills of speaking and writing, and as such, all are modifiable - able to be developed - for educational purposes.

A black student in South Africa has studied in English from Standard 3 but probably has not studied at an English-medium or Afrikaans-medium institution, let alone lived in an L2 environment. While some connection has been made through language, the student is taking a new step into the second culture, and is likely to encounter a host of foreign expectations and behaviours. For most people, the process of crossing cultures results in personal disorientation, and this is especially true for late adolescents still in identity formation (Erikson, 1968). Termed "culture shock" (Oberg, 1960, in Lewis and Jungman, 1986) and described as having mild to strong degrees, it may last from a few weeks to two years. While a few people have become totally disoriented, most people deal with the stresses involved, be they unpleasant or exciting, and get on with the job. However, this period is one of vulnerability for new students, and support, understanding, and guidance are usually appreciated.

Part of coping with the new culture is learning new ways to express oneself that the new culture understands. This is where behavioural adaptations come in, both on the part of the new students and on the part of the university. It is advisable for both to do some adapting. However, they may choose not to modify or add or delete behaviours. Our position is that we must bring new cultural behaviours to the attention of the students, explain them, and explain choices from a cost-benefit position. Ultimately no one must adapt. If the choice not to adapt is taken, then consequences must be accepted. Our point is that the choice must be made freely and with knowledge of consequences.

Realistically speaking, at this point it is the university that makes the greater cultural demands plus its own demands as an educational sub-culture, though the need for it to adapt more is being explored. The question then becomes how the student can function within the system without losing integrity (a universal issue for students).

The role of bridging courses is to help students function in the interests of their own success. Thus their behavioural needs imply command of the cultural rituals, such as those of hello and goodbye; use of time; use of space; body language; relationship behaviours with faculty, peers, sponsors, and their chosen profession. Behavioural needs include appropriate and timely question-asking; speaking up in

an easily audible voice; working in groups. Students in general can benefit from a knowledge of appropriate behaviour in the social aspects such as business-oriented luncheons. The situation is summed up:

> To most black students a university is a foreign environment; they lack the necessary networks to prepare them for university life and the culture of their chosen profession. Such students need to be "socialised" into the ways of the university (Hofmeyr and Spence, 1989: 42).

For example, in the ESKOM bridging course, typical student problems are addressed through role-play (using the L_2, of course) and are analyzed from several points of view, including cultural. On another level, the course includes a range of meal-centered events, visits to museums, the zoo, the theatre, places of local interest, and industrial centres. A pre-university course for engineers at Wits includes activities such as "current affairs studies, theatre attendance, a toastmaster's course followed by hosting a formal dinner, ...visits to the stock exchange, industrial exhibitions and a game park" (Hofmeyr and Spence, 1989: 41). Gone are the days when scientists and engineers could be effective working alone in their laboratories. An educated person must be a part of society at many levels.

Another behavioural aspect of student needs is how to thrive in a non-racial setting. A key issue encountered by black first-year students is the sincerity of white students; are they friendly because they like you or are they friendly out of guilt? The white students may not themselves know.

4.4 *Duration of course*

What can be achieved in a bridging course is determined primarily by the time available, and this in turn is subject to the availability of the participating students, funding and facilities. As a course of this kind requires concentrated input, it is essential to set realistic goals to avoid the danger of overwhelming students. The length of the course will determine to what extent long-term as well as short-term goals can be addressed.

Objectives, especially in a short-term course, need to be selected so as not to overlap with support work available in the programme to which students are going. One can only achieve so much in a short period, but that realization can be beneficial in that it forces one to set clear and limited objectives. Actually, there will always be a limit to how long students are willing to study in a pre-university course, and that time seems to be growing shorter, especially as academic support continues to develop.

4.5 *Special purposes*

To a large extent the presentation of bridging courses is an attempt to prepare students to succeed within specialised fields of study, such as commerce, law and engineering. Students generally want to be given what is in the syllabus. However, as has been pointed out, a bridging course has to cater for a wider variety of student needs, not merely those related to the subject matter. A bridging course does well to offer general university survival skills, such as communication skills, study

skills, time management, and thinking about thinking, stressing transfer of these skills to their fields. The language offered must go far beyond vocabulary and must encompass language functions of greatest use in particular areas.

Thus there has been a shift in recent times to an integration of language, thinking and problem-solving skills within subject areas and specific disciplines (Wales, Nardi, and Stager, 1988). This ensures that students recognise the relevance of the course and that they are assisted to transfer their acquired skills to specific subjects (Hofmeyr and Spence, 1989). Computer-based instruction also enables a greater volume of specific subject matter to be covered in a given course, while allowing students to improve their computer literacy.

4.6 *Didactic strategies*

As students require language in order to communicate, to understand lectures and reading matter, to speak and write well, and to solve problems, the emphasis in bridging courses should be on learning by doing. There should be very little lecturing and far more working in small groups, where students have an opportunity to participate actively. Formal explanation need be offered only when required. The approach is necessarily eclectic to integrate the teaching of thinking with the acquisition of language skills within the context of a specific subject field. Good use can be made of self-instructional materials. The ratio of student to instructor must be kept low to provide for individual attention. The approach should always be sufficiently flexible to allow for adaptation on the basis of student feedback.

4.7 *The role of sponsors*

As with education in general, bridging courses are expensive, so they need to be as cost effective as possible. Government policy towards universities includes rationalisation and subsidy cuts, and for this reason universities are forced to turn to other sources of funding if they are to accommodate the ever-increasing needs of underprepared students eligible for admission to specialised study courses. Hofmeyr and Spence (1988) predict that sponsorship by the operating divisions of private sector companies will increase as they become more eager to staff their operations with highly skilled blacks and produce black professionals.

In fact business and industry's involvement in academic support programmes will have to go beyond funding. What is required is virtually the formation of a partnership with the universities to ensure constant innovation and relevance in the planning of bridging and support programmes to meet the country's demand for skilled labour. This is now being done at several universities, such as the University of Cape Town (UCT), the University of the Witswatersrand (Wits), and the University of Natal, among other places. At UCT, for example, Sass (1988) describes the Shell Scheme which began in 1982 with 15 engineering students. The Engineering Department over the years has developed its support programme and includes students sponsored mainly by Shell, Anglo-American, and ESKOM. Other departments have similar programmes.

Sass (1988) points out a further role for sponsors, that of providing the student with a mentor who maintains contact with the student during the course of university study. The mentor represents a further way that the student is bonded to the company which one day will employ him or her.

This is not to say that the private sector should usurp the functions of education. However, the needs of both universities and business are best served by a collaboration of parties who are concerned with providing the best possible training for underprepared students who have the potential to succeed in their chosen professions, in the interests of the country as a whole.

4.8 *Evaluation methods*

Evaluation in education is not an easy issue. All human beings are complex, those being educated as well as those doing the evaluating. Observations are subjective. Finding objective tests that are appropriate, reliable and valid is difficult enough, let alone interpreting them responsibly. How then does one evaluate the success of a pre-university bridging course, especially a short-term one?

Obviously a course is best evaluated in terms of its objectives. The main objective of bridging courses is to improve student success at the tertiary level. Often this means a higher pass rate compared with a group of students similar in every important way except that they did not have that bridging course. Finding such a group is nearly impossible. One cannot ethically withhold course work otherwise available to students just for purposes of experimentation. If students self-select, then the groups are not similar in that they probably vary in motivation and self-confidence, important factors in academic success. The practical aspects of identifying and testing a control group are formidable.

Assuming one can find the right tests, one then considers pre- and post-test comparisons. If the time between pre- and post-tests is short, students may remember test items, invalidating results. If too long, variables other than the course may influence students so that attributing results to the course becomes even more risky. Tests that meet above criteria and have parallel forms are one possibility.

Observation cannot be written off because of its inherent subjectivity; efforts must be made to clarify as well as reduce subjectivity. Fortunately research exists which utilizes classroom observations from perspectives of students, teachers, and observers. Observers may include sponsors and faculty members who teach the students after bridging.

Feedback in many forms is essential, including hard and soft data, so that courses may continually change and adapt to meet the needs of learners and universities alike.

5 A case study: The ESKOM[3] bridging course

The ESKOM Bridging Course of 1989 was a three-week, intensive course created by the Institute for Language Teaching (INTUS) at the University of Stellenbosch. It was taught under the auspices of The UPTTRAIL[4] Trust, a trust for the improvement of black education. The venue was ESKOM College, near Johannesburg. The focus of the course

was language for academic scientific purposes taught by means of thinking skills used as language macro-functions. It was attended by 30 black students.

Unique features of this particular bridging course can be sketched as follows:

(a) the use of the deliberate teaching of thinking as a means of teaching language;

(b) the special INTUS approach to the teaching of language; and

(c) the three particular clusters of cognitive, affective, and behavioural student needs which formed the basis of course development.

Taking them in reverse order, we have already discussed student needs. The special INTUS approach has been well documented elsewhere, so only a few words are needed here. This special approach began to be used in the 1980s in the South African setting, where it was adapted and has been further developed by INTUS. Research supports its efficacy for L_2 instruction. Basically, it includes a text that was written to be "roughly tuned", in Krashen and Terrell's term (1983), to this special group of L_2 learners. The text was a story with universal themes about characters with whom they could identify. Language macro-functions that students were likely to need at university were selected from those identified for black teachers in extensive research by Odendaal (1985). Language was taught for student comprehension and practice rather than analysis. English for academic purposes for pre-university students formed the focal point for determining difficulty level, types of language activities, and contexts for practice. Activities which shift the focus from language to meaning were used throughout. The use of music and relaxation techniques were included to aid in internalizing language structures.

Many of the needed macro-functions are also expressible as thinking skills. Thus to practise a thinking skill in the target language, here English, is to develop skill in thinking along with language skill. This connection is unique in the literature on L_2 teaching; a comprehensive literature search showed only two articles which make this clear connection. One article is by van der Vyver (1987), in which he argues for the teaching of a combination of L_2 and creative thinking skills in the sense of first broadening and then focusing one's mind, as an efficient way to improve teacher competencies. In the other article, Sacco (1987) combines the traditional thinking skills of logic (sometimes called "vertical thinking") with the teaching of French. The thinking skills used in the ESKOM bridging course can be termed horizontal as well as vertical, in that they include means of thinking broadly as well as validly, hence the first article is the more relevant. To combine with L_2 teaching, our approach draws on the work of current leaders in the field of the teaching of thinking, such as de Bono with his "lateral thinking" (1986), Nickerson, Perkins, and Smith (1985), and Adams et al. (1986).

The students attended classes from 08h00 to 15h30 daily, with computer-literacy classes given twice weekly from 15h50 to 16h30. Students met three evenings per week, and their weekends were utilized for an engineering problem-solving competition and field trips for cultural and social purposes. Guest lecturers were invited. ESKOM officials were in frequent contact with students, and were always available.

In the ESKOM course we used pre- and post-test comparisons, utilizing several NIPR (National Institute for Personnel Research of the Human Sciences Research Council) tests administered by the ESKOM psychometrics department, along with a recognized

test of English. We used student journals, student interviews, and observations by instructors, visiting professionals, and ESKOM officials and staff. Furthermore, we obtained feedback when students began at university, and we saw the students after three months for a follow-up workshop, where they filled out questionnaires on their bridging experience.

Our methods and results are being analyzed. They have provided a valuable matrix of both soft and hard data, a matrix which can be further developed in future courses. Determinations of student success must wait until the year's end, although by then the students will have had so many other influences that to isolate those of the intensive bridging course will be virtually impossible. In sum, our experience indicates possible evaluative procedures, and others are being explored, such as a cohort design which compares each group with the preceding one.

The students who attended the course were in the best position to evaluate its success, and feedback from them was overwhelmingly positive. They strongly recommended the course for future students. Instructors and observers also were very positive. The means of post-test measures were higher than pre-test means. Follow-up workshops indicate that students are making use of thinking tools in their studies, and in some quite creative ways. Their professors at university noted how this group, unlike those in previous years, was ready from the start to speak up and take initiative, two qualities needed for academic success that formerly were long in coming. A sponsor who observed the students throughout the course stated: "The students underwent a metamorphosis in the space of three weeks . . . they were much better prepared than most first-year students" (du Plessis, 1989).

6 Conclusions

There is little doubt that bridging courses and ASPs can, to a large extent, help reduce the university failure rate, thereby making high-level specialised study accessible to underprepared yet potentially strong students. Anglo American reports that black engineering students who have worked through a faculty-based ASP are now approximating the norm of the white students' pass rate, i.e. a 50% chance of obtaining an engineering degree within six years. Success is linked to attendance, however, and courses requiring compulsory attendance (usually credit-bearing courses) achieve a higher success rate (Hofmeyr and Spence, 1989).

Success also depends on the credibility of a course. Both sponsors and especially participating students must experience the course as relevant and beneficial, as well as non-discriminating. For this reason it is essential to obtain maximal involvement of universities, the private sector and the community at large in the development of these programmes.

Bridging courses and ASPs are currently in flux, having entered a phase of intense experimentation and change. This, in part, is due to the fact that we now have a clearer idea of what is meant by a "disadvantaged" or "underprepared" student. University admission procedures have become more flexible to accommodate such students, acknowledging their potential, while at the same time admitting their many and varied needs. This has emphasized the need for meaningful instruction and support.

There are limits to what these programmes can achieve, but properly developed they

can make a valuable contribution towards:

(a) achieving a non-racial culture,

(b) changing university tuition methods as well as attitudes toward "different" students, and

(c) changing the attitudes of society.

At the heart of all these ideals lies language, as a force for communication and change, as a tool for learning. It is now widely agreed that thinking skills must be integrated into subject content, and it appears that this can effectively be brought about within the ambit of a bridging course whose primary focus is the development of second language proficiency.

Notes

1 L_2 is used to refer to any language in addition to one's mother tongue.

2 The reference to "blacks" in this paper is used to include all people of colour.

3 ESKOM refers to Electricity Supply Commission, the major producer of electricity in Africa.

4 UPTTRAIL is an acronym for Upgrading of Teaching, Training, and Learning, and it refers to the educational trust launched by the Interuniversity Committee for Language Teaching.

Bibliography

ADAMS, M. J., et al. 1986. *Odyssey, a curriculum for thinking*. Watertown, Massachusetts: Mastery Education Corporation.

DE BONO, E. 1986. *CoRT thinking* 1 – 6. New York: Pergamon Press.

DE BONO, E. 1976. *Teaching thinking*. New York: Pergamon Press.

DU PLESSIS, J. 1989. Unpublished letter.

ERIKSON, E. H. 1968. *Identity: youth and crisis*. New York: Norton Co.

FEUERSTEIN, R., & M. R. Jensen, . 1980. Instrumental enrichment: Theoretical basis, goals, and instruments. *The Educational Forum*, May, 401-423.

HOFMEYR, J., & R. Spence. 1989. Bridges to the future. *Optima* (Anglo American House Journal). Vol 37, No. 1, 37-48.

JOHNS, A. 1989. EAP course design and the issue of transferable skills. Paper presented at the 23rd Annual *Tesol* Convention, San Antonio, Texas.

KRASHEN, S. D., & T. D. Terrell. 1983. *The natural approach: language acquisition in the classroom*. New York: Pergamon Press.

LEWIS, T. J., & R. R. Jungman, eds. 1986. *On being foreign: culture shock in short fiction*. Yarmouth, Maine (USA): Intercultural Press, Inc.

MEHL, M.C. 1988. Academic support: Developmental giant or academic pauper? *South African Journal of Higher Education*. Vol. 2, No. 1, 17-20.

NICKERSON, R., D. Perkins, & E. Smith. 1985. *The teaching of thinking*. Hillsdale, New Jersey: Lawrence Erlbaum Associates, Publishers.

ODENDAAL, M. S. 1985. Needs analysis of higher primary teachers in KwaZulu. *Per Linguam*, Special Issue No. 1.

PHILOSOPHY FOR TECHNIKON EDUCATION, A. 1988. NATED 02-118. Pretoria: Department of National Education.

SACCO, S. J. 1987. Crap detecting: An approach to developing critical reading and thinking skills in the foreign language curriculum. *Foreign Language Annals*. Vol. 20, No. 1, 57-66.

SASS, A. 1988. Academic support in engineering at the University of Cape Town. *South African Journal of Higher Education*. Vol. 2, No. 1, 25-28.

SCHOCHET, I. 1986. Manifest and potential performance in advantaged and disadvantaged students. Unpublished PhD thesis, University of the Witwatersrand.

STERNBERG, R. J. 1986. *Intelligence applied: understanding and increasing your intellectual skills*. San Diego: Harcourt, Brace, & Jovanovich.

TEMA, B.O. 1988. Academic support: Its assumptions and implications. *South African Journal of Higher Education*. Vol. 2, No. 1, 29-31.

VAN DER VYVER, D.H. 1987. English and operacy (creative thinking skills) for teachers. *Per Linguam*. Vol. 3, No. 1, 1-4.

WALES, C. E., A. H. Nardi & R. A. Stager. 1988. Do your students THINK or do they MEMORIZE? *Engineering Education*, April 1988, 682-688.