

STRATEGIES FOR LARGE CLASS TEACHING

by

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SUMMARY

STRATEGIES FOR LARGE CLASS TEACHING

In this qualitative study, the phenomenon of large class teaching in South African secondary schools is investigated. It was concluded that since large classes will be a feature of the South African teaching context for many years to come due to financial constraints, educators and educational planners should explore and implement coping strategies instead of becoming demoralised by the situation. The study provides several instructional guidelines for implementation in large classes in the South African context. The focus of these guidelines is on large class management and effective teaching in large classes. The possibilities of strategies such as whole group instruction, cooperative learning, peer teaching, groupwork and the proper organisation of classroom space are investigated.

KEY TERMS

Class size; Large class teaching; Teaching strategies; Cooperative learning; Groupwork; Questioning skills; Large class management; Teaching in the South African context; Innovative teaching strategies.

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CHAPTER 1

INTRODUCTORY ORIENTATION

1.1 INTRODUCTION

The South African Schools Act which came into effect on 1 January 1997 stated in its preamble that South Africa needs a new national school system to redress past injustices in education and to provide quality education (Department of Education 1996:2). As a result much money, time and effort have been, and are at the present time being, spent by government to create equal educational opportunities for all, within an education system where quality education is offered, thus rectifying the inequalities of the past.

Although these issues will be discussed in more detail later, it will suffice to note that it is generally agreed that the effect of the *apartheid* era was to direct funding and resources away from black education. Added to this is the further problem of schools becoming sites of struggle, especially after 1976. This not only led to a large scale breakdown in the culture of teaching and learning in the former black schools, but also to severe damage to the school infrastructure.

As a result of this legacy, education, especially in previously disadvantaged communities, is negatively impacted upon by various factors, social, political and economic, which make it difficult for government to rectify the inequalities of the past to the satisfaction of all parties concerned. This study is therefore an attempt to suggest ways in which the use of *existing educational resources* could be optimised to provide quality education for all—it will focus on the problems but also the opportunities of large class teaching.

According to Hofmeyr and Spence (1989:39), South Africa is an underdeveloped country in educational terms and is therefore subject to all the forces and pressures that are typical of developing countries. As a result, government's plans for a new education system are constrained by factors such as demography, educational expenditure, the scarcity of physical facilities and resources, and the current unsatisfactory quality of teaching. Some of these factors will be examined in the next few paragraphs.

1.2 FACTORS CONSTRAINING EDUCATIONAL PROVISION IN SOUTH AFRICA

1.2.1 Demography

According to Moulder (1991:8), the size and density of a country's population, its growth, decline or stability, as well as its age and gender composition, have a powerful impact on educational planning. The demographic reality of our situation leads us to conclude that there are too many people who lay claim to our dwindling financial, human and physical resources. South Africa's population is expected to grow to 54,1 million by 2011 (*Pretoria News* 1998:11). Although demographic projections indicate that the number of new school entrants has levelled off and will fall in the course of the new decade, government in the 1998/1999 financial year provided education to 13 million learners, which is one third of the total population (Donaldson 1998:32-33).

According to the annual report of the Department of Education (1996:47), it is estimated that in relation to current enrolments, there is a classroom backlog of between 50 000 and 60 000. In the former education departments, the learner-teacher ratios vary from 20:1 to as much as 50:1 and 60:1 (*Schools Communicator* 1996:1). Urban migration and the rapidly growing informal settlements furthermore influence learner-teacher ratios. Alfreds (1997:1) reported that the Gauteng province has a 5% annual increase in learners, primarily due to inter-provincial migration. According to estimations by the Centre for Development and Enterprise (1995:10), the population

will continue to increase in the metropolitan areas and decrease in the rural areas. Within urban areas, black middle-class residents are increasingly moving to the formerly white suburbs due to violence and unrest in townships and to be near formerly white schools where they believe the quality of education is better and schooling less disrupted. Those who choose to live in townships, daily transport their children to and from former white schools. It is obvious that these trends will also have a major impact on class size.

The above-mentioned data show the enormity of the task that faces educational planners. They also indicate that most of South Africa's learners and their teachers will continue to learn and teach under difficult conditions: large, overcrowded classes and insufficient resources will be the order of the day for a long time to come.

1.2.2 Educational expenditure

In 1998/99, a very large slice of the national budget—of the order of 22%—was allocated to Education (Department of Finance 1998). Economists regard this as the absolute maximum to be allocated to education, and as population growth outstrips economic performance, it is clear that it is not in the near future going to be possible to develop and expand the education system to the extent necessary, and to meet the policy commitments as outlined in the White Paper. This issue is going to result in even more overcrowded classrooms, a growing scarcity of proper resources to create teaching and learning environments conducive to learning, as well as a corps of disillusioned teachers finding it difficult to maintain a high morale and a high level of productivity under these adverse conditions. The different role-players will have to explore ways of making the best possible use of available resources and to use teachers more efficiently and effectively, without sacrificing the quality of education.

At this rather difficult time of educational change, government finds it hard to supply enough physical facilities, resources, and adequate numbers of qualified teachers to a school system in dire need of adequate materials. Vast inequities between the different parts of the system, inherited from the *apartheid* days with funds being allocated along both racial and provincial lines, complicate government's task even

more and need to be addressed as a matter of urgency. Therefore, in order to effect equity in the funding of education, a rightsizing process was started by government. This implies a redistribution of staff between the advantaged and disadvantaged parts of the education system, as well as between the urban and rural parts (Schools Communicator 1996:1), which amounts to the following: a voluntary severance package was offered to all teachers for a limited period, in order to allow teachers who wanted to leave the service to do so, thus creating room for the absorption of staff who are in excess of the envisaged learner-teacher ratio of 40:1 for primary schools and 35:1 for secondary schools. However, the process backfired in a way because more experienced and senior staff than were anticipated left the service, resulting in a sudden dearth of experienced teachers. In the light of the government's implementation of the new national curriculum, Curriculum 2005, since the beginning of 1998, this *brain drain* of qualified and experienced teachers who are needed to promote this new initiative and make it work, could be detrimental to an already problem-stricken schooling system, characterised by overcrowded classes, insufficient resources and inadequately trained teachers. There is also another consequence of the rationalisation process that is already affecting teachers who taught in the former white schools. These teachers were used to teaching relatively small classes but they are now suddenly faced with classes of over 40 learners, which they find rather problematic and difficult to handle due to a lack of skills and experience in teaching large classes.

1.3 SEARCHING FOR A SOLUTION

From the above discussion it is clear that teaching large classes is a reality for most teachers in South Africa, and that owing mainly to demographic and financial constraints, there is no prospect that the situation is going to improve in future. Bishop (1989:74) points out that in developing countries 90% or more of the educational expenditure is spent on teachers' salaries, and that savings can be made by increasing the size of classes taught by teachers. A study carried out in Chile indicated that an increase of 15% in class size reduced the annual education budget by 5% (Bishop 1989:74). Thus, as large classes could allow substantial savings in the

form of teacher salaries, resulting in more money available to provide additional resources for learners, this seems the obvious way to go. In looking at the realities that prevail in South Africa, it is a luxury to have small classes, and not something that any teacher can take for granted. In the revised norms and standards for educators developed by a Committee on Teacher Education Policy (COTEP) it is recognised that teachers play a number of different roles for which they need a range of competences. For example, it is stated explicitly that for their role as leader, administrator and manager, teachers need the competence to *manage* classroom teaching of various kinds in different educational contexts and particularly with *large* and diverse groups, as well as an understanding of the various approaches to the management of classrooms with particular emphasis on *large, under-resourced* and diverse classrooms (Department of Education 2000:17–18).

Without being unsympathetic to those many teachers who work in unfavourable conditions, we must face the fact that teachers cannot wait for the situation to improve or for the government to provide instant solutions. Teachers have a responsibility towards the learners in their classrooms, who, impatient for a better future, cannot afford to wait for the necessary changes in the education system. The question, however, remains: What can be done to empower teachers to teach effectively in classes of about 50 to 80 or more learners, thus eliminating demoralisation and despair amongst them and improving the educational experience for both learner and teacher?

The answer to this question lies in a completely new way of thinking about teaching: teaching large classes successfully will be problematic if teachers and educational planners continue to view traditional teaching methods as the only means of transferring knowledge, and base their idea of the ideal classroom on a model that prescribes an 18:1 learner-teacher ratio. Teachers and educational planners should adopt a spirit of searching for alternatives and start to think innovatively and creatively about teaching large classes. New coping strategies should be tried out, and teachers should refrain from being obsessed by the idea that teaching large classes represents an insurmountable problem. *The bottom line is not whether large class teaching will work, but the fact that there is no alternative—it must be made to work.*

Aspects of teaching that need to change are our views about learning and teaching. In the past teaching was characterised by a focus on the teacher-centred approach where the teacher, as the only source of information, was expected to fill the empty minds of the learners. Characteristic of this approach to teaching were content-driven rote learning methods, which resulted in bored and inactive learners. According to the new South African outcomes-based curriculum, learners are no longer viewed as empty vessels who are only expected to passively absorb information: teaching and learning will have to become learner-centred and learners will have to be viewed as active participants in the teaching-learning situation. The mind-set of teachers who used to focus on teacher-centred methods will have to change, so that they no longer see themselves as depositing knowledge into the empty minds of learners, but rather as facilitators who create opportunities for learners to learn, who guide activity-based learning, and who assist learners to achieve those outcomes necessary to become independent, lifelong learners. According to Bishop (1989:78) the most expensive and overworked strategy and main bottleneck in expanding and improving learning is the traditional teacher-to-learner, face to face, oral instruction. Bishop (1989:78) concluded by saying:

The balance must shift from teaching and instruction to learning. It will be more productive—and less costly—to resort to the cheaper and simpler methods of learning based on improved *motivation* and *hard work* by the student to *learn for himself*.

Once teachers have made this shift, they will find it easier to adapt to a situation where they have to teach the new outcomes-based curriculum in what they may regard as *large* classes.

The new outcomes-based national school curriculum referred to above—Curriculum 2005—was launched by Government on 24 March 1997. It is aimed at preparing learners to be critical, independent and creative thinkers and competent future citizens. Curriculum 2005 has been developed around seven critical outcomes (Curriculum Development Working Group 1996). Critical outcomes are cross-curricular and underpin the teaching-learning process in all its facets. As such they

should guide the development of learning programmes and materials. The critical outcomes are the following:

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made.
- Work effectively with others as a member of a team, group, organisation or community.
- Organise and manage oneself and one's activities responsibly and effectively.
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively using visual, mathematical and language skills in the modes of oral and written presentation.
- Use science and technology effectively and critically, showing responsibility towards the environment and the health of others.
- Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

Five conditions were later added by the South African Qualifications Authority (SAQA). These conditions are sometimes grouped together and regarded as an eighth development outcome. According to the Curriculum Framework for General and Further Education and Training (Curriculum Development Working Group 1996:18)

'it must be the intention underlying any programme of learning to make an individual aware of the importance of:

- reflecting on and exploring a variety of strategies to learn effectively;
- participating as responsible citizens in the life of local, national, and global communities;
- being culturally and aesthetically sensitive across a range of social contexts;
- exploring education and career opportunities;
- developing entrepreneurial abilities'.

The outcomes-based approach to teaching and learning has certain implications for methodology. If we want learners to develop the skills mentioned above, we will

never succeed if we expect them to sit quietly at their desks, waiting to be spoon-fed. Learners must be given opportunities to become actively involved, to read, discuss, reason, investigate and draw conclusions. One way to encourage learners to participate in the teaching situation is to adopt a cooperative approach. According to Van der Horst & McDonald (1997:128) cooperative learning has the potential to help teachers cope with the teaching of large classes. Large classes can be divided into smaller groups of learners, where group members are expected to talk, think and work together with peers to accomplish certain predetermined goals (Bennett 1992:4). This approach can be successfully applied in large classes, especially because the interaction of a variety of ideas, opinions, backgrounds, abilities and attitudes has the potential to stimulate discussion and to develop a learner's capacity to think. One of the aims of outcomes-based education is the development of higher order thinking skills, and according to Brown (1988:56) and Bennett and Dunne (1992:24) the cooperative group is notably suited to develop most of these skills. The skills they list include the following:

- The ability to express a point of view
- Logical reasoning, probing and questioning skills
- The ability to think critically
- Problem solving skills
- The ability to speculate creatively.

In comparing the above-mentioned skills with the critical outcomes listed previously, it seems as if there *are* ways to teach large classes effectively *and* to simultaneously enable learners to achieve the critical outcomes prescribed by Curriculum 2005. In Chapter 5, an attempt is made to suggest strategies to teach large classes effectively.

1.4 STATEMENT OF THE PROBLEM

1.4.1 Background to the problem

The divided, racially biased and ethnically-based education systems of *apartheid* seriously disadvantaged black schools, and it is going to take many years to eradicate the deep-rooted inequalities that exist at the present day.

One of these inequalities pertains to the *unequal funding practices* of *apartheid* education. According to Jarvis, Meek and Shepherd (1996:128), the 1992 *per capita* expenditure on white education was about four times higher than the corresponding figure for black education, which represents a dramatic improvement over previous years when proportions of up to 18:1 were experienced. This unequal funding has resulted in enormous shortages as far as the former black education system is concerned: many districts in all provinces other than the Western and Northern Cape have learner-teacher ratios of over 37:1, and there are many districts in KwaZulu-Natal and the Eastern Cape with ratios of more than 46:1. The former black education system has also suffered from an acute shortage of classrooms. The most disadvantaged areas are the former KwaZulu, Lebowa, Gazankulu and KaNgwane, and in the former Transkei almost all districts have between 48:1 and 100:1 learners per classroom (Education Foundation 1994:2).

The number of learners of school-going age who are not attending school, is another real problem. These learners, estimated to be about 2,5 million in number (Education Foundation 1994:2), will have to be accommodated in an education system already stretched to its limits. To make matters worse, repetition rates are unusually high. Recent research by Crouch & Mabogoane (Reeves 1998:3) indicates that the general repeater rate grew from 13% in Grade 8 in the early 1980's to 22% today. Over the same period the Grade 12 repeater rate rose from 19% to 40%.

Repeating a grade is a great drain on resources, something the S.A. schooling system cannot afford. Crouch (Reeves 1998:3) remarks 'that [t]his is not so much money that is being lost, it is money that is not being used as efficiently and as productively as it

could be.' Classrooms and teachers have to be provided to teach these learners, and this results in overcrowding at schools and extra pressure on already burdened staff and resources. According to the former Minister of Education, Sibusiso Bengu:

Little of educational value is gained by [serial repetition practices]. They result in large numbers of young adults in our schools who ought not to be learning any longer in a school environment. They also result in huge and wasteful costs which we cannot afford, and which we must now begin to reclaim and put to more productive use (Monare 1998:1).

In order to control the phenomenon of serial repeaters, the age requirement and admission policies (Department of Education 1998b) came into effect on 1 January 2000. The policies amount to the following: any learner would be allowed to repeat a year only once in each phase of the school cycle. (School phases are categorised as grades 1 to 3, grades 4 to 6, and grades 7 to 9). Learners who fail a grade more than once will move to the next grade. The Education Department foresees that the assessment policy which requires teachers to assess learners continuously in order to diagnose and address problems at an early stage, will ensure that no learners fail.

In addition to the high repetition rates, it is appropriate to examine the racial inequalities with regard to *teacher qualifications*, and the influence these have on the quality of teachers and teaching in black schools. Many black teachers are poorly trained when compared to their white colleagues. Just over a third of all teachers in South Africa are underqualified, and of these 60% are black and teach in the all-important primary phase (Department of Education 1996:39). The training of those black teachers who are professionally qualified is often built upon an inadequate academic background. Furthermore, certification was in the past awarded after only two years' training (Jarvis 1996:131), and the result is a poorly equipped teacher who lacks adequate subject knowledge as well as the most basic skills needed to teach effectively, let alone being able to teach large classes in an innovative way. White teachers are particularly well qualified, with an M+4 qualification being regarded as the norm.

Against this background of inequality and inadequacy and the effects it has on the quality of education in South African schools, the researcher firmly believes that one of the solutions is to establish conditions under which class size might not matter. For the purpose of this dissertation, one of these conditions is to have properly trained teachers who are able to find and implement innovative ways of dealing with large numbers in the classroom. Teacher competence should be based on effective classroom teaching and learning, rather than higher qualifications.

1.4.2 Formulation of the problem

1.4.2.1 The *purpose of this study* is to suggest *strategies which can be used by teachers in the South African context to teach large classes effectively*¹. Teachers lack essential skills to handle the problems inherent in teaching large classes, and as a result, many teachers in such situations are overcome by passivity and negativity and simply cease to care. The reason is that teacher training and in-service training programmes assume that quality teaching can only take place in small classes, and any departures from this model are seen as a deficient teaching situation.

1.4.2.2 The *research problem* that follows from the above-mentioned statement, reads as follows:

Which strategies can teachers in South African schools use to teach large classes effectively, thus improving the educational experience for both teacher and learner?

1.4.2.3 In order to investigate the research problem adequately, the following *sub-problems* need to be addressed:

a) How is teaching in the South African context affected by the recent changes to the education system, which include rationalisation, restructuring, redistribution of funds in the interest of equity, the envisaged learner:teacher ratio and the introduction of an outcomes-based national curriculum?

This sub-problem will be addressed in Chapter 2, entitled *Teaching in South African secondary schools*.

¹ Secondary schools will be the focus of this dissertation.

b) Which specific instructional and learning problems are caused by teaching large numbers of learners in a classroom?

Chapter 3, entitled *The problem of large class teaching—a literature study* will address this sub-problem.

c) Which specific instructional and learning problems are caused by teaching large numbers of learners in South African schools?

Chapter 4, entitled *Analysis of qualitative research data on large class teaching in South African schools* will investigate this sub-problem.

d) Which specific guidelines could be suggested to implement the strategies identified previously to ensure the effective teaching of large numbers of learners in the classroom?

In Chapter 5 the researcher investigates instructional and learning options for large class teaching. Instructional guidelines suitable for implementation in large classes in the South African context are provided. These guidelines are provided to address the instructional and learning problems identified in Chapters 2, 3 and 4.

1.5 CLARIFICATION OF CONCEPTS

1.5.1 Teaching in the South African context

Teaching can be seen as a task in which a teacher attempts to construct a learning environment conducive to learning. A learning environment consists of many different components (*viz* the teacher, learners, resources, the physical space, the curriculum) that interact in specific ways to create either a positive or a negative learning experience (Lubisi, Parker & Wedekind 1998:75–76). In order to create a positive learning environment, components such as an *adequately* equipped and motivated teacher, *sufficient* stationery, textbooks, and science equipment, *adequate* physical facilities, and a *culture of teaching and learning* are crucial. However, the South African teaching context abounds with examples of learning environments that were damaged during, and still suffer the consequences of, years of struggle.

As far as teaching in a South African context is concerned, there are two vastly different realities, i.e. teaching in black schools and teaching in white schools. As a result of *apartheid* education, the former black education today suffers from severe backlogs (these were highlighted in previous paragraphs). These backlogs make it difficult for teachers to teach effectively and maintain a culture of teaching and learning. Teachers in former black education schools are in most cases under-qualified or unqualified, and are overwhelmed by overcrowded classrooms with large numbers of learners, insufficient resources and physical facilities and the general lack of a culture of learning amongst learners. Many teachers in such conditions become desperate and demoralised, and even committed teachers are defeated. Although some teachers might try to do the best possible job under these difficult circumstances, many teachers generally lose motivation and drive.

One can only look at the low pass rate amongst black learners to realise that teaching in the formerly black education sector is not at all healthy. Donaldson (1992:311) points out that the fact that less than half of the learners who enter school complete standard 8 (grade 10) successfully, is one indication of the poor quality of black primary schooling. Those who get to standard 10 (grade 12), also do not do too well: In 1991 the pass rate amongst black matriculants was 40,8%, as opposed to a 90% pass rate amongst white matriculants. This brings the researcher to the other reality, namely teaching in white schools. In general, white teachers were unaffected by the crisis in black education until 1994. Much more money was spent on white schools, with the result that teachers were then able to teach under conditions which were generally more favourable than the conditions of their black colleagues. Relatively small classes, adequate resources, proper facilities and good results were the order of the day in white schools until 1994.

To summarise: Teaching in a South African context is a rather complex issue, with a large part of the teaching corps having to teach in a system which lacks certain crucial conditions for effective teaching (see introductory paragraph above).

1.5.2 The large class dilemma

Class size² refers to the number of learners in a specific class under the direction of a specific teacher. What is a large class? According to the World Bank (1988:40) a class size of 1:50 is unproblematic. Their research established that, within broad limits—between 25 and 50 learners—changes in class size influence learner achievement modestly or not at all. It is, however, interesting to note that in the South African context, the large numbers of learners in a classroom are seen as a major problem. Morrow (1996:150) remarks:

Many teachers, overwhelmed by despair and cynicism, defeated by the numbers of students they are expected to teach, ...do the absolute minimum, and devote their energies to other pursuits.

This attitude is understandable, especially if the large class dilemma is viewed against the background of the previously well funded and well resourced white education system, where relatively small classes provided the ideal model. Given the World Bank's findings and the general feeling amongst black teachers in particular regarding class size, it seems appropriate to conclude that the size of a class is not a matter of absolute numbers but of *perception*. Class size is most probably a convenient excuse for an assortment of problems, *none of which really depend crucially on class size*. Furthermore, it might be that teachers who find teaching large classes problematic, may perhaps be trying to find a plausible excuse for their reluctance to rethink their teaching strategies. The literature study in Chapter 3 will shed more light on these issues.

1.5.3 Teaching strategies

Teaching strategies can be defined as plans used by teachers to skilfully manage and guide learners in the classroom to become actively involved in acquiring a deep understanding of the learning content, while they simultaneously develop and practise higher-order and critical thinking skills. This implies that teachers should, on the one

² Although a distinction is made in the literature between class size and teacher-learner ratio, it is not important for the purpose of this dissertation. Class size and teacher-learner ratio will be used interchangeably.

hand, possess good management skills. According to Eggen and Kauchak (1996:35), 'it is virtually impossible to be a truly effective teacher without being an effective manager.'

Key factors in effective classroom management are: starting on time, materials prepared in advance, established routines, proper time management and orderly classrooms (Eggen & Kauchak 1996:35). On the other hand, teachers should know how to guide learners, to ensure that they understand what they are learning and to help them develop the necessary thinking skills. This implies that the teacher must be the facilitator who provides the opportunities for learners to learn.

Government policy documents fully support this approach to teaching. According to Government Gazette 15974 (Department of Education 1994:12):

The curriculum and teaching methods should *encourage independent and critical thought, the capacity to question, enquire and reason, to weigh evidence and form judgments, to achieve understanding*, and to recognise the provisional and incomplete nature of most human knowledge. (My emphasis.)

This indicates a significant paradigm shift in terms of the way teaching and learning have been viewed in the past: It emphasises the use of strategies that encourage active learner involvement and de-emphasises passive learners and strategies that encourage rote learning. This is in line with the aims of the new national outcomes-based curriculum for the twenty-first century, Curriculum 2005.

At present, and hopefully the situation is going to change in the light of Government's commitment to quality education, rote learning is still often the order of the day in the majority of our schools, and learners have limited opportunities for problem solving and independent thinking. According to Avalos (1980:49) '[s]urveys of teaching techniques in many third world settings indicate a fairly widespread use of fact-giving techniques emphasising rote learning and minimal student activity.'

For many years the purpose of schooling in South Africa was primarily to teach learners to memorise facts in order to pass examinations, while teachers were applying traditional teacher-centred teaching methods, instead of using learner-centred methods which could reduce their workload. South African teacher training courses do not always prepare teachers adequately to cope with the difficult conditions in South African schools, and do not provide teachers with the kinds of experiences that might help them in their task. This problem of a lack of appropriate teaching skills is exacerbated by large numbers of learners in overcrowded classes. The teacher is sometimes unable to move beyond the chalkboard, and *chalk and talk* seems to be the only methodology to use under these circumstances. *The aim of this dissertation is to suggest teaching strategies for large classes that can be used even though teaching conditions may seem unsatisfactory.*

1.6 METHOD OF INVESTIGATION

1.6.1 Introduction

The most common methods of empirical research are the quantitative and the qualitative methods. According to Cresswell (1994:2) a quantitative study is 'an inquiry into a social or human problem, based on testing a theory composed of variables, measured with numbers and analyzed with statistical procedures, in order to determine whether the predictive generalizations of the theory hold true'. In contrast, he defines a qualitative study as a 'process of understanding a social or human problem, based on building a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting.' Depending on the nature of the research undertaken and the aims of the research, the researcher selects either a quantitative or a qualitative approach (Fraenkel & Wallen 1990:386; Leedy 1997:104). In this instance the researcher has selected the qualitative research approach, since the characteristics of a qualitative approach fit the researcher's aims for this study. The reasons will become clear in the following paragraphs.

1.6.2 Qualitative research

The following characteristics of the qualitative approach have been identified:

1.6.2.1 The natural setting is the direct source of data

According to Bogdan and Biklen (1992:33–35), ‘most qualitative researchers reflect some sort of phenomenological perspective’ and therefore approach people with the desire to try to understand their point of view. Qualitative researchers see their research task as ‘coming to understand and interpret how the various participants in a social setting construct the world around them’ (Glesne & Peshkin 1992:6). Furthermore, since they believe that human behaviour is significantly influenced by the setting in which it occurs, they feel that the best way to understand people and their actions is to observe them *in their setting* (Bogdan & Biklen 1992:30). Qualitative researchers therefore spend much time in a particular setting collecting data, because they are concerned with context. Data that are collected include both verbal (interview comments, documents, field notes) and nonverbal (drawings, photographs, videotapes) data that typify the specific social environment (Leedy 1997:107).

This approach fits in with what the researcher hopes to attain with this study, for the following reason: As far as could be ascertained no in-depth research of note has been done locally on the problems associated with large class teaching. The researcher therefore had to collect information on this issue by visiting classrooms, observing class teaching and classroom management, and interviewing teachers in order to find out how the large class dilemma was experienced by them. The primary aim of the study is to identify and describe problems experienced by teachers (in a specific context) when teaching large numbers of learners (see Chapter 4), and, on the basis of these problems, to develop appropriate strategies to make teaching large classes less labour intensive and more effective in terms of learning effectiveness (see Chapter 5).

1.6.2.2 The researcher is the key instrument

Qualitative researchers are viewed as being the key instruments because data collection in the field is dependent on their personal involvement in the setting, which

entails activities such as observing, watching, experiencing; asking, interviewing, inquiring; and reviewing, document analysis, archival research, examining (LeCompte, Millroy & Preissle 1992:19–29).

The following data collection technique was used in this study:

- Observation

A distinctive feature of observation is to observe individuals or groups in their natural environment over an extended time, and to write extensive field notes to describe what happened or what meanings they ascribe to specific entities such as events, persons, or objects (McMillan 1993:43,406). More information with regard to this aspect of the research appears in Chapter 4.

1.6.2.3 Qualitative research is descriptive

In their search for understanding, qualitative researchers collect data in the form of words or pictures, rather than numbers. The data include interview transcripts, field notes, photographs, videotapes, personal documents, memos and other relevant records. Qualitative researchers ‘try to analyse the data with all of their richness as closely as possible to the form in which they were recorded or transcribed’ and every detail that might lend insight to a situation is acknowledged (Bogden & Biklen 1992:30–31). Finally their findings are presented in the form of words and descriptions that are intended to accurately reflect the situation under study (Leedy 1997:105).

It is the aim of this research to gain insight into the large class dilemma rather than to undertake a statistical analysis.

1.6.2.4 Qualitative researchers tend to analyse data inductively

The objective of qualitative research is not to find data to prove or disprove hypotheses researchers may have held before embarking on a study (Bogden & Biklen 1992:31–32). Qualitative researchers tend to have an attitude of discovery or exploration that leads to discovery, building or enhancing theory, rather than testing it

(Leedy 1997:106). As a result theory emerges from a careful consideration of the data collected *after* having spent time in the field with the subjects (Bogden & Biklen 1992:32; Leedy 1997:107). This 'after-the-fact explanation' is a characteristic of inductive reasoning (Leedy 1997:107). In Chapter 4, the nature of data analysis used in this dissertation is explained in detail.

1.6.3 Literature study

The literature study is an important means of acquiring background knowledge relevant to the research topic and of determining what research has already been done. In this study it provides an overview of existing research, which provides essential background knowledge for the investigation into the life-world of teachers having to deal with large numbers of learners in a classroom. This literature study (see Chapter 3) also identifies serious gaps in the body of knowledge surrounding large class teaching in South Africa. The main reason for this situation is that there is, as yet, no serious tradition of classroom-based research in South Africa (Harley, Bertram & Mattson 1999:153). As a result, questions emerge which are further explored during the empirical enquiry in Chapter 4.

Since a dearth in literature concerning strategies for large class teaching in secondary schools exists both in South Africa and abroad, the focus of the literature study was extended to include literature on the effects of class size on teaching, appropriate teaching strategies for example co-operative teaching, small group teaching, peer tutoring, as well as literature on effective teaching. This fits in with McMillan's remark (1993:113), that '[n]ew or little-researched topics usually require a review of any literature related in some essential way to the problem, to provide the conceptual framework and a rationale for the study.'

A further complication exists in that the literature on the effects of class size on teaching concentrates mainly on teaching at tertiary level. However, this is not regarded as a serious drawback, as these experiences, insights, successes as well as failures can add much to an understanding of the class size problem in secondary schools.

The sources used for the literature study were mainly journal articles, books and newspaper reports.

1.7 FURTHER PROGRAMME

This dissertation is divided into six chapters. Chapter 1, *Introductory orientation*, has sought to sketch the realities with regard to the educational situation in South Africa that have given rise to the large class phenomenon. The point which this chapter has tried to stress is that this phenomenon is a given, and that instead of becoming demoralised, teachers should rather explore creative ways to teach large classes.

Chapter 2, entitled *Teaching in South African schools*, gives an overview of the changes that took place in education due to the new government's commitment to redress past inequalities, and the effects of these changes on the large class phenomenon, both systemic and curricular.

In Chapter 3, entitled *The problem of large class teaching—a literature study*, relevant international and national literature sources are analysed to indicate the variety of instructional and learning problems that are present in the dynamics of teaching and learning in large classes.

In Chapter 4, entitled *Analysis of qualitative research data on large class teaching in a South African secondary school—a case study*, data gathered during classroom visits are analysed to identify the problems experienced by teachers in large classes in South African schools.

Chapter 5, entitled *Strategies for large class teaching*, provides guidelines and strategies to enable teachers to cope with the problems of large class teaching which were identified in Chapter 3.

The final chapter (Chapter 6) *summarises* the major conclusions of the dissertation and makes recommendations for teaching practice, teacher education and training as

well as identifying areas which require further research in the South African context of large class teaching.

In the next chapter educational change in South African schools will be investigated, with a particular focus on emerging teaching problems in South African classrooms. Systemic and curricular problems are identified.

CHAPTER 2

TEACHING IN SOUTH AFRICAN SECONDARY SCHOOLS

2.1 INTRODUCTION

Whenever the phrase the *new South Africa* is raised, thoughts about change, reconstruction and rationalisation immediately come to mind. Due to South Africa's turbulent past, it was to be expected that the introduction of a new political dispensation would provide the democratic government with the opportunity to restructure every sphere of national life, including education and training. As a result, the period since the April 1994 elections has been characterised by a commitment from government to bring about equity by redressing past inequalities, due mainly to racial imbalances in government spending during the *apartheid* era.

South Africa's transition to a democratic and more equal society, together with the rapid changes in the economic and technological sectors both within South Africa and globally, have created an urgent need to restructure the education system so as to bring it in line with the principles of democracy, equality, liberty, justice and global competitiveness. The Ministry of Education is of the opinion that a transformed education system will contribute to the realisation of the vision most South Africans have of a new and transformed society (Department of Education [1998d]:19–30). According to the Curriculum Framework for General and Further Education and Training (Curriculum Development Working Group 1996:5):

The vision for South Africa encompasses a prosperous, truly united, democratic and internationally competitive country with literate, creative and critical citizens, leading productive, self-fulfilled lives in a country free of violence, discrimination and prejudice.

2.2 EDUCATIONAL CHANGE AND THE RECONSTRUCTION OF THE SOUTH AFRICAN EDUCATION SYSTEM

In order to approach educational change and the reconstruction of the South African education system in a holistic way, the researcher will focus firstly on *curriculum change* (*viz* the paradigm shift, from a content-driven approach to teaching and learning, to an outcomes-based approach to teaching and learning), and secondly on *administrative changes with regard to human resources* (*viz* teacher rationalisation and redeployment). These two aspects are relevant with regard to this study because their consequences have a direct impact on the context in which South African teachers have to teach. They will to a large extent determine whether teachers' teaching tasks will be simplified—especially in large classes—or whether matters will only be made worse.

2.2.1 Curriculum change

Curriculum change lies at the heart of government's commitment to transform education and to ensure that all citizens are equipped to meet the challenges of the 21st century. As a result of this commitment and owing also to the changes that have been taking place globally over the past few decades, Curriculum 2005 was implemented. Curriculum 2005 marks a major shift away from the previous content-driven curriculum towards an outcomes-based curriculum. In the past, education was more *content* focused. In outcomes-based education (OBE), however, the focus is on what learners *know* and whether they can *demonstrate* that they are able to *use* the knowledge they have acquired, in real life situations. Outcomes-based curriculum development processes will therefore focus on the intended results of learning (*i e* explicitly stated outcomes) in terms of knowledge, skills and values, rather than the prescription of content to be learnt (Curriculum Development Working Group 1996:17).

In the next paragraph, the reasons for the paradigm shift will be investigated.

2.2.1.1 Reasons for the paradigm shift

The reasons for the paradigm shift in the South African education system can be summarised under one heading: *increasing world complexity*. According to Boschee and Baron (1993:4), our complex post-industrial information age is characterised by new technological inventions, global interconnectedness and societal change. The implications of these phenomena for the education system and more specifically for aspects of the school curriculum, will be discussed below.

- Changes in communication technology (computers, Internet, e-mail, satellites, cellular phones, *et cetera*) have created a global village, and in order for South Africa to become an international role-player, an information-literate, technologically competent workforce is needed. Today's and tomorrow's workers will have to be *adaptable, innovative and capable of continuous, self-directed lifelong learning*. It is clear that the skills needed for the information age are totally different from those needed previously, when schools were designed to produce literate, reliable workers for the industrial age (Spady 1995:32–33). Much of *what* has been taught and learned at schools and *how* it has been taught and learned, has thus become irrelevant. The information age is, furthermore, characterised by an information explosion—huge amounts of books, articles, films, radio and television programmes, as well as ideas expressed on the Internet, are produced every year. Since it is impossible for individuals to know more than the smallest portion of all knowledge available in their discipline, information users need the skills to *locate and access relevant information, to analyse, organise and critically judge its worth, and be able to use it in their life and work*. The last consequence of this exponential growth in information, is that since learners will neither know nor discover everything, they have to be able to *effectively work with others* in order to amplify and enhance their individual efforts (Wragg 1997:10–19).
- The South African society after *apartheid* is undergoing several changes. In order to develop a non-racial, tolerant and democratic society, South Africans are going to need specific skills, for example communication and life skills, and the ability

to be tolerant. Without these skills it will be impossible to promote unity and cultural understanding amongst South African citizens and realise the vision of a transformed society.

Education systems can be transformed by means of a number of different approaches. In order to address the issues discussed above, South Africa has chosen to restructure its education within an outcomes-based paradigm. As a result Curriculum 2005 was developed: an outcomes-based curriculum derived from the nationally agreed critical outcomes that sketch South Africa's vision of a transformed society and the role education has to play in creating it (Department of Education [1998d]:25).

In order to understand the implications of outcomes-based education for the teaching situation, the characteristics of it will be discussed next.

2.2.1.2 South Africa's outcomes-based education system

1. An outcomes-based education system is built mainly around outcomes and competence, and therefore requires that *learning outcomes* (and assessment criteria) be stated explicitly *before* learners start learning so that everyone will know what outcomes have to be achieved in order to be declared *competent*. This shifts the focus from the teacher's monitoring learning to learners directing their own learning by assessing their progress against the predetermined outcomes.

Outcomes:

- can be separated into critical outcomes and specific outcomes. Critical outcomes are generic and cross-curricular and underpin the learning process in all its facets (see page 7 for a list of the critical outcomes). These outcomes clearly reflect the different global demands outlined above. Specific outcomes are context specific and as such they describe the competences which learners have to demonstrate in specific contexts and particular areas of learning (Curriculum Development Working Group 1996:17–19).

- are future-oriented and focus on life-related skills and the learner's life world. The outcomes were chosen with a view to equipping learners with the knowledge, skills and values needed for life long learning in a changing, modern society. The reason why the new education system claims to be a *lifelong* education system, 'comes from a recognition that knowledge and work skills are changing so rapidly in the contemporary world that we constantly need to be re-educated in order to keep pace with the changes' (Lubisi, Parker & Wedekind 1998:67). The guiding vision of Curriculum 2005 is that of thinking, competent future citizens who are able to make their society and the world a better place (Department of Education 1997:1).

2. The role of the teacher is to:

- focus on *facilitating* learning towards the achievement of predetermined outcomes, rather than to focus on presenting knowledge in an authoritarian manner. In outcomes-based education the focus shifts from teaching and instruction to self directed learning, based on improved motivation and hard work by the learner.
- structure the learning process in such a way that it suits each learner's needs, interests and development level. Outcomes-based education is learner-centred, characterised by high expectations of all learners. According to the Curriculum Framework (Curriculum Development Working Group 1996:11)

the development of learning programmes and materials should put learners first, recognising and building on their knowledge and experience, and responding to their needs. Curriculum development processes and delivery of learning content (knowledge, skills, attitudes and values), should take account of the general characteristics, developmental and otherwise, of different groups of learners. Different learning styles and rates of learning need to be acknowledged and accommodated both in the learning situation and in the attainment of qualifications.

- create learning programmes that encourage learners *actively* to take part in the learning process in order to achieve the nationally agreed outcomes. The Curriculum Framework (Curriculum Development Working Group 1996:38) suggests that the focus should be on ‘activity-based learning, with opportunity for learners to explore ideas and approaches to learning and to practise skills.’ As a result much of the teacher’s work will relate to the planning of such activities, rather than to the preparation of detailed notes. A further implication of activity-based learning, is that the traditional class periods will have to be adapted and reorganised so that *all* learners have enough time to practise what they are learning.
- facilitate the learning process by ensuring that instructional design for each learner is an *ongoing process* of observation, reflection and analysis. This means that *assessment* becomes very important (see number 4 below).

3. Learners’ progress is based on their demonstrated achievement.

- Learners are promoted because they can demonstrate that they have mastered the prescribed outcomes and that they are able to *use knowledge* in real life situations, rather than for their ability to *memorise content*.

4. Assessment of learning is an essential element of outcomes-based education.

- Assessment focuses on the development of competence. Competence is understood holistically, and as such concerns itself with whether learners *know* the content of their subjects, whether they can demonstrate *how to do* certain things, and lastly with the learners’ values and attitudes.
- A variety of assessment strategies is used to cater for the learning styles and needs of each learner.

- Assessment of learning is authentic, *i.e* it involves learners in activities that are meaningful and relevant to their lives. Authentic assessment activities look like learning activities rather than traditional tests, and involve higher order thinking skills and the use of a broad range of knowledge. Authentic assessment changes the role of both teachers and learners. It promotes a learner-centred classroom where the teacher's main role is to help learners to take responsibility for their learning and to become accomplished self-evaluators (Hart 1994:9–12).
- Teaching, learning and assessment are inextricably linked (Curriculum Development Working Group 1996:20). Assessment is part of a feedback loop linked to teaching and learning. Feedback from assessment on the one hand provides learners with information to develop a better understanding of where they have gone wrong, and as such, assessment activities serve as teaching tools. It also, on the other hand, provides teachers with information on the effectiveness of methodology and materials so that problems can be diagnosed and remedied before moving on. Thus, assessment is used as a tool not merely to collect data, but also to provide information that could influence further teaching and learning decisions, in that it sets standards which guide these activities.
- The Curriculum Framework (Curriculum Development Working Group 1996:21) sees outcomes-based assessment as operating at three levels in schools, *viz* formal summative assessment, ongoing formal continuous assessment, and ongoing informal formative assessment. The focus on assessment in outcomes-based education has important implications for teaching: In order to assess learners on the three levels prescribed by the Curriculum Framework, teachers will have to change their style of teaching to make provision for ample assessment opportunities. They will also have to make sure that the way they teach matches the way they assess. For instance, if outcomes to be assessed require learners to solve problems, the teacher can't use a teaching method that encourages learners to memorise content.

5. Learners are provided with *time* to realise their full potential.

- Time is managed in such a way by both the learner and the school, that increasing levels of accomplishment are achieved. The Curriculum Framework (Curriculum Development Working Group 1996:19) acknowledges that not all learners learn at the same rate and in the same way, and therefore learners will not all be expected to achieve the learning outcomes at the same time, at the same place or in the same manner. 'Rather, learners should attain them through a wide range of experiences encountered over several grades and in a variety of contexts.' (Curriculum Development Working Group 1996:19).

2.2.1.3 Implications of Curriculum 2005 for educators

Curriculum 2005 is a bold move, and offers exciting challenges to teachers and learners to take charge of their teaching and learning and become citizens who are able to contribute to the reconstruction and development of their societies. It is clear from the discussion on the characteristics of outcomes-based education, that teachers will be required to play certain *roles* and acquire a range of *competences* in order to promote the principles and methods prescribed by Curriculum 2005. These roles and their associated competences are included in the COTEP Norms and Standards for Educators (Department of Education 2000), and they are meant to serve as descriptions of what it means to be a competent educator. The document describes seven different roles an educator is expected to play (Department of Education 2000:13–14):

- Learning mediator
- Interpreter and designer of learning programmes and materials
- Leader, administrator and manager
- Scholar, researcher and lifelong learner
- Community, citizenship and pastoral role
- Assessor
- Learning area/subject/discipline/phase specialist.

If one views the new challenges that face teachers against the background of retrenchments and the resulting high learner-teacher ratios, implementing the new curriculum and being the kind of teachers envisioned by policy documents will not be an easy task. Rees (*Financial Mail* 1997:25) believes that teachers facing classes of forty or more have a major challenge, which she terms *crowd control*. To teach the new curriculum and in particular to do continuous assessment of learners under these conditions, will, she believes, not be an easy task but one that will require strong departmental support.

The National Department of Education's Assessment Policy for Grades R to 9 (Department of Education 1998c) indicates completely new directions with regard to assessment. For example, educators are expected to be involved in continuous assessment (CASS) on a daily basis through the use of a variety of suitable assessment tools and techniques, to provide regular feedback to learners on their progress and achievement and to record cumulative evidence of learner achievement. Furthermore, as far as reporting of progress and achievement is concerned:

[a] report must convey, through the educator's comments, a clear impression of personal knowledge of the learner, summarise achievement and progress, and provide useful feedback to evaluate and improve learning and teaching (Department of Education 1998c:12–13).

Although one can hardly deny the benefits this new assessment policy holds for both learners and teachers, the question remains: How is it going to be implemented in a class of forty or more learners?

In a strong critique of outcomes-based education, Jonathan Jansen outlines ten reasons why 'OBE will [in fact] undermine the already fragile learning environment in schools and classrooms of South Africa' (1997:14). He argues, *inter alia*, that outcomes-based education will place an extra administrative burden on already over-burdened teachers. They will be required to reorganise their teaching, devote more time to assess learner progress against outcomes, maintain comprehensive records of learner progress, and use a variety of assessment strategies to monitor learner progress

(Jansen 1997:17). With an increase in class sizes due to teacher rationalisation (discussed below) and without sufficient support structures, 'OBE enters an environment which directly militates against the conditions for its success' (Jansen 1997:17).

This research aims to provide some guidelines in Chapter 5 to assist teachers of large numbers of learners to develop effective teaching, learning and assessment strategies that strike a balance between the requirements of an outcomes-based curriculum and the contexts in which they have to teach.

In the next part teacher rationalisation and redeployment will be investigated.

2.2.2 Teacher rationalisation and redeployment¹

2.2.2.1 Rationale

The transformation of the education system is characterised by a major shift away from the provision of education for the privileged, to education for *all* South African citizens. Government feels very strongly about providing access to education and training for young and old, men and women and urban and rural people on a lifelong basis. However, transforming education costs money and government has soon realised that if they want to achieve equity in schools in the context of financial constraints, move towards an equitable distribution of educators² and funding as well as manageable and improved class sizes, they would have to look at the rationalisation of the education system (Department of Education 1996:56; Myburgh 1997:34). Government made it clear that no money was available to employ extra teachers, and

¹ At the time of writing this dissertation, the situation with regard to the rationalisation process appears to be unstable.

² Learner:teacher ratios have a direct impact on the number of teachers needed, as well as on the number of classrooms the state should provide. Currently there are approximately 350 000 teachers, which indicates a learner:teacher ratio of 34:1. However, Lemmer (Pretorius & Lemmer, 1998: 111) argues that: "...this [ratio] is seldom realised in practice since teachers are unevenly distributed over racial groups, over urban and rural areas and over the different provinces. Learner-teacher ratios are much higher in schools for black learners". Differing learner:teacher ratios are a clear reflection of the inequities in funding. In the former education departments, the ratios varied from 20:1 to 50:1 or, in some cases, 60:1, with the worst teacher shortages in township, informal settlement and rural schools.

consequently the issue of teacher redeployment and learner:teacher ratios became central.

2.2.2.2 The rationalisation process as proposed in the Education Labour Relations Council resolutions

As a result of government's transformation efforts, events in education since 1995 have been dominated by the redeployment of teachers and the retrenchment of both permanent and temporary teachers. In order to arrive at a rationalisation strategy that suits both government and teacher unions and organisations, several resolutions on rationalisation measures were adopted in the Education Labour Relations Council (ELRC).³ Towards the end of 1995 the ELRC passed, *inter alia*, a new uniform guideline for learner:teacher ratios, namely the *Resolution on new learner:educator ratios for public schools (community, state and state-aided schools)* (Department of Education 1996:56). The government and the ELRC developed a scenario to determine the learner:teacher ratio in state schools that would be affordable for the country. Assuming an average growth rate of 3% for the next ten years, it was decided that the most favourable ratio would be 35:1 in secondary schools and 40:1 in primary schools.⁴ The agreement also stipulates that this guideline be phased in over a maximum period of five years, effective from 1 April 1995. Because this projection is subject to many variables, it will be revised annually (Department of Education 1996:3). Furthermore, the process of phasing in these ratios will be influenced by the annual shifts towards equity in the budget. The situation will therefore vary from province to province, depending on whether it should increase or decrease the numbers of its educators.⁵ Lastly, the learner:teacher ratios will serve as points of departure for the provincial education departments in determining post provisioning scales for institutions, after negotiations with representatives from teacher unions and

³ The ELRC was established in 1995 as a bargaining forum for government, employers and representatives of teacher organisations and unions (Department of Education 1996: 56).

⁴ It is important to note that in practice learner:teacher ratios will be higher than this due to the fact that many teachers, *e g* principals, deputy-principals, heads of departments and librarians are involved in non-teaching activities.

⁵ This implies that learner:teacher ratios will be determined on a provincial basis according to a province's annual budget, which means that each province will negotiate its own ratios. Thus, there will be no centrally agreed ratios for educators, and existing inequities between provinces will only be perpetuated.

organisations. These scales will also vary from province to province and from year to year.

The following steps in the redeployment of teachers and for the trimming of staff numbers in schools were agreed upon:

- Educators could volunteer for a limited-period severance package to allow those who preferred to leave the service to do so, thus facilitating redeployment and creating room for teachers considered *in excess* in terms of the new learner:teacher ratios. Voluntary severance packages (VSP) were not seen as a right and government retained the power to approve or reject applications. Teachers with critical skills, like the teaching of mathematics and science, were not to be given the option of a VSP.
- In respect of redeployment, school right-sizing committees (comprising representatives of the Department of Education, school governance committees, staff members and observers from unions) were to be established to make recommendations to the provincial education departments regarding teachers in excess. It was decided to establish provincial and national redeployment agencies whose task would be to compile databases of teachers in excess and who would have to facilitate teacher transfers. Preferences of excess teachers would have to be taken into account when the deployment process got off the ground.

2.2.2.3 Reaction to the redeployment process

The rationalisation process moved very slowly in 1996, and according to Nxesi (1997:33) there also seemed to be no co-ordination between provinces, with each province seemingly following its own plans. Despite efforts by former National Education Minister Bengu to argue that equity requires redeployment and that redeployment does not mean retrenchment, the redeployment of teachers has drawn severe criticism from several quarters. It led to a considerable amount of confusion and anger amongst educators (Chisholm & Vally 1996:3) and had an adverse effect on teacher morale. In a survey by the Association of Professional Educators in KwaZulu

Natal it was found that *increased workloads* due to longer working hours, *fewer staff* and *large classes* have led to stress amongst teachers that adversely affects their morale (Bot 1999:19).

According to the Department of Education, their intention was never to decrease the number of teachers, but rather to *deploy* them to effect equity. This, according to them, implies moving teachers from overstuffed schools to understuffed schools, instead of hiring additional teachers, thus saving money. However, teacher unions claimed that the *right-sizing* exercise in education had turned into a *down-sizing* exercise, with teacher numbers being reduced rather than teaching posts being redistributed (Motala 1997:9).

What was originally intended as an effort to save the country a lot of money in the long term eventually turned out to be a costly miscalculation, and prompted former National Education Minister Bengu into admitting that voluntary severance packages and redeployment had turned out an expensive failure and needed to be reviewed (Financial Mail 1997:22). It seems as if there was too little emphasis on the redeployment of teachers and too much emphasis on granting severance packages. The cost of severance packages for teachers who did not wish to be redeployed but who opted to leave the profession, was estimated at R1-billion (Alfreds 1997:1). Furthermore, approximately 20 000 state school teachers applied for voluntary retrenchment, while it was expected that only about 7 000 teachers would apply. More than 75% of these applications have been granted, most of them by *long-serving, experienced staff in senior positions*, taking with them important skills and experience at a time when they were desperately needed.

Another serious problem that cropped up was that even in highly disadvantaged schools, teachers were being declared to be in excess. And these were the very schools that were intended to benefit from the rationalisation process (Nxesi 1997:34).

According to the Department of Education (1998a:115), by 2004 the rationalisation and redeployment process should be a thing of the past and provincial funding of educator posts should have stabilised at sustainable levels. Until this process is

complete, teachers' morale will remain undermined by fears that they will be the next to lose their jobs, and this in turn will badly affect the culture of teaching and learning in schools (Mokgalane & Vally 1996:12).

2.3 SYNTHESIS

In the light of government's redeployment and retrenchment of the teaching force and the subsequent rise in learner:teacher ratios, together with the extra demands associated with an outcomes-based approach to teaching, it is clear that South African teachers are faced with a difficult task in their quest to provide quality teaching. In the next chapter, a literature study will be done to investigate the extent of this task and to identify common instructional and learning problems associated with large class teaching, as indicated in both local and international studies.

CHAPTER 3

THE PROBLEM OF LARGE CLASS TEACHING—A LITERATURE STUDY

3.1 INTRODUCTION

The issue of class size has dominated the educational debate in Australia, the United Kingdom and the United States of America in particular, for many years and continues to attract the attention of educators, researchers and educational policymakers (Shapson *et al* 1980; Hallinan 1985; Smith & Glass 1980; Finn & Achilles 1990; Robinson 1990). It seems that educators are convinced that smaller classes are better, while policymakers are of the opinion that reductions in class size are an enormously costly exercise and that they have to be justified on the basis of increased achievement (Smith & Glass 1979:1). At this stage the general consensus with regard to the effects of class size on teaching and learning is that the research findings are contradictory and inconclusive. According to Cahen *et al* (1983:3):

60 years of research on class size have failed to provide conclusive answers to such questions as: Do students learn more in smaller classes? Do reduced class sizes increase the likelihood of positive schooling outcomes? Does instruction improve when teachers work with a smaller number of students? Are smaller classes more enjoyable places for teachers and students to work?

Although there does not seem to be convincing research evidence about the effects of class size on teaching and learning, it would not be correct to draw the conclusion that the teaching of large classes is not as problematic as teachers would like to assume. As indicated in the previous two chapters, the phenomenon of large class teaching and

its associated problems in South African schools is a reality which is not likely to change in the near future, because smaller classes will require funds that are beyond the financial capabilities of the country. Therefore, the research reported in this dissertation is an attempt to look at the class size issue from a different angle: The researcher will try to go beyond the question of *whether* class size has an effect on teaching and learning, and instead will address the question of *how* large classes influence teaching and learning. As a result the focus will be on *problems* associated with large class teaching as well as on innovative *strategies* (see Chapter 5) to improve the effectiveness of teaching and learning.

In the next part of this chapter relevant literature sources will be analysed to indicate the variety of instructional and learning problems that are present in the dynamics of teaching and learning in large classes.

3.2 PROBLEMS WITH LARGE CLASS TEACHING

3.2.1 Definition of large class teaching

An analysis of relevant literature sources to indicate the problems associated with teaching and learning in large classes would not be complete without first examining the question: What is a large class? According to Coleman (1989:12–17) teachers' perceptions of ideal, small and large classes vary considerably and therefore it may be difficult to define *large* in terms of numbers. This corresponds with Nolasco and Arthur's view (1988:4) that teachers who are used to small classes—10 to 15 learners—might experience teaching a group of 20 as quite daunting, while others used to teaching large numbers may be relieved when they have a group of only 40 learners. Cahen *et al* (1983:206) are of the opinion that *large* and *small* are relative concepts, and that some teachers accomplish more than others in any given class size.

Teachers' perceptions on class size are dependent on such factors as the size of the class compared to other classes in the school or area; the relationship between the size of the class and the teacher's experience and training; the subject and the level of schooling; and the teacher's total workload (Coleman 1989:36).

Furthermore, the perception of what constitutes a large class, varies from country to country—what some countries regard as large classes may be considered small compared to class sizes in other countries. In Japan, for example, class sizes are very large by international standards, with classes of 40 to 50 learners being the norm (Lynn 1988:111–113). This does not, however, seem to be problematic for the Japanese. According to research in a Japanese pre-school with large classes, the Japanese believe that they are offering the learners ‘the chance to experience the pleasures and responsibilities of life in a group and thus to become, in Japanese terms, fully human’ (Tobin, Wu & Davidson 1987:549).

In the United States of America classes with 25 to 30 learners are regarded as large and potentially problematic for some teachers (Tomlinson 1989:263), while the same situation applies to the United Kingdom (Blatchford & Mortimore 1994:415). In a survey done by Coughlan (1993:29–31) amongst teachers in the Ciskei (South Africa), it was found that they perceive the large numbers in the classroom—class sizes range from 45 to 109 learners—as the main problem with regard to the teaching profession (poor teachers’ salaries were ranked as the second problem by the same teachers).¹

It is not important whether or not teacher perceptions with regard to large classes differ from the norms set by education officials, or whether or not teachers agree on a specific number of learners to define a large class—what is of more importance, is that many teachers experience large classes as a *major problem which they regard as severely affecting their ability to teach effectively*.

3.2.2 Research on class size

It has to be pointed out that due to a general shortage of literature dealing specifically with the instructional and learning problems that are present in the dynamics of teaching and learning in large classes, this survey will also analyse research done on class size in general, aimed at identifying gaps in knowledge. Furthermore, references

¹ In this survey the focus will mainly be on Canadian, American and British research literature because it is more freely available. However, it has to be kept in mind that there is a vast difference between these ideas of a large class and the South African idea of a large class.

to studies from tertiary and primary institutions will be included to complement the shortage of literature with regard to secondary schools. Both Odden (1990:223) and Tomlinson (1989:265) state that almost no research on class size exists for secondary schools.

As mentioned earlier, the empirical research that has been examining the relationship between class size and achievement since 1895 has produced remarkably conflicting results (Glass *et al* 1982:35–37). In 1978, Glass and Smith undertook an exhaustive and quantitative integration of empirical research on the effects of class size, aimed at settling this issue unambiguously. Their classic work, *Meta-analysis of research on the relationship of class size and achievement* (1978), became the major work around which class size issues have been debated during the 1980's and beyond (Odden 1990:214). They applied meta-analytic techniques to synthesise data *numerically* across studies. This process involved nearly 80 class size studies (conducted between 1900 and 1978) that yielded over 700 class size comparisons on data from nearly 900 000 learners. The authors came to the conclusion 'that reduced class size can be expected to produce increased academic achievement' (1978:iv), and 'the major benefits from reduced class-size are obtained as size is reduced below 20 pupils' (1978:v). What is noteworthy with regard to the Glass and Smith results is that while they noted that smaller classes produced higher achievement levels, they could not provide an explanation as to *why* smaller classes had produced the higher achievement levels.

Instead of settling the argument about class size and achievement, Glass and Smith's massive review was met with criticism and sparked even more controversy. Robinson (1990:82) also summarised a number of empirical studies and arrived at conclusions that partially contradict the Glass and Smith findings:

- Within a range of 23 to 30 learners, class size has little impact on academic achievement of most learners in most subjects above the primary grades.
- The most positive effects of small classes on learning occur in reading and mathematics in the early primary grades.
- Reductions in class size only have small positive effects on achievement, in comparison to many less costly learning interventions and strategies.

When considering the contradictory findings of Robinson and Glass and Smith, it becomes clear that despite numerous research studies it *cannot* be concluded that an increase in class size will necessarily lead to a decrease in the level of academic achievement of learners, and *vice versa*. In a sense this inconclusiveness provides some sort of relief as far as the situation in South Africa is concerned—as a result of the dramatic increase in expenditure on additional teachers, classrooms and resources when class size is decreased, the latter is a scenario the country cannot even contemplate. And since there does not appear to be consensus on whether the additional costs result in better learner achievement, it seems more cost-effective rather to increase class size moderately and then to invest the annual savings in professional development programmes for teachers, to empower them to teach large classes effectively. It has been argued that large classes *do* become detrimental to effective teaching when teachers are *poorly skilled to handle teaching in large classes* (Bishop 1989:27).

Slavin (1989) reviewed a few studies on class size, and concluded that substantial reductions in class size do have modest benefits among young learners. However, he noted that long-term studies indicate that the effects are not necessarily cumulative across grades and may even disappear in later years. Odden (1990:217–224) summarises the controversy by saying that ‘system wide class-size reduction would have little effect on student performance and even if it did, would cost too much money.’ According to him research supports only *targeted* class size reductions, and he therefore recommends that class size in classes with learners achieving below grade level be reduced, to allow for small group or individual tutoring. Furthermore, research results indicate that only when primary school classes are reduced to 1 to 3 learners, can important achievement gains be expected. In South Africa, as in other developing countries, it is impossible to have such small classes. The main task facing government is to give the masses their basic essential right to education, and to transform the system of *élite education* which trained only a small proportion of the school-age population, into a system of *mass education*. In order to achieve this goal with limited financial resources, classes *have* to be large. Of course the large class phenomenon is met with antagonism from teachers at the *chalk-face*, but in Africa it is

better to have large numbers of learners per class than large numbers of learners without educational opportunities.

Based on the research with regard to class size and achievement, the main reason why researchers and teachers argue that achievement is higher in small classes is that the latter provide increased opportunities for individual attention and individualised instruction (Blatchford & Mortimore 1994:423). Pate-Bain *et al* (1992:254) report:

A common benefit cited by teachers in small and regular plus aide classes was that they were better able to individualise instruction. These teachers reported increased monitoring of student behaviour and learning, opportunities for more immediate and more individualised reteaching, more enrichment, more frequent interactions with each child, a better match between each child's ability and the instructional opportunities provided, a more detailed knowledge of each child's needs as a learner, and more time to meet individual learners' needs using a variety of instructional approaches.

Although it might be true that smaller classes present more opportunities for *individual attention* due to a smaller number of learners per teacher, there is no reason why *individualised instruction*—where a variety of instructional strategies is used to cater for differences in learners' needs because it is recognised that individuals learn at different rates and in different ways—cannot be achieved in large classes. As a matter of fact, according to the new outcomes-based curriculum teachers are encouraged to explore a host of alternative instructional methods and approaches in order to cater for the differences in learners' interests, needs and abilities (Lubisi 1998b:4–6), because '[a]ll learners can learn and succeed, but not on the same day in the same way' (Spady & Schlebush 1999:29). One technique that can be used effectively to individualise instruction and provide individual attention to specific learners—especially in the more heterogeneous large class—is peer tutoring. Although peer tutoring has limited use in teaching higher level conceptual skills, there is documented evidence that it can be successful for improving rote skills such as oral reading, spelling words, reading rate, mathematics facts and vocabulary (Foot, Morgan & Shute (Eds) 1990:188). Foot *et al* concluded by saying:

Unlike conventional, teacher-mediated instruction, peer-mediated procedures reduce the problem of unwieldy pupil/teacher ratios and create a more favourable climate for the individualizing of instruction. It supports practices and processes (e.g. students' engagement, academic learning time, etc.), that have been demonstrated to optimize students' academic and social gains. It also supports the integration of students with diverse academic and social abilities within the classroom. Compared with conventional instruction, it directly enlists the naturally existing sources of peer group influence and motivation in direct support of the academic and social goals of the teacher, the classroom, and the school (1990:199).

It is clear from the literature that there *are* cases where learner achievement is higher in smaller classes than in larger classes, but that there are also numerous cases where no obvious differences in achievement could be found. Overall, the findings suggest that the advantages of small classes are limited to those learners who are the most vulnerable, *viz* the very young and those of low ability. These learners require the individual attention only available from a teacher in a small class. Thus it becomes clear why teachers generally are of the opinion that because large classes do not allow scope to realise individualised instruction, learner achievement will inevitably be lower in large classes.

Although early research literature on class size seems to show a link between small classes and improved learning, over time there has been less research and evidence to suggest a link between class size and the quality of education. This is an indication that the class size issue is more complex than is universally accepted, the reason being that there are many factors at work in shaping the context in which a teacher has to work, and class size is but one (Cahen *et al* 1983:201–207). According to Wulff, Nyquist and Abbott (1987:17) large class teaching is a complicated process that is affected by numerous instructional dimensions.

Thus, it is not so much a case of the *number* of learners being the problem, or the *numbers* which directly affect achievement. Perhaps it is time to look beyond the size variable, to the *classroom processes* that are present in the context of large classes, in an effort to find the key to this elusive issue. What matters is not the *size* of the class

but *what goes on* in the class. This issue is dealt with in the ensuing section. In the South African teaching context this is a vital issue—there is a need to restore a culture of teaching and learning in schools, to promote ethical conduct and professional discipline amongst educators, and to empower them to do their work effectively through their development of a range of practical, foundational and reflexive competences that encompass knowledge, skills, attitudes and values (Department of Education 2000:10).

3.2.3 Research on the relationship between class size and classroom processes

In a second meta-analysis, Smith and Glass (1979) examined the relationship of class size to teaching processes, teacher satisfaction and learner attitude. While less research has been done in each of these areas than in the area of class size and achievement, the relationship of class size to teacher satisfaction appeared to be very strong—teacher satisfaction or morale dropped dramatically as class size increased (Smith & Glass 1979:45–46). When both teacher and learners feel satisfied with what happens in the classroom, a positive climate characterised by high morale develops. However, when both teacher and learners feel threatened, under stress or overburdened, the classroom climate becomes negative (Myers & Myers 1990:94–99). Teacher satisfaction usually increases when the learners are well-behaved and the teacher feels that learners are learning effectively. If learners can satisfy their learning needs and experience the pleasure of success they will behave themselves and make it easy for the teacher to manage the teaching-learning situation. On the other hand, misbehaviour, very often a feature of large classes, may be a signal that learners are not learning effectively. This inevitably results in feelings of inadequacy to manage the teaching-learning situation, and a drop in teacher morale. Perhaps it is time that, instead of becoming despondent and demoralised, teachers start to reflect critically upon their teaching practices in order to find the reasons why learners are misbehaving and not learning effectively. It might be possible, for example, that the problems are due to a lack of proper lesson planning on the teacher's side, or to the use of outdated measures of disciplining learners. Reflective teachers are prepared to reflect critically and creatively upon their teaching practice in order to make sense of their instructional

and classroom management practices, and are sufficiently flexible and confident to make changes if need be. Although they are critical of new practices, they don't simply accept or reject new practices without first thinking about them, trying them out and deciding whether they will benefit their learners.

As far as the relationship of class size to classroom or teaching processes is concerned, Glass and Smith (1979:45–46) found that as class size decreased, an increase was observed in learner participation, quality of instruction and individualisation of instruction. These class size effects were most conspicuous for learners 12 years and under, and least apparent for learners 18 years or over. Thus, it seems as if secondary school learners—12 to 18 years of age—are less affected by class size than primary school learners. The reason could be that more mature learners are better able to work on their own, and are less dependent on the constant guidance of the teacher.

Cahen *et al* (1983) conducted a field study of intensive case studies in four primary classrooms in the United States of America to examine the effects of class size on classroom practice. In order to understand how the same teachers and learners responded to different class size conditions, Cahen *et al* reduced class size in the middle of the year by one third. In effect, each classroom became a case study of *larger* versus *smaller* class-size comparisons (Cahen *et al* 1983:4). The class sizes ranged from 13 to 22 learners per teacher in the small classes to not more than 30 learners per teacher in the larger classes—a totally different situation from South Africa, where the figure of 30 learners per class is regarded as relatively small. Cahen *et al* organised their conclusions about how small classes changed teacher actions into three areas, *viz* behaviour management, individualisation, and the curriculum (Cahen *et al* 1983:202–206).

Behaviour management

- In smaller classes there is more learner-teacher contact during seatwork—learners have to wait for shorter periods to receive help or have their books checked. As a result of immediate feedback on performance, learner attention rates are higher, they are better motivated and more engaged in learning activities. On the other

hand, most learners in larger classes have less frequent contact with the teacher and are away from her watchful eye, with the result that attention rates drop and that it becomes difficult to involve learners in class work. Teachers also expressed concern about control and discipline, and felt that in large classes they have to devote more time to *policing* instead of *teaching*. This concern of teachers about *being in control* and *teaching learners most of the time* is characteristic of the old teaching paradigm that also used to be part and parcel of teaching in South African schools. However, in order to teach in an outcomes-based way and simultaneously address the discipline problems that might arise in large classes, teachers must give learners the opportunity to work independently, and in the process, to experience success and become motivated, well-behaved learners. By using *independence strategies* rather than focussing on *control strategies* where the teacher has to control the learning and the learners most of the time, teachers might find that discipline problems are reduced to a great extent. A further benefit of independence strategies is that they foster a *deep approach* to learning, the latter being an important outcome of outcomes-based teaching. Learners who use a deep approach to learning are personally involved in the task at hand, and actively seeking to discover some underlying meaning and points of connection between the immediate task and other tasks or contexts. In contrast, learners using the *surface approach* to learning are dependent on the teacher to teach them content, and only want to memorise unrelated facts in order to pass some assessment hurdle (Johnston 1998:2).

Individualisation

- The teachers were of the opinion that smaller classes provide more opportunities to know the needs of individual learners better and to meet these needs on a daily basis. Learners received more individual attention, including help, feedback, encouragement, counselling and monitoring. However, the researchers noted that although teachers expressed a concern for individual needs and felt confident that they could use more individualised instruction in smaller classes to remedy the situation, little changed with regard to their mode of instruction. One can now ask what the reason for this obvious lack of variety of instruction is: is it merely a case of teachers not knowing *when* and *how* to use different teaching strategies such as

individualised instruction, or is it that teachers are so set in their ways that they refuse to change? The answer perhaps lies in the fact that it involves considerable planning and requires very capable and well-organised teachers to tailor the learning environment and teaching strategies to the needs of individual learners. And according to Bishop (1986:164), most teachers in developing countries—of which South Africa is one—often not very well qualified and consequently lacking in confidence, would have difficulty with such a teaching-learning strategy, especially in circumstances where classes are large. Extensive teacher training and ongoing support is essential to ensure that this strategy is implemented successfully.

Curriculum

- It was found that whole class instruction remained the dominant *form* of instruction regardless of class size, and the *content* of instruction continued to be determined primarily by textbooks. So, irrespective of class size, teachers seem to prefer the traditional, teacher-centred and textbook bound approach (perhaps because they lack adequate subject knowledge), and by doing this, they discourage the development of research skills and skills to work independently. What teachers often don't realise, is that with some extra effort and proper planning, they can make their teaching task—especially in large classes—much less complex if they utilise the learner-centred approach where use is made of group work and teamwork to encourage learners to *find out for themselves* and *work independently*, an important step toward their learning how to learn. Furthermore, group work can relieve the teacher of a large amount of correction of written work, since the corrected work of one group member can serve as a model for the others.

In their research in which they suggest that classroom pedagogical practices mediate the effects of class size on learning, Hallinan and Sorensen (1985:74-76) argue that class size is directly related to both quality and length of instruction and go on to identify a number of ways in which class size can affect these two aspects:

Length of instruction

- In large classes teachers spend a lot of valuable instructional time on administrative and organisational tasks, *viz* keeping records, distributing materials and collecting assignments. These tasks *will* occupy a lot of time—even in small classes—if teachers don't establish and maintain proper routines to handle common activities, *viz* starting and ending class, distributing hand-outs and materials, moving students into groups and collecting and handing out books or assignments. Once learners are familiar with these routines, the teacher can initiate them quickly and learners will carry them out automatically, thus saving time.
- If one assumes that every learner has some probability of misbehaving during a school day, more discipline problems are likely to arise in large classes than in smaller ones, thus increasing the amount of time teachers have to spend controlling learners. This might be a real problem, but something can be done to solve the problem: as control of behaviour is one of the requirements for creating an environment conducive to teaching and learning, simple rules for classroom behaviour that are clearly communicated to learners and applied consistently, are essential to ensure that disruptive behaviour is stopped before it escalates.
- Teachers tend to make more use of ability grouping in large classes due to greater heterogeneity of larger classes. Although grouping learners for instruction is believed to be more effective than whole class instruction because teaching can be directed to learners' ability levels, it also significantly reduces the amount of time each learner is exposed to direct teacher instruction. Furthermore, when the teacher is working with one group, the other learners are usually given seatwork. If low-ability learners are not self-directed in their learning styles, it might happen that they are less attentive to seatwork and cause discipline problems that have to be solved by the teacher. This once again highlights the importance of using *independence strategies* to equip and motivate learners to become independent learners. Examples of such strategies are peer assessment, self assessment, the development of learners' research skills, and the development of skills to work independently in a group (Van der Horst & McDonald 1997:78–79).

Quality of instruction

- To reduce learner inattention and ensure that all learners are engaged in learning requires proper planning by teachers as well as high levels of energy. If teachers have to utilise their energy for organisational tasks and to control learner behaviour, fewer physiological and psychological resources are left for quality instruction. Therefore, according to Hallinan and Sorensen (1985:76), in larger classes, teachers are likely to have less energy and this situation results in lower quality instruction than in smaller classes. Without being insensitive with regard to the effort it takes to teach large classes, one is tempted to think that improper planning and a lack of skills to handle large classes might be the problem, rather than the large classes.
- Class size may also affect the quality of instruction by limiting teacher-learner interaction during and outside instructional time. These curriculum-related interactions, for example praise, encouragement, correction of mistakes and refocusing learners on the learning task, help learners to maintain involvement in the learning task, thus promoting learning. If these interactions are reduced due to large classes, a decrease in the quality of instruction results (Hallinan & Sorensen 1985:76). Teacher-learner interactions *outside* instructional time serve to motivate learners and encourage positive attitudes towards schooling. The larger the class, however, the less time is available for informal teacher-learner interactions that indirectly promote learning.

In another study, 63 fifth grade teachers in Australian primary schools were observed during a school term to examine the relationships between class size, teaching practices and learner achievement (Bourke 1986). It is interesting to note that the classes ranged from 12 to 33 learners per teacher, which is small compared to the ratios in South African schools. Bourke's findings with regard to the teaching practice variables were grouped into the following five areas (1986:566–567):

Class grouping

- The extent to which teachers used individualised instruction was not related to class size: instead, whole-class instruction and grouping within the classroom

were related to class size. Teachers more often used whole-class instruction in smaller classes and found that learner achievement was higher. On the other hand, teachers of larger classes tended to make more use of co-operative learning and the result was lower achievement rates. It is not clear from the research why co-operative learning resulted in lower achievement. It could be that teachers didn't adhere to the principles of sound co-operative learning—it can't be taken for granted that teachers know how to implement co-operative learning effectively, and therefore training in this area should be seen as a priority. Often a common problem is a lack of proper planning which results in teachers having to use and consequently reduce valuable teaching time to repeat instructions and explanations for different groups of learners.

Teacher-learner interactions

- Larger classes required more management than smaller classes. Learners' frequent requests for clarification of issues of a non-academic nature reduced the overall teaching time and did not assist learning. One often hears teachers saying *we don't have time*, especially when they are required to try out new ideas or work with groups in classes which are large and difficult to manage. According to South African teachers (Adler *et al* 2000:8), working in more than one language takes extra time because teachers and learners have to use learners' home language together with English to rephrase instructions or to explain difficult ideas and concepts. Also, because many learners' background knowledge is poor or almost non-existent, teachers find that they are forced to go back to the work of earlier grades in order to teach new concepts, with the result that little time in the fixed class period is left for the new work. The idea of *notional* time is one way of addressing the time problem (Department of Education [1998c]:23–26). In the new outcomes-based paradigm, *notional* time is very important. According to the *Concise Oxford Dictionary* (Sykes 1976:746), the word means 'imaginary' or 'existing only in thought'. Thus, *notional* time is not fixed or set, which means that its introduction to the daily or weekly time-table brings a greater element of flexibility so that learning is less compartmentalised and rigid. Time is seen as a *flexible* resource that can be used to help every learner realise his/her full potential, rather than thinking of time as a *fixed* and *inflexible* barrier that should determine

whether or not learners get the learning help they need (Spady & Schlebusch 1999:34–35). The kind of learning promoted by Curriculum 2005—developing competence as opposed to memorising content—takes time, and it takes different learners different amounts of time. Moreover, activity-based learning—also advocated by the new curriculum—can't be fitted into thirty minute periods. A time-table which is notional must allow learners enough time to practise what they are learning and the opportunity to continue with an activity until it is completed to everyone's satisfaction. It must also be flexible enough to allow those learners who demonstrate competence quickly to move on to more challenging activities (Department of Education [1998d]:29). Introducing a notional element to timetables demands important *organisational changes* in schools, and will not work in schools where teachers prefer to work in isolation and often in competition. However, where a collaborative culture exists and where all teachers work together to help learners realise their full potential, it becomes easier to negotiate the appropriate use of time that is not time-tabled (Department of Education [1998c]:25).

Teacher-questioning behaviour

- As teachers in smaller classes spent less time on classroom management, more time was available to ask probing questions and to provide for *wait* time after asking questions, both behaviours shown to be linked to higher achievement by earlier research (Odden 1990:219). The opposite seemed to be true in large classes—a practice which could hamper effective teaching. Oral questions are a fundamental teaching tool and serve to develop critical thinking skills in learners. It is therefore imperative that teachers should become familiar with the different types of oral questions and their functions, and use these effectively to enhance learning. Teachers often tend to overuse *lower-order* questions and only require learners to recall and repeat content, facts and definitions from memory. Although it is important that learners should memorise a certain amount of fundamental knowledge that serves as scaffolding for the development of higher-order thinking skills, good outcomes-based teachers focus more on *higher-order* questions. The latter direct learners to rephrase information in their own words to demonstrate understanding (comprehension questions), apply knowledge and understanding to

new situations and use it to solve problems (application questions), determine the parts of a problem, solution or idea and show how they are related (analysis questions), be creative by putting a number of ideas together in a way which is unique and new to them (synthesis questions), and use criteria to make and justify judgements about something (evaluation questions) (Kissock & Iyortsuun 1982:74–75). Another type of oral question designed to increase the quantity and quality of learner participation, is the *probing* question. Probing questions prompt the learner to expand on his or her initial answer by providing more support, to be more accurate and offer greater originality (Sadker & Sadker 1986:174). According to Bourke's findings (1986), another important concept in oral questioning that was neglected by teachers of large classes due to a lack of time, is the concept of *wait time*. Wait time is the amount of time the teacher waits—usually only *one second*—after asking a question before a learner responds or the teacher comments or asks another question (Kissock & Iyortsuun 1982:112). This is too short a time if learners are to think through the question and formulate a response. Simply by increasing wait time, a teacher can bring about significant changes in the quantity and the quality of learner response—more complex answers and more relevant questions can be expected from the learners. Increased wait time also promotes thinking, improves discipline because learners are intellectually occupied, and helps to increase learners' attention (Van der Horst & McDonald 1997:216).

Homework practices

- It was found that learners in smaller classes were given more homework because it is easier and less time consuming for teachers to correct a small number of homework assignments. The function of homework is to reinforce and supplement school learning experiences by giving learners the opportunity to practice and apply what has been taught in the class. Homework also fosters learner initiative, independence and responsibility (LaConte & Doyle 1985:13–14), three of the critical outcomes on which Curriculum 2005 is based. Seeing that it is also an important element of the teacher's ongoing monitoring and assessment of student learning, teachers should assign homework on a regular basis and ensure that it is consistently done, even in large classes. Often, learners

in large classes are not assigned homework regularly because teachers tend to think that every piece of work has to be *handed in* and *marked by the teacher*, and they hardly ever have time to do this. However, it is possible to use peer or self assessment from time to time for the marking of homework in large classes, thus ensuring that learners are given homework according to their *needs* rather than according to the teacher's available *time*.

Noise levels in classrooms

- Noise levels were found to vary considerably in the classes studied, 'apparently depending upon the nature of the activities being undertaken, the tolerance of the teacher for noise, and on class size' (Bourke 1986:567). High noise levels don't necessarily have to be an indication of chaos and bad classroom management. The introduction of outcomes-based education results in more activity-based classrooms, which usually leads to a *busy noise*. In this regard a clear distinction can be made between work orientated and learning orientated classrooms. Work orientated classrooms are characterised by learners being directed by a teacher who values *production*, and such classrooms are likely to be orderly and quiet like a well-oiled machine. Learning orientated classrooms, on the other hand, are those in which learners are encouraged—rather than directed—to take responsibility for their own learning, by a teacher who values *learning*. A learning orientated classroom is a beehive of activity, and likely to be noisy because communication is a key element in this type of classroom (McCowan, Driscoll & Roop 1996:57). It is, however, necessary that the teacher should ensure that learner talk and activity is constructive and doesn't get out of hand.

In yet another study that focused on classroom processes such as the above-mentioned, Shapson *et al* (1980), examined experimentally the differences between four class sizes ranging from 16 to 37 learners. The study investigated the effects of class size on teachers' expectations about the effects of class size, the attitudes and opinions of participants, learner achievement, and a variety of classroom process variables, e.g. teacher-learner interaction, learner participation and method of instruction. The findings, however, were mixed, with most being negative. Teachers initially expected smaller classes to offer more opportunities for individualised

programs, individual attention and better rapport with learners, and later stated that their expectations were confirmed. They also reported that they had made changes directly related to class size with regard to classroom management, physical layout and learner evaluation (Shapson *et al* 1980:145–155). However, the study pointed out that most teachers failed to exploit the alleged opportunities available in smaller classes. They (1980:150) remark:

The observation of classroom process variables revealed very few effects of class size. Class size did not affect the amount of time teachers spent talking about course content or classroom routines. Nor did it affect the choice of audience for teachers' verbal interactions; that is, when they changed class sizes, teachers did not alter the proportion of time spent interacting with the whole class, with groups, or with individual pupils. ... In fact, further observational data indicated virtually no changes in methods of instruction used by teachers in the different class sizes.

In another study Kumar (1992:29–47) compared classroom interaction data from traditional teacher-centred English classes with data from activity-based English classes of different sizes, in terms of the opportunities made available to learners to interact meaningfully. The aim was to explore whether it was class size that made a difference in the language learning opportunities made available to learners, or whether the crucial variable could be the teacher's choice of the teaching-learning activities being carried out (Kumar 1992:32). With this aim in mind, a small class with 25 learners and a large class with 45 learners at the middle school level, *i e* the sixth to the ninth year in the Indian school system, were observed. *It was found that classroom interaction and learner participation were not influenced by class size per se, but by the nature of the teaching-learning activities selected by the teacher* (Kumar 1992:44–45). This correlates with previous studies (see the studies by Cahen *et al* and Shapson *et al* above) and seems to imply that teachers are not necessarily correct when they maintain that teaching large classes is problematic, in the sense that it limits the possibilities of meaningful teacher-learner interaction. No doubt smaller classes are less problematic in terms of the greater ease with which a teacher can provide for individualisation, control a class or ensure learner involvement. However, this study clearly indicates that it is possible to provide opportunities for learner interaction even

in large classes. What is of crucial importance is the effort and kind of activities that the teacher introduces into the teaching-learning situation.

At this stage it is important to point out that a recurring theme in this study is the optimising of learner participation—the latter being an important part of active learning. In a large class it is easy for learners to assume a passive role, merely *absorbing* what is conveyed in the lesson. However, they are more likely to *understand* and *remember* what was taught when they have been active participants in the discovery process and can thus claim ownership of the material (Penn State ID 1992:1–4).

It is clear from the literature surveyed so far that for the past hundred years the focus of class size research has been mainly on the effect of class size on achievement, and to a lesser degree, on classroom processes. Furthermore, a literature search on the actual *problems* associated with teaching large classes reveals that very little research has been done in this regard. In the next few paragraphs the focus will be on studies done to identify *problems* with regard to large class teaching.

The difficulties experienced by British teachers in introducing communicative techniques in Moroccan secondary classrooms with classes of forty or more learners, led to an examination by Nolasco and Arthur (1986) of the problem of innovation and of introducing new ideas and techniques in English language teaching. Their aim was to find out why teachers were unwilling to implement methodological changes in large classes, which the authors knew from experience would work.

The authors identified the following objections to the introduction of new techniques raised by teachers and analysed these to see if they could offer any solutions (Nolasco & Arthur 1986:102–104):

The learners are not interested when teachers try out new techniques they are unfamiliar with

- Nolasco and Arthur (1986:102) assume that these new techniques did not match the learners' expectations. Evidence from watching lessons and talking to teachers

suggested that Moroccan learners expected the teacher to be an authority figure, and the teaching methods to conform to the lock-step style of teaching. This type of teaching encourages the assumptions that it is the teacher who initiates interaction, and that the learner's only task is to respond to the teacher, who in turn will judge whether the learner's response is acceptable. By introducing new techniques, for example pair or group work, the learner's security and sense of order found in familiar routines in which they know their status and role, are being threatened, and as a result they reject all new ideas and complain that teachers are not teaching.

Discipline is a problem

- Teachers had a strong feeling that chaos erupted as soon as the teacher moved away from an up-front position. They would therefore avoid new techniques and rather use up-front lock-step teaching, because, according to them, these techniques were the only sources of discipline, control and order. The problem of behaviour management in large classes was also identified by other researchers (see Bourke (1986), Cahen *et al* (1983) and Glass & Smith (1979) above).

There are too many physical constraints

- Heavy desks (in some cases fixed to the floor), bad acoustics, large and cold classrooms (often without electricity) with only a chalkboard adorning the walls, were seen by teachers as hampering their efforts to introduce innovative teaching techniques. Although these physical constraints in the learning environment can be detrimental to the realisation of learning outcomes, they are not all-powerful (Van der Horst & McDonald 1997:97). The variety of teaching techniques to overcome these constraints is limited only by the willingness of the teacher to innovate and experiment with different techniques in order to find those that suit her context, and teaching style as well as the needs of the learners.

Moroccan headmasters do not like the noise when all the learners talk at the same time

- According to Nolasco and Arthur (1986:103) headmasters did *not* in fact complain or interfere with teachers who used more communicative methods which were

perceived as successful by their learners. Teachers actually have a great deal of autonomy in their classrooms.

Nolasco and Arthur (1986:105) came to the conclusion that although it is sometimes common practice to regard teachers as the source of resistance to change, learners may also be unwilling to accept changes especially if these changes do not match their needs and expectations with regard to teaching. They therefore suggest that teachers take account of learner expectations and needs when introducing change, and that the introduction of change should also include an element of learner training.

In Nolasco and Arthur's book *Large classes* (1988) they added a number of management problems teachers might experience in large classes, for example coping with the noise, managing the introduction and setting up of activities, making limited resources go a long way, and lastly, monitoring the work of individuals within the class. They concluded by saying that while many of these problems are real enough for teachers, they prefer to see them as challenges rather than impediments to action (1988:5). The rest of their book is then devoted to solutions to overcome these problems. (This will be dealt with in Chapter 5.)

In his article on the teaching of English in large classes, Long (1977) considers four aspects of classroom teaching, viz the classroom environment, individual differences, opportunities for individual participation, and resources for learning. He then identifies several problems with regard to each of these aspects. Although some problems have also been addressed by Nolasco and Arthur above, there are a few additional ones worth mentioning. Long (1977:41) argues that in large classes there is a wide range of differences in intelligence and aptitude, in mental age and interest, in personality, and in individual learning styles, and that these differences have serious implications for the methodology of teaching. Teachers who ignore these differences and use the same teaching approach, method and materials for all learners, are not meeting the learning needs of their learners. Another serious problem that teachers of *English* have to solve, is the lack of time and opportunities for individual learners in large classes to learn to speak the language. In order to increase learner talking-time teachers have to explore the possibilities of peer tutoring and group work. The last

problem that is highlighted by the author is the problem of adequate resources to teach effectively and to enable learners to work without constant supervision. Resources are fundamental to learning, therefore it is important that teachers who have to cope with inadequate resources—especially in large classes—receive training in how to optimally use the basic resources they have at their disposal, for example chalkboards, textbooks and exercise books (Adler 2000:8).

Campbell (1982:13–14) did a short study on the effects of large classes on the personal and social development of learners, and came to the following interesting conclusions:

- The greater sense of crowding, the lack of personal space and higher noise levels in large classes might generate in some learners a sense of over-stimulation, stress and feelings of anxiety. This could lead to a greater tendency to become aggressive and withdrawn, which in turn could result in less time being spent on *on-task* behaviour or academically engaged time. Another factor that could cause off-task behaviour in large classes is the time learners will have to spend waiting—waiting for materials to be handed out, waiting on other learners to complete tasks before the teacher moves on to a new one, and waiting for the attention of the teacher. Assuming that on-task behaviour is an important predictor of learning and achievement, he concluded that more could be expected to be learnt in small classes. The issues of *waiting* and *off-task behaviour* are especially real in the outcomes-based classroom, where the belief that not all learners learn equally fast or in the same way might result in waiting and off-task behaviour in the case of faster learners. In order to eliminate this type of behaviour, teachers should plan extra enrichment activities for the brighter learners to ensure that they are not inactive, and also ensure that slower learners are not left behind.

Although the phenomenon of large classes has been a reality for a large number of South African teachers for a very long time, only *a limited amount of material focusing on this issue has so far been produced*. In a literature survey on large class teaching and learner achievement commissioned by the Joint Education Trust [1997] with the aim of informing national and provincial education departments with regard

to teacher development policy and planning, the compilers remark that much of the available literature 'is discursive and argumentative, rather than grounded in empirical research' (1997:61).

One of the few South African studies of note is the investigation by Thirion (1987) into a strategy for teaching history in large classes in black education. He used questionnaires to identify a wide range of problems with regard to history teaching in township schools, which include, *inter alia*, problems with inadequate facilities and resources, teaching strategies, assessment, learner motivation, classroom atmosphere, and interaction between learners and teacher. An important finding is that most black teachers restrict learner interaction and activity and focus on using the narrative method in order to make their task of controlling learners easier.

In 1993 Alfery and Murray (1994) undertook research into small group management techniques in English second language classes in former Bophuthatswana schools. They concluded that teachers don't seem to recognise the role of learner interaction in group work. Although they would organise learners into groups, the lesson would proceed in transmission mode with the teacher dominating and controlling the teaching process from the front of the class (Alfers & Murray 1994:38). Teachers expressed reluctance to use group work, firstly because it demanded a great deal of time which they didn't have due to lengthy syllabi that have to be completed. Secondly teachers complained that learners are noisy during group work and this disturbs colleagues and other learners, and lastly that learners speak their first language instead of English and this hampers their acquisition of English (Alfers & Murray 1994:39). The issues, *viz* a lack of skills and time to implement group work and noise levels during group work, also surfaced in some research studies mentioned previously, and once again highlight the serious need for careful training of teachers in the use of different teaching strategies.

Tertiary institutions world wide, like primary and secondary schools, also have to cope with rising student numbers due to budgetary constraints. According to Weimer (1987:1) large classes in tertiary education are so cost effective that the temptation to increase student enrolments has great appeal to administrators. Of great concern,

however, is the question whether the primary goal of higher education, *viz* to produce independent, self-directed, lifelong learners, is easily achievable in large classes, which may range from one hundred to five hundred students (Knapper 1987:5). When looking at the literature, it becomes clear that although teaching large classes is seen as one of the most challenging of all academic experiences, faculties *do* think it is possible to adapt teaching techniques that work well in small classes to fit the large class context (Gilbert 1995; Long 1977; Papo 1998; Weimer 1987). It was therefore to be expected that a literature search on large class teaching would also yield a number of articles and books directed at lecturers in higher education. Although there are vast differences between tertiary and secondary education as far as context and learners are concerned, they share the same goal, *viz* to produce independent, self-directed, lifelong learners—one of the key principles of outcomes-based education. Consequently it is important to take note of findings with regard to large class teaching in tertiary education to inform practice in secondary schools.

Habeshaw, Gibbs and Habeshaw (1992) wrote a book in an effort to help staff in British higher education to maintain the quality of teaching under difficult and stressful circumstances. They identified *fifty three* problems staff might face when teaching large classes. They made the problem the focus of each of the fifty three items in the book before offering solutions. Although not all of these problems are applicable to the secondary school context and some others are a duplication of what has already been reported in this study so far, the following are worth mentioning:

Students don't get the individual help they need (1992:39)

- Students have different needs with regard to individual help. In small classes it is relatively simple to know students' needs and to respond to these flexibly. In large classes there are more students who need help, which makes it more complex to identify student needs for individual help and to respond to these needs. This issue seems to be a common problem in large class teaching, no matter whether it concerns secondary learners or tertiary students. Although large classes seem to leave little opportunity to practice the *principle of individualising*, the dedicated teacher will find ways to help each individual learner to develop according to his abilities. Once a teacher has an idea of the various abilities of her learners, *ability*

grouping can be used *occasionally* to separate fast, average and slow learners, and teaching can then be directed to learners' specific needs. At other times grouping can be less conspicuous and more flexible, with the teacher moving about the class while learners are busy with a project, providing extra explanation to a slow learner and stimulating a fast learner with some form of enrichment.

Students don't feel valued (1992:45)

- Students in large groups often feel that staff don't care what they think or who they are. It is difficult for them to have the feeling that they matter because they are only one of many students in a group who lay claim to the lecturer's attention. One of the challenges of large class teaching is overcoming the anonymity and distance that can exist between teacher and learners. If learners are *actively involved* in and feel personal *accountability* for the learning process, they *must* become more than anonymous onlookers and passive recipients of information. In order to facilitate discussion, feedback and active learning, teachers of large classes will have to create the kind of group identity and individual rapport that make smaller classes effective and enjoyable (Penn State ID 1992:2).

Students lack group work skills (1992:101)

- It is important to prepare students for group work and to help them to develop the skills of working together, sharing tasks and supporting and trusting one another. If students have never worked in groups, tutors need to monitor their progress, and if something goes wrong, should help them to remedy the problem. Earlier on, the importance of teacher training in the use of group work skills was pointed out. It is, however, equally important to help learners to develop the skills to work effectively with others in a team or group—one of the critical outcomes of Curriculum 2005. Learners need to be able to contribute worthwhile ideas, carry out instructions carefully, organise time and priorities effectively and remain on task, listen while a peer is expressing his point of view, show tolerance for viewpoints that differ from his own, and provide useful feedback to others (Foot, Morgan & Shute (Eds) 1990:209).

Also worth mentioning in this regard is the founding in 1987 of the *Lancaster-Leeds Research Project on Language Learning in Large Classes*, aimed at promoting research into class size. Amongst other things, their work involves establishing the class sizes teachers around the world have to deal with, and then to find out what teachers see as their main problems in dealing with large classes. McLeod (1989) produced a report called *What teachers cannot do in large classes*, in which she analysed data obtained from 113 teachers in tertiary institutions² in Japan, Nigeria and other African countries. She identified several difficulties experienced by language teachers with large classes. Most of these, viz discipline problems, establishing rapport with individual learners and knowing their names and individual needs, and difficulties with group work, have also been raised by researchers mentioned earlier in this dissertation. By looking at her study as a whole and analysing the comments made by teachers, for example that they find it difficult to keep learners active, or that they don't get the opportunity to talk to everyone and check their work (McLeod 1989:6), it becomes clear that at least part of the problem teachers have with large classes lies with the teachers' view of their teaching task—instead of helping learners to become *independent* workers, teachers choose to focus on *teaching* learners. McLeod continues: '...teachers do not seem to recognise that learners can take some of the responsibility for their own learning or become more autonomous, more reliant on other learners and less on the teacher in the large class' (1989:6). An important principle of outcomes-based education is to move away from teaching that focuses on teacher input—and which encourages rote learning—to teaching the learner how to learn independently, and this calls for a change from traditional classroom practices. Teachers will have to use the different parts of teaching—peer and self assessment, peer teaching, activity-based learning, cooperative learning, learner-centred learning, discovery methods, problem solving—to create an environment which stimulates learners to acquire the necessary skills that will enable them to become self-directed, independent, resourceful and motivated workers who do not rely too much on input from teachers and textbooks.

² Although the research involved tertiary institutions, problems experienced by them could reveal key issues worth following up with regard to the situation in secondary schools.

Another problem that was raised by teachers in McLeod's study (1989), is that they don't have time to *assess* as frequently as possible. This problem arises because teachers generally assume that assessment has to take place once a week or after a specific unit of work has been finished, and furthermore, that tests or examinations are the only reliable methods to assess learners' worth. However, these assumptions will have to change because in outcomes-based education learning, teaching and assessment are inextricably linked. This means that assessment should be seen as part and parcel of the *daily* teaching-learning process and should *not* be regarded as some additional burden instituted to make life difficult for already overburdened teachers. Furthermore, a variety of both informal and formal methods besides tests and exams are available to assess learner progress, and by making use of peer and self assessment to correct learners' work, the teacher is saved a lot of marking. Assessment has a developmental and monitoring function, and it is through assessment that the efficacy of the teaching-learning process can be evaluated—feedback from assessment informs teaching and learning and allows for the critique of outcomes, methods and materials (Curriculum Development Working Group 1996:20).

3.3 SYNTHESIS

The most consistent aspect that emerges from the class size literature, is that teachers have well defined feelings and attitudes about the class size issue and have always been frustrated by the failure of researchers to confirm what from their personal experience seems so obvious (Smith & Glass 1979:1). Teachers argue that differing class sizes affect their workload and morale, the amount of attention that could be directed to individual learners, and opportunities for using different teaching strategies (Cahen *et al* 1983:7; Smith & Glass 1979:3; Husen & Postlethwaite 1994:770).

By looking at the evidence it seems that the answer to the class size conundrum lies with the characteristics of teachers (*viz* competency, experience, knowledge and enthusiasm) and the opportunities they are able (and willing) to create for classroom interaction and learner participation. It seems that reducing class size does not lead to dramatic changes in teaching behaviour, and that the teacher's own *teaching style* is a

more important determinant of classroom activities than *class size*. Also, very often teachers compare class sizes in terms of what they can do in small classes but not in larger ones, and then come to the conclusion that because certain benefits of small classes are not present in larger classes, the latter constitute a *problematic* situation which hampers effective teaching. It may certainly be true that smaller classes would encourage a variety of desirable teaching practices, but it is not true that those practices are necessarily forfeited in larger classes (Tomlinson 1989:270). Evidence of the benefits of smaller classes might reveal effective practices that could have potential for larger classes, and the right approach would be to examine those practices with an open mind and see how they can be utilised in larger classes.

As already mentioned, the situation referred to above seems to be a result of the *teaching style* the teacher uses in the large class situation. Some teachers find it difficult to change their methods and instead cling to traditional, teacher-centred and authoritarian teaching methods because they see themselves as *transmitters* of information. As a result they focus on *teaching* learners instead of creating opportunities for learners to become independent workers, and soon they feel that teaching large classes places a heavy burden on them and makes teaching ineffective. Others seem to think that using these tried and tested traditional methods is the only way to control and discipline a large class. But in effect just the opposite happens—the nature of the teaching methods encourages boredom and inattentiveness, and quite soon the teacher ends up with discipline problems in the classroom. (These aspects are highlighted in Chapter 4.) The importance of *interaction*, *participation* and *involvement* for effective learning are widely recognised and are part of effective large class instruction (Gilbert:1995:5).

It seems that focussing on the numbers game of class size obscures the real issue. According to Tomlinson (1989:270)

[t]he real problem lies in the documented fact that the instructional repertoire of most teachers is very narrow, not just in the United States but the world over. Large classes or small, teachers follow their instructional habits; some are as unprepared for small classes as they are for larger ones.

The researcher therefore agrees with Ryan and Greenfield (1975:225): 'The most important variable in the classroom is the teacher.' In the end it is the teachers who must teach effectively despite class size, and they will do it no better with 20 learners than with 40 *if they are not well educated themselves*. This brings us to the all important issue of ongoing support and training of educators. In South Africa, first time teachers, also the corps of approximately 400 000 existing teachers as well as an estimated 80 000 teachers who are underqualified, face a very steep learning curve as far as training in the new outcomes-based approach to education is concerned, let alone having to implement it in large classes. And apart from that, the new norms and standards for educators (Department of Education 2000:13–14) lists seven roles and their associated competences, which serves as a description of what it means to be a competent educator. These roles are:

- **Learning mediator**

The educator will mediate learning in a manner which is sensitive to the diverse needs of learners, including those with barriers to learning; construct learning environments that are appropriately contextualised and inspirational; communicate effectively showing recognition of and respect for the differences of others. In addition an educator will demonstrate sound knowledge of subject content and various principles, strategies and resources appropriate to teaching in a South African context.

- **Interpreter and designer of learning programmes and materials**

The educator will understand and interpret provided learning programmes, design original learning programmes, identify the requirements for a specific context of learning and select and prepare suitable textual and visual resources for learning. The educator will also select, sequence and pace the learning in a manner sensitive to the differing needs of the subject/learning area and learners.

- **Leader, administrator and manager**

The educator will make decisions appropriate to the level, manage learning in the classroom, carry out classroom administrative duties efficiently and participate in school decision making structures. These competences will be performed in ways which are democratic, which support learners and colleagues, and which demonstrate responsiveness to changing circumstances and needs.

- **Scholar, researcher and lifelong learner**

The educator will achieve ongoing personal, academic, occupational and professional growth through pursuing reflective study and research in their learning area, in broader professional and educational matters, and in other related fields.

- **Community, citizenship and pastoral role**

The educator will practise and promote a critical, committed and ethical attitude towards developing a sense of respect and responsibility towards others. The educator will uphold the constitution and promote democratic values and practices in schools and society. Within the school, the educator will demonstrate an ability to develop a supportive and empowering environment for the learner and respond to the educational and other needs of learners and fellow educators. Furthermore, the educator will develop supportive relations with parents and other key persons and organisations based on a critical understanding of community and environmental development issues. One critical dimension of this role is HIV/AIDS education.

- **Assessor**

The educator will understand that assessment is an essential feature of the teaching and learning process and know how to integrate it into this process. The educator will have an understanding of the purpose, methods and effects of assessment and be able to provide helpful feedback to learners. The educator will design and manage both formative and summative assessment in ways that are appropriate to the level and purpose of the learning and meet the requirements of accrediting bodies. The educator will keep detailed and diagnostic records of assessment. The educator will understand how to interpret and use assessment results to feed into processes for the improvement of learning programmes.

- **Learning area/subject/discipline/phase specialist**

The educator will be well grounded in the knowledge, skills, values, principles, methods, and procedures relevant to the discipline, subject, learning area, phase of study, or professional or occupational practice. The educator will know about different approaches to teaching and learning (and, where appropriate, research and management), and how these may be used in ways which are appropriate to the learners and the context. The educator will have a well-developed understanding of the knowledge appropriate to the specialism

In looking at the above description of what it takes to be a competent educator, it becomes clear that fulfilling these roles will require particular competences with a view to application and effective functioning, especially in the large class situation. This research hopes to address some of these competences in Chapter 5.

In the next chapter an analysis of qualitative research data on large class teaching in a South African secondary school will be done, with a view to identifying common problems with regard to large class teaching.

CHAPTER 4

ANALYSIS OF QUALITATIVE RESEARCH DATA ON LARGE CLASS TEACHING IN A SOUTH AFRICAN SECONDARY SCHOOL—A CASE STUDY

4.1 INTRODUCTION

This chapter focuses on an analysis of the research data on large classes gathered during field work. Data analysis involves a process of systematically searching and arranging the field notes and other accumulated data. This analytic task, which inevitably involves *interpretation*, 'serves the function of allowing a researcher and an audience to make sense of what transpired in a setting, yielding a patterned, synthesized understanding of it' (McCutcheon 1981:6).

Towards the end of this chapter, common problems with regard to large class teaching are identified, *based on the analysed field work data*. These problems, in turn, form the basis for the discussion of strategies for large class teaching in the next and penultimate chapter.

This chapter also explains the rationale for using the qualitative paradigm, as well as discussing logistics such as selecting a site and gaining entry to schools to be involved in the case study.

4.2 RATIONALE FOR USING THE QUALITATIVE RESEARCH PARADIGM

A lengthy discussion of the reasons why the qualitative research paradigm instead of the quantitative research paradigm was chosen for this study appears in Chapter 1, and therefore the following remarks will suffice as a rationale to justify the focus on qualitative research:

- It is clear from the literature survey in Chapter 3 that South African researchers' knowledge of teaching and learning problems in the large class is extremely limited, and it is both relevant and in the interest of teachers and learners in South African secondary schools to increase that knowledge. Lancy (1993:9) states that 'the qualitative paradigm is ideal for phenomena that are patently complex and about which little is known with certainty.'
- The researcher decided to use a qualitative approach because it allows one to capture the nature of what is going on in the large classroom in as detailed a way as possible. Problems can only be recorded, described, analysed and interpreted after extensive *observation* of the teaching and learning processes in large classes, using *words*, rather than *figures* and *complex calculations*. The use of words to describe, analyse and interpret data is an important feature of the qualitative research paradigm. Although a description and analysis of only a few cases¹ means that the data cannot be generalised as a representative picture of all large classrooms, it does allow for a more in-depth and detailed description of the problems of large class teaching. The fact that this case study cannot validly be generalised to all large class situations, doesn't mean that it has no application to large class situations in other settings.

¹ In this study only one case will be described and analysed.

It can provide *important lessons*, and for this reason, readers of this study are encouraged to *compare what is portrayed here to what they know of their own settings, and select whatever is relevant and useful or particularly informative, and use these to better their own practice.*

Next, the research process, which includes fieldwork and related issues, viz selecting a site, gaining entry, collecting data and leaving the field, will be discussed. Thereafter a detailed analysis of the fieldwork data will follow.

4.3 THE RESEARCH PROCESS

4.3.1 Fieldwork

The organisation of fieldwork poses certain challenges to a researcher, especially as far as gaining entry to the site and leaving the field are concerned. Some of the difficulties are highlighted below.

4.3.1.1 Selecting a site and gaining entry

In order to start research on the problems associated with teaching large classes in South African secondary schools, ten schools in the Gauteng area were identified that would be suitable sites for the research. Amongst them were five former model C schools and five former Department of Education and Training (DET) schools. It stands to reason that the choice of research site(s) should be guided by the specific problem the researcher wants to address (Lancy 1993:236), and therefore the main criterion in the selection of a site was a secondary school where the learner-teacher ratio is at least 40:1 or higher. A second, more practical criterion, was that the school should not be too far from Pretoria in order to save on travelling time.

The next step was to approach the principals² to find out which schools were willing to participate in the research project. It was soon discovered that getting the cooperation of the gatekeepers with the power to grant access, was going to be a time consuming and frustrating process. According to Harley, Bertram and Mattson (1999:163),

Classroom research, always problematic in terms of access, has a particular set of dynamics in post-apartheid South Africa. Past political struggles in some of the 'ex-Departments' has (*sic*) left an inheritance of access to classrooms being suspect or downright illegitimate.

Only two replies had been received after two weeks, after which the researcher had to contact the other principals telephonically. Most principals, though admitting that teachers are experiencing problems with the increasing class sizes, were not interested in participating, for a variety of reasons. Some could not find the time to see the researcher³, others were cynical about the benefits of research, one said rather bluntly that he did not trust researchers because they seldom come up with workable solutions, and a few others did not keep their promises to get back to the researcher. Eventually only two principals indicated that they were willing to involve their schools in the research project. At this stage the researcher had to decide whether two schools should be involved and studied somewhat superficially, or whether only one should be involved and studied in greater depth. In the end it was decided, that in order to thoroughly understand the complex process of teaching and learning in large classes as well as the problems affecting teaching and learning in large classes, only one school should be involved. Extensive observation to become familiar with life in this school's classrooms was necessary to understand processes and to identify problems, and this was only possible to manage in the available time if just one school was involved.

² See Annexure A for a copy of the letter to principals.

³ Letters were sent out towards the end of February 1999 and the follow-up exercise took place in March 1999, which is not normally one of the busiest periods on the school calendar.

The name of the school was submitted to the research unit of the Gauteng Department of Education: Directorate Education Information—another level of gatekeeper—and after approval was granted, the school visits aimed at data collection could begin.

4.3.1.2 Data collection

As mentioned briefly in Chapter 1, data were collected through classroom observation, because the aim of the research is to observe both teacher and learners in their natural setting—the class with a large number of learners—to identify teaching and learning problems that could hamper effective teaching and learning. The researcher wanted to find out *What is going on there?*—What does the teacher do?; Which strategies does s/he employ?; Which methods of instruction are used?; How do learners react? *et cetera*. The data collection period for this study ran from August 1999 to November 1999, by which time the researcher was satisfied that enough data had been collected. Although there is no hard and fast rule regarding what constitutes sufficient time on the site, observation should last long enough to permit the researcher to see things happen not once but repeatedly (LeCompte, Millroy & Preissle (Eds) 1992:65).

In addition to using naturalistic observation and field notes to collect data, notes about informal discussions with teachers were also maintained. The teachers involved had the opportunity throughout the study to be active collaborators in the research project. Informal discussions with individual teachers frequently occurred during a free moment between classes with a view to, amongst other things, verifying researcher interpretations, clarifying issues, and speculating about reasons for certain actions. According to Lancy (1993:20) '[t]he qualitative researcher's most effective defense against the charge of being subjective is to buttress what she has observed with material that reinforces these observations from other semi-independent sources.'

As the researcher wanted to observe things as they happened, naturally and *as undisturbed by her presence as possible*, she assumed the role of *non-participant observer*. This role requires a detached, neutral and unobtrusive observer preferably sitting in a corner at the back of the classroom, not trying to be part of the proceedings in

the classroom, but adopting the ‘fly on the wall’ technique to observe behaviour (Lancy 1993:14). But, as Woods (1986:39) indicated, it is difficult *not* to have an effect on the situation under observation, particularly in sensitive areas such as classrooms. For example, during the first week of observation, the researcher found that there were no discipline problems in any of the classes observed. However, as the learners got used to the researcher’s presence in the classroom, ‘their true colours showed’ (a teacher’s remark) and they became rather unruly.

Observations need to be recorded, and this is done by making *field notes*. The researcher made on the spot, hand-written verbatim recordings of observations, with particular attention to activities, actors, the physical space, physical objects, and sequence of activities and events. These free form jottings were written on two levels: firstly the facts—very direct descriptions of what was observed—and, secondly, the researcher’s comments, in square brackets, which provided a context for the raw facts as well as brief interpretations of what these might mean. According to LeCompte, Millroy and Preissle (Eds) (1992:78), ‘[t]hese interpretations or “hunches” are frequently the starting point for significant analysis later.’ After one week in the field, the researcher started to feel uncomfortable with the numerous pages of field notes. Furthermore, the data contained in the field notes seemed to be rather disorganised and the researcher felt that something should be done to ensure more systematic data collection. After careful reviewing of the field notes, broad categories of the phenomena observed (*viz* physical setting, teacher actions and learner reaction) were identified and used as the basis for the development of a *checklist-cum-observation schedule*⁴. However, the researcher decided *not* to use the latter during classroom observation, but to continue taking down field notes while in the field, and rather transcribe the hand-written field notes onto the schedule on a daily basis, *after* the day in the field. (The field notes and the relevant schedule were to be filed together.) The reason for this decision was that the use of a systematic instrument for data collection prescribes what is to be observed, and in the process the researcher often ignores important action in the classroom, thus limiting the scope of the recorded data (Woods 1986:47–48; LeCompte, Millroy & Preissle (Eds) 1992:67).

⁴ See Annexure B for a copy of this checklist-cum-observation schedule.

4.3.1.3 Leaving the field

This poses practical and ethical difficulties. Schools often have certain expectations, and it is also not unreasonable for schools to expect some sort of compensation for their willingness to participate in research activity. The researcher felt strongly that the school concerned should be offered some kind of reportback if they so wished, and not be left in the dark with regard to the outcome of the research, especially as far as the strategies that can be used to overcome problems of teaching in a large class are concerned.

4.4 ANALYSIS OF FIELD WORK DATA

As an initial step in data analysis, the collected data were reviewed repeatedly. In the process several significant categories emerged. These categories were written down separately and assigned specific codes, and thereafter the collected data were scanned again. Data pertaining to a certain category were then marked with the relevant code. After having classified the data according to these categories, interpretation and presentation of findings could begin.

In this part of the dissertation, the school chosen as site for the research on large class teaching and learning will be described in terms of the context. This will be followed by a section on each of the two classes observed at this specific school, viz Mrs January's⁵ mathematics and physical science classes, and Mrs February's geography and mathematics classes. Subsequently, the chapter will be concluded with a summary of findings, which presents an integration of the analysed field work data and the literature surveyed in Chapter 3.

⁵ The name of the school, the community and all the individuals were replaced with pseudonyms to protect their privacy.

4.4.1 Protea Secondary School

- *The setting*

The school is situated in the western suburbs of Pretoria, approximately 20 kilometres from the city centre.

- *Resources*

The school is enclosed by a high wire fence and has an administrative block and three classroom blocks which are in a good state of repair. Each classroom has one power point in the front of the room. The classrooms are fairly big, but even so appear crowded with desks arranged very closely together and occupying most of the classroom space. (There is no desk for the teacher due to a lack of space.) Although the teacher has enough room to move easily in front of the chalkboard, the lack of adequate space between rows limits teacher movement. In all classes there are four rows of eight desks each. Each desk provides seating for two learners; however, in the bigger classes three learners have to share two seats. The sizes of the classes observed ranged between 50 and 65 learners. There is a big chalkboard in every classroom that occupies almost the entire front wall, as well as a bulletin board against the back wall. Except for the graffiti on the bulletin board, there does not seem to be any effort in any of the classrooms to utilise it as a teaching medium.

- *Daily schedule*

The school starts at eight, by which time all learners are expected to be in their respective classrooms. Lessons are only 35 minutes long, and at the end of the period the learners remain in the classroom while the teachers travel to the next class. (What was noticeable about all the teachers observed, is that they would carry with them to their classes only pieces of chalk and a textbook. This seemingly insignificant observation provided a hint about the kind of teaching that went on in these classrooms, as will become clear during the discussions below.)

4.4.1.1 Mrs January's classroom

Mrs January has been teaching for five years. She has never occupied a permanent post, and is not sure whether she will have a post after the end of term. She teaches mathematics and physical science⁶ to grade eight and nine learners (standard six and seven).

Observation in Mrs January's classroom was guided by the following questions: What features seem to characterise instruction in this specific teacher's classroom? What kinds of teacher-learner and learner-learner interaction take place in her classroom? What specific problems does she experience in the handling of a large number of learners? In what way does class size appear to affect what takes place in the classroom? Three issues were considered, viz commencement of class period, instructional activities, and interactions. In the next part these issues will be examined in detail and their relationship to class size will be reflected upon.

The following scenes illustrate some of the characteristic features of life in Mrs January's large class.

- Commencement of class period

Although Mrs January seems to have a personal, informal style at times, she generally does not tolerate laziness and can be very strict at times. She expects learners to rise when she enters class and to greet her in a formal manner. Before the start of every lesson, about *ten minutes* are devoted to what she terms *sorting-out time*. During this time she would quickly check whether homework has been done. Those learners who have not completed theirs, are—depending on her mood—either expected to stand quietly, at their desks, for the duration of the period, or instructed to clean the classroom (which usually is rather messy). On being questioned about this practice by the researcher, Mrs January explains that it is always the older learners (read repeaters) who

⁶ Physical science classes for grade eight and nine learners are not offered in the science laboratory. The laboratory is reserved for grade ten, eleven and twelve learners.

don't do homework or who cause discipline problems. She insists that she only teaches learners who are interested to learn—as far as she is concerned the others don't exist.

- Instructional activities

Lesson presentation

Mrs January would typically start her lessons with the new content. None of her lessons had an introduction—there was no effort to stimulate learners' interest in the topic or to focus attention by introducing the lesson in a striking way, no connection with work previously done, no mention of what they would be expected to know and do at the end of the lesson, *et cetera*. The following *snapshot* of a physical science lesson typifies most of her lessons:

Mrs January: 'What is the difference between a cell and a battery?

I'm waiting for an answer!'

[No reply. Learners are busy settling-in, and those few who have textbooks, are trying to find the correct page. She tries code-switching and a lengthy explanation in the vernacular follows. This seems to help, because learners offer several answers].

In the physical science classes observed, no evidence could be found of the use of a *variety* of instructional approaches in the presentation of new material. In general Mrs January's teaching is dominated by whole class instruction, requiring the same work and pace for each individual learner. Often the telling method is alternated with the question and answer method. Although the use of questions can be an important tool for teaching higher order thinking skills, the knowledge-recall type of questions Mrs January uses only promote rote learning. When she poses a question, it is usually directed at the entire class and not to individual learners. Furthermore, it is noticeable that she often ignores the answers offered by learners—if the right answer is offered she moves on; if the answer is wrong she hardly ever tries to find out where the problem lies in order to increase the learner's understanding of the material. Also, a good deal of time was spent chorally reciting answers or recently acquired facts.

Mrs January explains:

When I let learners do this [recitation], at least it makes for a more lively lesson and all the learners are involved.

Information is also not always presented in a logical sequence. Instead one gets the impression that it is presented in a rather haphazard way—perhaps due to a lack of proper planning or due to the teacher's superficial knowledge with regard to the subject?

The following extract from the field notes illustrates the points made above:

Mrs January: 'Can anybody give me examples of magnetic substances?'

[There is a hum of voices as everybody answers together].

'OK. Did you all hear? Say *iron* and *steel* [Learners chant the answer]. Now what is the difference between iron and steel?' [Before anyone could offer a satisfactory answer, she suddenly switches to *magnets*, without explaining the relationship between magnetic substances and magnets].

Mrs January: 'Magnets have south poles and north poles. We say that *like* poles repel each other and *unlike* poles attract each other. What do *like* poles do? [Learners chant the answer]. And *unlike* poles?' [Some more chanting, and the process is repeated three more times!]. Magnets also have another property: they show direction. Now say after me: the two properties of magnets are ...' [More chanting as learners repeat the two properties after the teacher].

Mrs January: 'Who can give me an everyday example where like poles repel and unlike poles attract? [No one offers an answer, but there is a lot of discussion]. OK. Think about girls: they are like poles and therefore they repel each other. But boys and girls, that's a different story. They are unlike poles and therefore they attract each other' [The latter could be seen as an example of the teacher's superficial knowledge of the subject].

Having observed several classes that were presented in almost the same manner as described above, the researcher asked about the possibility of using group work. Mrs January expressed reluctance to use group work in the physical science classes:

You know, if I have to let these fifty-five children work in groups, we will soon have chaos. And the other teachers and the principal might not like the noise.

You have seen how difficult it is to control them [when using the whole class approach]. And besides, what type of things should they do in groups?

In a sense these common objections are understandable, but it is also an indication of a lack of skills to implement group work—*what* should be done during group work and *how* should it be organised. Furthermore, it is an indication of a lack of confidence to cope with the changing role of the teacher as transmitter of knowledge to the teacher as facilitator of learning, as it implies a shift in control from the teacher to the learners (Alfers & Murray 1994:39). Activities allowing learners to work on their own and to contribute to chaos and an increased noise level may cause Mrs January to feel as if she is losing control, so she prefers to avoid them. This type of behaviour supports Adams' and Biddle's (1970:45) findings with regard to teachers' classroom behaviour:

[T]he specter of loss of control continues to haunt teachers to the extent that they are unwilling to create informal pupil activity situations where "insurrection" might rear its ugly head.

There *was* an effort to vary instruction in the mathematics classes observed. Mrs January would use whole class instruction to explain new work, and then, during a subsequent mathematics period, she would implement what she terms *her variation on group work*. It amounts to the following: at the start of the class period she would write four different mathematics assignments (usually a complicated sum) on the chalkboard. Group members of the four groups (each of the four rows in the classroom represents a group) then have to gather in front of the chalkboard, and help the group leader to complete the computation. Mrs January would then check each group's efforts and ask them to explain how they arrived at the answer and why certain steps were followed. (These are some of the rare occasions where learners were asked to explain a process and where she used probing questions to elicit response; Mrs January usually only required them to recall facts.) In the case of an incorrect answer, the correct version is done on the board by her and an explanation is provided to indicate where they went wrong.

Peer tutoring is another option that could be considered in this situation where learners are always seated in pairs. This natural grouping could be put to good use without the need to move either the learners or heavy desks into groups. As indicated in Chapter Three, peer tutoring has limited use in the teaching of higher level conceptual skills, but can be useful for improving rote skills such as, amongst others, mathematical facts.

The use of resources

Generally, little variety exists in the use of resources to supplement Mrs January's teaching. The chalkboard and textbooks seem to predominate. Although the chalkboard is one of the most useful and versatile teaching media, it is not used to very good effect in this classroom. Writing is not large and clear enough—the researcher noticed several times that learners at the back either had to stand in order to see what was written on the board, or had to ask their peers. It stands to reason that this causes a certain amount of noise, and valuable teaching time is lost while Mrs January tries to restore order. More attention can also be paid to good layout of board work. Thoughts are not systematically written down as the lesson develops, with the result that bits of useless information are scattered all over the rather huge chalkboard. With a little bit of planning, board work can serve as a valuable lesson summary that learners can take down. An important reason for Mrs January's focus on the use of the chalkboard, is the unavailability of resources to teach physical science concepts. For example, during the lesson on *magnets*, there were neither magnets nor a compass available, so she had to rely on chalkboard drawings to explain relevant concepts.

In the mathematics classes observed, the chalkboard⁷ was put to good use during Mrs January's variation on group work. The board was divided into four equal parts, and four different mathematics assignments for the four different groups were written down in the relevant spaces. The group leaders then had to do the assignment on the

⁷ As was mentioned earlier, the chalkboard is very large and occupies the entire front wall of the classroom.

board with the help of their peers. Once they had finished, Mrs January would check each assignment, ask questions and demand explanations from the group members as she went along.

In addition to the chalkboard, the textbook also plays an important role in Mrs January's teaching. Frequently she would require the class as a whole to read long passages from the textbook, a practice which seems to be pointless—unless her aim is to improve their reading skills. Alternately, she would require learners to open the book at the section in question, and to underline certain parts as indicated by her. This rather traditional way of using the textbook makes the classroom teacher-centred, and does not stimulate independence and self-activity in learners. Although her teaching does not seem to be dominated by the textbook, there are a lot of other more meaningful ways in which Mrs January can utilise the textbook to supplement her teaching.

Managing behaviour

Frequent interruptions of lessons occur as Mrs January reprimands learners in order to control their behaviour. She mainly relies on verbal sanctions and threats as disciplinary measures. Examples like the following typify this aspect of her instruction:

Mrs January: 'Hey, hey, hey!' (This is her standard way of calling learners to order, and is used frequently throughout the period).

While busy with a lesson, she surveys the room and suddenly calls out, 'Sipho and Mike, I can't recall seeing you in my class yesterday. Where were you? Please come and see me after class!'

Often, while she is writing on the board, learners are misbehaving and not paying attention to what she is doing. She would then turn around and reprimand the culprits sharply.

Mrs January: 'Since when are you answering/greeting me sitting down? Stand up, immediately!'

During informal discussions between the researcher and Mrs January before the onset of observation, she was asked what she considered to be her main problem with the teaching of large classes. She explains:

It's OK to teach a large class. I'm used to it because I have so far only taught large classes. But you know, it's difficult to discipline them when they are so many. I'm trying to be very strict—the only way to control these children is to keep them under your thumb.

Learners' restlessness, their talking while the lesson is in progress and other misbehaviour become more easily understandable if one considers what is taking place in the classroom day after day—with little variation in the way lessons are presented, few occasions for discussion, activity and interaction with peers and not much effort by the teacher to make the lesson content interesting and life related, it is to be expected that learners in this age range will behave poorly. The daily activities, because of their similarity, routine and repetition, may be more boring to learners than the teacher might think.

Assessment of learners

Not much seems to have changed in this school as far as the assessment of learners is concerned. The focus is mainly on using assessment *summatively*, instead of *formatively* or *continuously* (CASS) as prescribed by new policy on outcomes-based assessment (Gauteng Department of Education 1999). Formal tests and examinations are the order of the day, and very little evidence could be found in Mrs January's class of the use of formative assessment, where feedback from a variety of assessment methods is used in the classroom situation on a daily basis to inform the teaching process through which learning outcomes are acquired. She did, however, devote time to the discussion of the recent mathematics and physical science examination papers, during which common problems were highlighted.

- Interactions

Teacher-learner interactions

As indicated previously, the desire for control and authority influences to a great extent the way in which Mrs January relates with her learners, possibly due to the pressure of having to handle so many learners in the classroom. Frequently she shouts, 'Hey, hey, hey!' or threatens, 'You can go outside, I only teach children who are interested in my subject.' Even the exchange of greetings at the start of the lesson contains a note of aggression, 'I say, since when do you greet me sitting down!' Another significant feature of teacher-learner interaction in this classroom, is the unsympathetic and rather negative way in which she reacts to learners' answers to questions. (No wonder that learners never react to her stereotyped way of concluding almost every lesson, 'Any questions? Any misunderstandings?') The following examples illustrate the nature of her reactions:

Mrs January [sarcastic]: 'Do you *really* think *that* is an example of a quad? Poor you!'

Mrs January: 'Why do you stand in such a funny way when you answer me?'

Mrs January: 'You don't know what is going on because you only memorise the textbook and don't want to think for yourself.'

Usually, only the learners in the front seats pay attention to Mrs January. (She mainly stays in front of the classroom.) The learners at the back are passive and busy with their own activities, for example note-passing, daydreaming, and quietly talking to their peers.

Interestingly, Mrs January's perceptions of how she interacts with learners differ from observable behaviour. For example, she characterises her teaching with the following traits:

It is difficult to get children to like maths. That is the reason why I allow the different groups to cheer each other when their sums are done correctly. I always try to make the classes as much fun as possible.

The only way to discipline these large classes is to ignore those who are trying to be funny.

I'm trying to make my lessons as interesting as possible. I want the children to like being in my class.

Although no coded observation instrument was used to record teacher-learner interaction formally at specific intervals, it is indisputable that the teacher's attempts to control learners by frequently reprimanding them, take up a lot of time, thus interfering with valuable lesson time. To conclude: if one takes into account the time spent at the beginning of the period during the so called *sorting out time* and add it to the time used to reprimand learners and maintain authority, a surprisingly small proportion of total class time is devoted to academic tasks. In this specific teacher's classroom, it is not unrealistic to say that a maximum of fifteen minutes are usually left for the presentation of new content as well as for guided practice towards the end of the lesson. Furthermore, if one takes into account the teacher-centredness of the classroom interactions, it generally leaves very little, if any opportunity for learners to work independently on a few problems in order to check their own understanding of the new content and to receive help on any aspect of the new work that they might have misunderstood.

Learner-learner interactions

It is clear from the preceding discussions, that due to Mrs January's dominance in classroom interactions and her need to control every aspect of the teaching-learning situation, learners are as a rule allowed only few opportunities for interacting with their peers. During the rare occasions where learners were allowed to work together on mathematics problems, they all took part enthusiastically and clearly enjoyed the exercise. More attention could be paid to group work, and the possibilities of peer tutoring also need to be explored (see the paragraph on *Lesson presentation* above).

In the next section, the same method will be followed in the analysis of a colleague, Mrs February's, interaction in the large class situation. Observation was guided by

the same questions as those that applied to Mrs January's classroom (see *Mrs January's classroom* above): What features seem to typify instruction, and what role does class size play in what occurs in this classroom?

4.4.1.2 Mrs February's classroom

Mrs February is a veteran teacher with more than twenty years teaching experience. She is a soft-spoken person and displays a very sympathetic attitude towards her learners. She teaches mathematics to grade eight (standard six) learners and geography to the grade tens (standard eight). The following scenes illustrate some of the characteristic features of life in Mrs February's large class.

- Commencement of class period

It usually takes Mrs February quite some time to get to her position in front of the chalkboard to start with the lesson. There are always learners who demand her attention, and because she is such a caring type of person, she listens patiently to every one's story. In the mean time the others either shuffle through workbooks, page through their textbooks, talk to a friend, or just sit. When she is ready to start, she will take her textbook from the plastic shopping bag that she always carries with her, and write the topic of the lesson on the board.

- Instructional activities

Lesson presentation and the use of resources

In the geography classes observed, little variation seems to exist in the way Mrs February presents new lesson material. She follows, almost verbatim at times, the wording in the textbook, and would typically spend most of her teaching time copying lengthy definitions, *et cetera*, from the textbook on the chalkboard. As far as she seems to be concerned, the textbook is the only source of information. During informal discussions with the researcher, Mrs February explains the reasons for this practice:

I have to stick to the textbook, because I haven't taught geography for ages! You know, because all temporary teachers had to go, the ones remaining behind were

asked to take up extra responsibilities. It is difficult at times, but what can you do. I need my job.

While she is writing on the board, learners are expected to copy the notes into their workbooks. She would also continually provide explanations and, from time to time, direct questions to the class as a whole. These questions are not intended to stimulate discussion or higher order thinking skills, but merely focus on knowledge recall. Needless to say, due to the nature of the teaching method, learners hardly ever react, but instead rush to finish writing before the end of the period. When using the textbook in this way, learners are not encouraged to think for themselves, to formulate their own thoughts well and express these properly in oral form—this is certainly one of the most passive teaching methods (Duminy, Dreyer & Steyn 1990:170–171).

The chalkboard is an integral part of Mrs February's instruction, and therefore one could expect that attention would be paid to proper planning and good layout to ensure that the fullest use is made of this versatile medium. However, her writing is not large and clear enough, with the result that learners at the back are constantly jumping up and down to be able to see what has been written. Furthermore, because learners are expected to copy rather lengthy passages from the board, lots of valuable teaching time is wasted and the minimum academic work gets done during a class period.

An alarming aspect of Mrs February's geography instruction is the total absence of any *visual materials* to supplement her teaching. In a lesson on *Synoptic weather charts*, the teaching centred around definitions written on the board as well as knowledge recall questions, for example:

- What is the meaning of synopsis?
- What is weather?
- What do you know about the direction of wind?
- What determine temperature changes?

Only during the last few minutes of the period were learners referred to the synoptic chart in their textbooks, and questions related to the chart were asked. (Due to the fact that most learners do not have textbooks—according to Mrs February they *have* textbooks but leave them at home—only two learners reacted.) This is an example of a topic where very good use could be made of either a big wall chart or newspaper cuttings of synoptic charts, to make teaching more effective than merely relying on words. Learners could, in groups, examine these synoptic charts and make certain deductions with regard to rainfall, wind directions, temperatures, *et cetera*. More learners are then actively involved in the lesson, the lesson is made more interesting through the use of visual material, and learners get the opportunity to discover for themselves and to discuss the material with their peers.

In the mathematics classes observed, the same routine, *viz* chalk and talk, functionalisation, and assessment was followed day after day. Mrs February would typically explain certain calculations by way of examples taken from the textbook, on the chalkboard. The researcher had many questions with regard to the reasons why calculations were done in a particular way, and expected that she would sooner or later provide explanations. However, Mrs February would only tell learners *what* to do, and never explain the *reasons* for the steps. For example, when explaining the procedure to divide fractions, learners are frequently required to recite the rule ‘invert and multiply’. Perhaps such a rule would make more sense if the teacher could explain to learners why the reciprocal of the dividend is used and how this changes a division problem into a multiplication problem. According to the numerous wrong answers supplied by the learners every time a question was asked, they did not quite follow—but no learner ever questioned the way calculations were done. It could perhaps be that, because the teacher dominates the teaching-learning situation, learners—used to being passive—don’t feel free to ask any questions.

After the talk and chalk phase, learners are presented with a few classwork examples (usually between two and four) from the textbook, to answer on their own in their workbooks. Mrs February then spends the rest of the period circulating, stopping

frequently to help with a problem. This will be discussed next in the section on *Assessment of learners' work*.

Assessment of learners' work

Continuous assessment and feedback play a very important role in the teaching-learning situation, because they help learners to check their own understanding and correct any misunderstandings. However, due to the large number of learners in the classroom, it is only possible to reach a very small proportion of learners in the available time to check classwork. According to Mrs February, she takes a different row every day, and tries to correct the classwork of all learners in that specific row. If one takes into account that there are about fifteen learners per row, this doesn't leave much time for discussion of individual progress or problems. At the most she succeeds in rewarding correct answers with a checkmark, and learners making errors receive reminders to 'redo these', or 'check this one.' During these encounters she would often make remarks like 'It is because you don't care to follow the rules that you get everything wrong'; 'You did everything wrong!'; 'You seem to be confused, but it is because you never listen/are always absent/are not interested in maths.' Unfortunately, due to time constraints and the number of learners involved, she is unable to explain to individual learners which rules they didn't follow, where they went wrong, or what the reasons for their misunderstandings are. Thus, her feedback neither serves any *teaching* purpose, nor does it create opportunities for learners to learn from their mistakes. Furthermore, the brighter learners usually finish the work in a relatively short period of time, which means that they have to *wait* a great deal of time for the teacher—who does not necessarily get round to them. (The same problem applies to the learners in the other three rows.) Mrs February explains:

I can honestly say that my biggest frustration in these large classes is that I can't get to children individually to help them with problems. If I can maybe manage to speak to every child once a week and find out what his problems are, I will be very happy. Some children take a long time to understand—they need lots of attention. With a large class you end up not answering all questions. They [learners] are too many and too different.

Perhaps more could be done to provide enrichment activities for bright learners, and not expect all learners to do the same work as is the case at the moment. Learners will also benefit from being taught skills in self-assessment, peer assessment, as well as skills in working independently. They seem very dependent on the teacher and are unable to work on their own. Although it might take some time initially to teach learners these skills, the long-term effect may be to provide Mrs February with more time to devote to individual learners with serious problems. It can also provide learners with opportunities to become actively involved in the teaching-learning process.

More attention should also be paid to continuous assessment (CASS), because

The practice of continuous assessment will underpin all assessment across the General Education and Training Band. All educators should begin to use this approach, as far as possible, whether or not Curriculum 2005 has been introduced in the classes they teach (Gauteng Department of Education 1999:13).

Continuous assessment should be built into learning activities, and does therefore not necessarily require extra time as a separate activity. This means that teachers need additional time to plan for assessment and to record learner progress and achievement, while learners benefit from more teaching and learning time (Gauteng Department of Education 1999:7).

Managing behaviour

The learners in Mrs February's class seem to be very well behaved. Lessons proceed smoothly, and are not being interrupted too frequently by disciplinary messages directed at a misbehaving learner. In large classes, a certain amount of control—not too strict and authoritarian, however—is important to maintain if learning is to occur. It is therefore important to develop disciplinary tactics that do not interfere with the normal flow of instruction. Mrs February uses silent tactics, viz a pointing finger or a warning glance. This doesn't disrupt lessons, and it also reduces the amount of attention derived from misbehaving.

Mrs February's instruction tends to be either teacher-centred—talk and chalk—or quiet seatwork, which means learners are either busy copying from the chalkboard or working on problems on their own. She believes this approach allows for easier behaviour management. She acknowledges:

It is difficult to control learners if you have several groups to organise and watch over. Some children are difficult to control, because they don't seem to know that they are not the only ones in the class.

Faced with the complexity of the large classroom, Mrs February has over the years developed specific routines, procedures and habits of teaching which she believes provide structure for both the learners and herself and which work well in large classes. Even though some aspects of her teaching do not seem ideal, she doesn't at this stage see a need to change her style. Perhaps she is not fully aware of other possibilities to teach large classes and still manage behaviour effectively, and therefore she relies mainly on teacher centred methods. Also, if she is concerned about control, she may view her specific approach as the only way to manage learner behaviour.

- Interactions

Teacher-learner interactions

As indicated previously, Mrs February's desire for control over learner behaviour has the effect that the teaching-learning situation is dominated by herself, and that learners are not encouraged to interact with the teacher. When she asks a question, most learners don't raise their hands—they are too busy to copy notes from the chalkboard. When she gets no reaction within a few seconds, she will supply the answer herself rather than making an effort to involve passive learners. However, more teacher-learner interaction occurs towards the end of the period during assessment of seatwork. Once again, both the quality and quantity of this interaction are hampered by the number of learners in the classroom (see *Assessment of learners* above).

Learner-learner interaction

Mrs February's approach to instruction also does not allow opportunities for interaction amongst peers. During seatwork, learners are expected to work quietly on their own. Although Mrs February earlier expressed her concern at not being able to correct all learners' work in the course of a week because there are so many of them, she doesn't seem to realise that she may be contributing to this problem. Her task could be less of a burden and she would save herself a lot of time if she would ask those learners who understand the work to explain it to struggling peers. Perhaps she could benefit from a few ideas on how to effectively apply peer tutoring and group work in the large class.

4.5 SUMMARY OF FINDINGS

During field work a great deal of data was collected about the activities of teachers and learners in the large classroom. The primary focus of the discussion and analysis of these field notes was to provide detailed pictures of classroom processes in order to arrive at a better understanding of how large classrooms work and of the constraints imposed by the size of the class. Although the specifics sometimes vary, there appears to be general consistency across classes with regard to the issues that hamper effective teaching in large classes⁸. These issues will consequently be discussed under the following headings, viz large class management, classroom teaching in the large class, and assessment of learners in the large class.

4.5.1 Large class management

If one assumes that classroom management is that set of activities by which the teacher establishes and maintains classroom conditions which *facilitate* effective and efficient teaching in either large or small classes, most teachers will agree that one of the requirements to create such conditions is an *orderly* and *disciplined* class environment.

⁸ From the discussion it will become clear that not all these supposed constraints are directly related to the size of the class.

Thus, it was to be expected that in their search for solutions with regard to creating conditions in large classes to teach effectively, researchers awarded the discipline issue much prominence. The literature survey done in Chapter 3 indicates clearly that discipline problems have the potential to *impede* rather than *facilitate* effective and efficient teaching and learning in large classes, and that preventive measures should be in place to prevent misbehaviour, thus ensuring that teaching and learning take place undisturbed. In some of the classes observed by the researcher lessons were frequently interrupted by reprimands aimed at misbehaving learners. Apart from distracting attention and interrupting the flow of the lesson, repeated reprimands consume a large part of valuable lesson time, and as a result it was found that not much constructive work gets done during a class period of thirty five minutes.

The literature offers the following reasons for the greater incidence of misbehaviour in large classes:

- Because most learners in large classes don't have frequent contact with the teacher and are away from her watchful eye, they become inattentive and disruptive (Cahen *et al* 1983:202–203)—a problem that was also accentuated during the researcher's observations.
- Hallinan and Sorensen (1985:74–76) state that if one assumes that every learner has some probability of misbehaving during the day, *more* discipline problems are likely to arise in large classes due to the greater number of learners. They also argue that low-ability learners who do not have the skills to work independently during seatwork, soon become inattentive and cause disciplinary problems.
- According to Nolasco and Arthur (1986:102–104), teachers are of the opinion that chaos erupted if they used techniques other than up-front lock-step teaching⁹. They therefore choose to use traditional teacher-centred methods with limited opportunities for learner participation and involvement, and instead of improving discipline, just the opposite happens. Learners become bored and boredom regularly leads to

⁹ A style of teaching characterised by a considerable amount of teacher input and teacher control of the content, stages and pace of the lesson.

misbehaviour. This was also a prominent feature of most of the classes observed by the researcher.

Another aspect of classroom management that might take up valuable teaching time if not handled correctly, is a common activity like *starting class*. It was found during observation that some teachers don't have proper routines and procedures with regard to checking of homework and dealing with learners' private issues. These issues were usually dealt with before the start of the lesson, and as a result time was wasted unnecessarily. The literature highlights the need for teachers of large classes to establish and maintain proper routines and procedures to handle common activities, viz starting and ending class, distributing hand-outs and materials, moving students into groups and collecting and handing out books or assignments (Hallinan & Sorensen 1985:74–76). *In the next chapter strategies for classroom management in large classes will be discussed in more detail.*

4.5.2 Classroom teaching in the large class

4.5.2.1 Planning for effective teaching in large classes

One aspect of classroom teaching that was not indicated in the literature study—probably because it is not directly related to class size—but which is believed to be of consequence in this study, is lesson planning. The haphazard way in which most of the lessons observed were presented created the impression that some teachers didn't give careful thought to their lesson planning—there is not much variety in the way lessons are presented, few opportunities for activity and interaction with peers, and not much effort to make lessons interesting. The disciplinary problems that frequently crop up during lesson presentation are most probably a result of poor lesson planning and preparation. Learners can very soon detect when a lesson is not well planned, and sooner or later they lose interest, become bored and inattentive, and might disrupt the class. There is substantial evidence to indicate that well-designed, well-implemented instructional activities are a primary factor in preventing managerial problems (Weber 1986:303).

Although teachers are generally free to determine the form of their lesson plans, there are certain basic elements that need to be present to ensure optimum time on task during lesson presentation. Teachers need to know what the intended lesson outcomes are and what content has to be taught, and this information has to be communicated in an interesting way to learners by way of the lesson introduction. The lesson introduction should aim at capturing and retaining learner attention and involvement. Furthermore, the teacher should be aware of the methods or procedures s/he intends to use, how they will be executed and what roles are envisaged for the learners. Teachers should avoid presenting lessons in the same format and progression day after day—this might lead to boredom and, consequently, discipline problems. Although this might sound like an oversimplification of the issue, the researcher is of the opinion that teaching in large classes can be much less demanding if teachers are better prepared for the task at hand. *In the next chapter the issue of lesson planning will be addressed.*

4.5.2.2 Teaching strategies

In the classes observed the teaching was mostly dominated by teaching practices that are not conducive to *active learning*. Active learning is an important part of effective instruction, because it encourages learners to become *independent learners* who gradually take more responsibility for their own learning. It also engages learners *actively* in a variety of interesting learning experiences. However, the teachers used mostly whole group instruction, with the emphasis on knowledge imparted from teacher lectures and the textbook, the question and answer method, and learners copying from the chalkboard. Learners were mostly *passive* and had few opportunities throughout the class period to ask questions, to solve problems, to apply learning activities to their context, to participate in discussions or actively work with the new material. There were also not enough opportunities to work within other organisational patterns, *viz* in pairs—peer tutoring—or in small groups—cooperative learning.

According to research cited in the literature study in Chapter 3, this focus on teacher-centred teaching methods and the consequent lack of teacher-learner and learner-learner interaction *are not necessarily related to class size*. In their intensive case studies of

primary classrooms Cahen *et al* (1983:201–207) found that whole class instruction remained the dominant form of instruction regardless of class size. Similarly, Shapson *et al* (1980:145–155) indicated that teachers made virtually no changes in methods of instruction in different class sizes, and Kumar (1992:45) came to the conclusion that class size alone may not be responsible for more or fewer interactional opportunities being made available to learners. Instead, it is the nature of the teaching-learning activities selected by the teacher and her role and attitude with regard to effective teaching that influence the nature of learner interaction. McLeod (1989:6) supports Kumar's view by saying that part of the problem teachers have with large classes lies with their view of their teaching task. They tend to think that the focus of teaching has to be on *teaching learners*, instead of encouraging them to become *independent learners*—and this calls for a change from traditional classroom practices.

Very often teachers' obsession with the large class *dilemma* limits their vision as far as innovative teaching strategies to deal with large classes are concerned. They seem to think that they have to stick to an authoritarian, dominant attitude in order to manage the large number of learners, and that a large class offers only limited possibilities for teacher-learner and learner-learner interaction. What they don't realise is that there are ways to 'reduce' the large class from time to time without employing extra teachers, for example through the use of the cooperative learning strategy, peer tutoring and team teaching. It is true, however, that if a teacher sets up several groups in one already crowded room, then the difficulty of managing these more complex organisational patterns may offset some of the advantages. But it is also important, in a situation where large classes are an integral part of the teaching context, to take a broad view in considering innovative ways to implement 'size reductions' to the benefit of both teacher and learners. Teachers seem to be more constrained by their *vision* of what teaching in a large class *cannot* be, than by external factors like *class size*. *In the next chapter guidelines for the implementation of peer tutoring and cooperative learning will be provided.*

Obviously there must be a reason for this apparent reluctance of teachers to change traditional teaching methods to suit the needs of the large class. Generally it seems as if teachers are not very well informed with regard to the *planning* and *management* of, for example, strategies like cooperative learning or peer tutoring, nor are they aware of the possibilities these offer for increased *learner participation*, and, eventually, *effective learning*. This is confirmed by Alfery and Murray (1994), who undertook research in former Bophuthatswana schools. They found that although teachers would organise learners for group work, the lesson would proceed in transmission mode with the teacher dominating the teaching process. In the past, South African teacher training institutions focused mainly on teacher-centred teaching methods. Furthermore, prospective teachers were trained to teach under first world conditions, while the majority of them eventually ended up in schools where they had to cope with large classes and a lack of adequate resources and physical facilities (Thirion 1987:18–19). Tomlinson (1989:270) expressed a similar view when saying that the instructional repertoire of teachers the world over is very narrow, and that some are as *unprepared* to teach small classes as they are for large classes. As far as he is concerned they will teach no better in small classes than in large classes if they are not *well educated* themselves. In the same vein Bishop (1989:27) remarks that large classes *do* become detrimental to effective teaching if teachers are poorly skilled. *This highlights the need that teachers need more information as well as training with regard to the implementation of a variety of instructional strategies, especially with a view to teaching large classes.* This need will be addressed in Chapter 5.

4.5.2.3 Questioning skills

One of the skills in the instructional repertoire of the teachers observed that needs to be addressed, is the questioning skill. The first basic problem is that questioning is mainly aimed at the exact reproduction of previously learned material. Teachers need to be made aware that this type of questioning will have to be replaced by questions which, amongst others, stimulate thought and promote learner participation. The second problem is that questions are asked in a rather haphazard way. This can be an indication that not enough planning is done with regard to the use of questions during the lesson,

and that teachers don't really have very clear aims in mind for their questioning. A last problem is the way in which learners' answers to questions are handled by the teacher. Often no proper feedback is given to a learner—it is fruitless to ignore a learner's wrong answer and instead supply the correct answer. In order to use questioning as a teaching tool, learners have to be told why they are wrong and how they might improve.

Although the above-mentioned aspects of teachers' questioning behaviour are not necessarily directly related to class size, the limited amount of time the teachers observed by the researcher spent on questioning and probing, as well as their tendency not to wait long enough after asking a question, might be related to class size. Bourke (1986:567) found that as teachers of smaller classes apparently need less time for managing a class than teachers of large classes, the former have more time for probing and waiting which is more productive use of lesson time. The teachers observed by the researcher generally spent a great deal of time on classroom and behaviour management before and during the lesson, with the result that not much of the already short class period of only thirty five minutes remained for proper questioning behaviour. *In the next chapter the researcher will focus on questioning in the large class.*

4.5.2.4 Individualisation in the large class

Data obtained from both the literature study as well as classroom observation leave no doubt that *individualisation* is one of the more complex challenges teachers of large classes have to deal with. Long (1977:41) pointed out that the wide range of differences in intelligence, aptitude, mental age, interest, personality and learning styles that are present in a class with a large number of learners, have serious implications for methodology. In order to provide for individual differences and meet the learning needs of these learners, teachers can't use the same whole group teaching approach day after day but have to *vary* their teaching *and* assessment methods. As indicated earlier, in the classes observed not enough was done to vary teaching methods to meet learners' differing needs. What teachers did do, however, was to try and provide *individual contact time* by correcting learners' exercise books during seat work. Due to time constraints combined with the large number of learners, these efforts were generally not

very successful and only a few learners could be reached by the teacher. *In the next chapter the researcher will attempt to suggest ideas on how to provide for individual differences in the large class.*

4.5.2.5 Assessment of learners in the large class

As indicated in both the literature study (Bourke 1986:566–567; McLeod 1989) and the classroom observation, the two most common problems teachers have with assessment in large classes are that they don't have *time to assess* as frequently as possible and that they can't handle the *large amount of marking* involved. In order to overcome these problems, teachers used to focus on quarterly tests and examinations as their main assessment strategies, and they also limited the amount of homework given to learners. Nowadays, however, the new outcomes-based approach to assessment¹⁰ prescribes the use of continuous assessment—*daily assessment*—as well as the use of a variety of assessment methods to cater for different learners' needs. This implies that a variety of assessment activities should be built into the *daily* learning activities, a practice which will provide more opportunities for assessment *as well as* more work to assess. It further implies that teachers are going to need additional time to plan for assessment and to record learner progress and achievement, while learners will benefit from more teaching and learning time. Although nobody can deny that outcomes-based assessment will greatly benefit learners, more information with regard to specific strategies of implementing this new kind of assessment in large classes is needed. *This issue will be addressed in the next chapter.*

4.6 SYNTHESIS

The above-mentioned summary of findings suggests that teachers need information and training, as far as specific *instructional and classroom management strategies* to handle large classes effectively are concerned. The researcher therefore is of the opinion that teachers could overcome the problems of large class teaching and improve the

¹⁰ See Chapter 2 for a detailed discussion of outcomes-based assessment.

effectiveness of teaching large classes *considerably*, if they were given proper on the job training with regard to the following aspects of teaching:

- Large class management. Aspects of classroom management that will be discussed are *Organising the classroom space for teaching* and *Planning rules and procedures*.
- Classroom teaching in large classes. Aspects of teaching that will be discussed are *Planning for effective teaching in large classes*, *Questioning strategies in the large classroom*, *Whole group instruction as strategy for large class teaching*, *Cooperative learning as strategy for large class teaching*, and *Individualisation in the large class*.

These aspects will be addressed in the following chapter.

CHAPTER 5

STRATEGIES FOR LARGE CLASS TEACHING

5.1 INTRODUCTION

Throughout this dissertation (see Chapters 1 and 2) it has been emphasised several times that the large class phenomenon is likely to remain a feature of the South African teaching context, and that the situation where one teacher has to teach forty or more learners in one class will remain unchanged for the majority of state funded schools for some years to come. Furthermore, according to the revised norms and standards for educators, teachers are *expected* to acquire, amongst other competences, the competence to manage *classroom teaching* of various kinds in different educational contexts and particularly with *large* and diverse groups, as well as an understanding of the various approaches to the *management of classrooms* with particular emphasis on *large*, under-resourced and diverse classrooms (Department of Education 2000:17–18).

The importance of the above-mentioned two competences as coping strategies for teachers who have to deal with large classes, was highlighted in the literature study (see Chapter 3). Likewise, in the analysis of fieldwork data on large class teaching in South African schools (see Chapter 4), it was concluded that teachers need information and training with regard to specific *instructional and classroom management strategies* to handle large classes effectively. Thus, as a result of these findings, this chapter will focus on the following:

- Large class management. Under this heading, aspects of management that are considered essential for creating an *orderly and disciplined classroom environment* which is conducive to teaching and learning in large classes, will be discussed.

- Classroom teaching in large classes. Under this heading the focus will be on *Planning for effective teaching in large classes*, *Questioning strategies*, *Whole group instruction as strategy for large class teaching*, *Cooperative learning as strategy for large class teaching*, and *Individualisation in the large class*.

5.2 LARGE CLASS MANAGEMENT

Sound classroom management is one of the most important *foundations* of *effective instruction*, and as such, is closely related to the *quality of instruction*. Classroom management is a complex set of behaviours the teacher uses to create and maintain an *orderly and disciplined* classroom environment in which both teaching and learning can occur (Weber 1986:272). Thus, managing the classroom effectively is essential to effective instruction and, consequently, to learner achievement. Good (1979:54) observed that '[t]eachers' managerial abilities have been found to relate positively to achievement in every process-product study conducted to date.' Classroom management may therefore be considered the most fundamental—and also the most complex—part of a teacher's task. Although this certainly applies to all teachers irrespective of the size of the class they are teaching, sound classroom management and classroom order¹ are even more important in large class settings where *more* problems and disruptions are likely to arise because there are *more* learners to manage. Even a minor weakness in management such as fumbling with papers, tends to be magnified in the large class, because there is always some learner ready to turn temporary inattention into chaos and indiscipline. Brooks (1987:40) aptly remarks that 'unpreparedness and poor organization tend to become magnified in a large class.'

In the next paragraph, two aspects of management that are considered essential for creating an *orderly and disciplined classroom environment* conducive to teaching and learning in large classes, will be discussed. Although these aspects can be generalised to most (large) classrooms, classroom management is, of course, influenced by the

¹ It is important to note that classroom order doesn't mean the teacher lectures and learners are passive. Order implies that the learners are devoting as much of their time as possible focused on learning—it doesn't mean that they sit quietly while the teacher does all the talking.

specific context, the possibilities and constraints of the physical setting, as well as the characteristics of both the teacher and learners. Consequently, effective teachers adapt their managerial and instructional practices with these aspects in mind. The following two management aspects² will be addressed:

Organising the classroom space for teaching

Planning rules and procedures.

5.2.1 Organising the classroom space for teaching

Good classroom arrangement can help the teacher of the large class cope with the complex demands of teaching forty or more learners at a time, and can save a considerable amount of time for learning. Inadequate planning, on the other hand, interferes with instruction by causing interruptions, delays, and dead time (Emmer *et al* 1997:1–2). In order to create a classroom that permits orderly movement, few distractions and careful monitoring of learners, the following strategies can be useful.

5.2.1.1 Use a room arrangement compatible with instructional activities

Since it is suggested later on in this chapter that teachers of large classes focus on the use of cooperative learning and small work groups—two to four learners—a lot of time and effort will be saved if furniture is permanently arranged in a way that permits working in groups. Although it is advisable that learners face each other during group work, it is *not practical* if a large number of groups—often between ten and fifteen—have to be accommodated in a regular sized classroom. It is therefore recommended that furniture is arranged *horizontally* in rows, with desks grouped together in clusters of four each. This enables learners to work together in pairs or in groups of four during cooperative learning or small group work, *or* to face the chalkboard and the teacher during direct instruction, without having to crane their necks, move desks around or get out of their seats. As room arrangement can facilitate or interfere with group work, it is important that teachers experiment with different ways to arrange the class for small group work, until an alternative is found

² Although classroom management involves many aspects, only two are considered relevant for the purposes of this study. Management of the cooperative classroom is discussed under the heading, *Cooperative learning as strategy for large class teaching*.

that suits their circumstances best. Teachers should guard against making too big a fuss about the logistics: the goal is to keep it as simple as possible and to move past the logistics swiftly so that learners can get on with the work.

Seating arrangements and the composition of groups³ should preferably be finalised during the first two weeks of the new school year, so that everyone can start concentrating on the critical tasks of learning. Assigned seats allow the teacher to make a seating chart from which learners' names can be learned quickly. Getting to know learners' names is very important in the large class. Due to the number of learners in the large class, learners might feel that the large class atmosphere is one of anonymity in which they feel lost or out of place. These factors, according to Wulff, Nyquist and Abbott's (1987:21) observations, generally lead to passiveness and decreased motivation, and eventually the weaker learners particularly might fall by the wayside. However, getting to know learners' names shows that the teacher cares about the learners in her classroom and might just motivate passive learners to become actively involved in their learning, thus contributing to a positive learning environment.

Learning names of learners in large classes might be a difficult and lengthy task, but it is an important task that should be tackled from the first day. According to Nolasco and Arthur (1988:10), observation has shown that a teacher's inaccurate use of or failure to use learners' names, has a direct relationship to inattention and discipline problems. Knowing learners' names allows the teacher to call upon learners with confidence as well as to identify troublemakers. The following strategies might help to set about the process of learning names.

- Make a seating plan which can be referred to constantly during the lesson, and insist that learners sit in the same places every day.
- Keep a copy of the class list in a plastic envelope as a portable aide-memoire.
- Hand back assignments or books by calling out learners' names, especially during the first few weeks of term.
- Let learners wear name tags or stickers during the first few weeks. Alternatively,

³ The grouping of learners and the composition of groups for group work are discussed under paragraph 5.3.4, *Cooperative learning as strategy for large class teaching*.

learners could make name cards on folded sheets of paper or card which are then displayed in front of them throughout the lesson. Name cards can be collected at the end of each lesson and issued again at the beginning of the next lesson, one by one. This is a useful way for teachers to test their memory.

5.2.1.2 Be sure learners are easily seen by the teacher

In an expertly managed classroom, desks are arranged so that the teacher can effectively monitor learner behaviour and move quickly to a spot where a problem may be developing. If the teacher cannot see all learners, it makes it difficult to know when a learner needs assistance or to prevent task avoidance or disruption. In the large classroom it is often difficult to maintain clear lines of sight between the teacher in the front of the classroom and the learners at the back. It is therefore important that the teacher should find ways of maintaining eye contact with learners, for instance by moving around instead of standing in front of the chalkboard for the whole period.

5.2.1.3 Placement of learners with special needs

Since more and more learners with special needs are being accommodated in the regular classroom, teachers need to think of ways to meet the needs of learners who are physically or cognitively handicapped, or who have some characteristic that affects their classroom performance. Meeting the needs of these learners as well as coping with the challenges of teaching a large class, requires a conscious effort by the teacher to adapt common instructional planning and management strategies. Following are suggestions for planning and managing instruction for learners with special needs.

- *Learners with emotional and/or behavioural problems*

These learners should be seated where they can be easily seen by the teacher. This enables the teacher to recognise behavioural cues that may precede an outburst, and to intervene in good time to prevent their losing control. Special attention should also be paid to the peers they are expected to work with: these learners often feel insecure, and would therefore benefit from a supportive environment in which they feel safe and accepted by peers.

- *Learners with attention deficit disorder*

Behavioural characteristics of these learners include distractibility, short attention spans, impulsiveness, an inability to organise, and a high level of movement (Emmer *et al* 1997:189). Coping with the demands of a large class as well as with learners displaying the above behaviours, can become an almost impossible task for even the most organised of teachers. Strategies to keep these learners on task should therefore be developed. For example, in order to observe and monitor the behaviour of these learners closely, they should be seated where the teacher can maintain eye contact with them. This enables the teacher to intervene whenever necessary to keep these learners *on task*. Furthermore, teachers should refrain from frequently being drawn into arguments and power struggles with these learners, but should rather focus attention on their positive characteristics and behaviours and provide praise and support. Also, seating them with peers that are sympathetic and willing to repeat and explain directions and instructions, might help to motivate them to stay on task.

- *Learners who are hard of hearing*

It is usually necessary to seat these learners near the centre of the classroom, and as close as possible to the front. The classroom should be well lighted so that they can see the teacher's face to lip-read. Also, teachers should refrain from standing in front of windows when talking, since the glare behind them makes it difficult for learners to see their faces. Furthermore, the teacher must make a habit of repeating important information or instructions, since these learners might miss out on important information and are often reluctant to ask the teacher to repeat. If possible, enlist the assistance of a bright (and patient) peer to help with note taking, repeating or rephrasing instructions, or restating other learners' questions and responses during classroom discussions.

- *Learners who are visually impaired*

These learners should be seated in front of the classroom with their backs to the windows, because glare on the person who is speaking or on the chalkboard interferes with their ability to use partial vision. When using the chalkboard or overhead projector, the teacher should read aloud anything that is displayed there and allow the

learner to walk closer to the board to see what is written there. Fellow learners could provide help with note taking.

5.2.1.4 Use double-class arrangements

Although relatively unknown in South African secondary schools, the double-class system (Valerien 1991:16–17) is a system that can help teachers to cope with large classes *and* ensure that there is no lowering of teaching standards. However, the successful implementation of this strategy depends *solely on the initiative and sustained cooperation of the school's management*.

The double-class arrangement involves knocking down partitions between classrooms in order to create one large classroom that can accommodate as many as 120 learners. Two teachers are assigned to one classroom: the one teacher presents the lesson while the other teacher maintains discipline and monitors learners' independent seatwork and homework. According to the principal (Middleton 1997:6) of a secondary school in Sasolburg where this strategy is being implemented, it has several advantages. Instead of a teacher offering the same lesson at least four times or more during the week, this number will be considerably less, depending on the number of groups accommodated in one large class. Furthermore, teachers get the opportunity to specialise, for example, in that specific branch of a subject in which they are most interested. Also, working together as a team makes it easier for a teacher to cope with the administrative and teaching demands of the large class.

5.2.2 Planning rules and procedures

Good classroom management is based on learners' understanding of the behaviour expected of them. A carefully planned system of *workable* and *appropriate* rules and procedures enables the teacher to communicate her expectations with regard to proper behaviour to learners. Rules and procedures should be conveyed to learners at the start of the school year and consistently maintained throughout the year. It goes without saying that rules and procedures are vital in the large classroom. It is just not possible for the teacher—confined to a room with limited space—to teach a diverse population of forty or more learners, and at the same time handle administrative tasks and assess learners, in the absence of rules and procedures. They are important

factors in creating a productive working environment, and also allow for easy classroom management so that learning can continue unimpeded.

5.2.2.1 Classroom rules

Rules identify general expectations, in other words, rules refer to the do's and the don'ts in the classroom. Although many different rules are possible, teachers should keep the number of rules to a minimum and establish a reasonable number of *enforceable* rules that cover general conduct in the large class. Fewer rules, consistently enforced, are more likely to be effective than are many rules. Enforcing a great number of rules together with the demanding task of teaching a large number of learners, might soon become an impossible task. And when rules go unenforced, the teacher's ability to manage the classroom is greatly diminished, something the teacher of a large class can ill afford. Examples of rules are:

- *Be in your seat and get ready to work as soon as you enter the classroom.* This rule reminds learners that time is a valuable resource that should be utilised and not wasted.
- *Listen and keep quiet when someone is talking.* This rule reminds learners to have respect for other people and to listen carefully when a peer or the teacher is speaking. Particularly in large classes, people should take turns when talking.
- *Put up your hand if you want to attract the teacher's attention.* This rule addresses learner behaviour that, if unregulated, can cause chaos in the large classroom.
- *Respect other people's property.* This rule may refer to keeping the classroom neat and clean, returning borrowed property, not writing on desks, *et cetera*.

5.2.2.2 Classroom procedures

Procedures, or routines, also communicate expectations for behaviour. They usually apply to specific activities, and are directed at *achieving* something rather than at *forbidding* some behaviour or defining a general standard (Emmer *et al* 1997:17–18). For example, a teacher will set up procedures with learners for *administrative routines* (starting on time, taking attendance, collecting money, collecting assignments, returning homework), *learner movement* (entering and leaving the room, going to the cloakroom or lockers), *teacher-learner interactions* (getting the teacher's attention

when help is needed, answering questions, dealing with matters of a personal nature), and *learner-learner interactions* (giving help, socialising, participating in discussions and group work). It is clear from the examples, that *procedures* are at the very heart of discipline and order. Therefore, particularly for teachers of large classes, it is well worth reflecting on the procedures they use to see if they promote discipline and order and minimise disruption.

Nolasco and Arthur (1988:23–24) provide the following practical hints with regard to procedures in the large classroom:

ACTIVITY	HINTS
Receiving the learners.	The teacher should try to get to the classroom first. A position near the door allows the teacher to establish individual contact with learners as they arrive.
Starting the lesson.	Engage learners in activities as soon as they sit down. For example, hand them their homework to check through, give them five-minute, imaginative tasks related to the day's lesson to do in pairs, while waiting for the rest to settle down. These tasks can be put on their chairs or desks in handout form or written on a particular part of the chalkboard before learners arrive.
Collecting and returning work.	Make learners at the front of each row responsible for collecting books, assignments, <i>et cetera</i> . Placing marked work on the desks according to the seating plan referred to earlier <i>before learners arrive</i> , is a useful way to minimise disruption and gives learners something to look at as soon as they come in.
Moving learners into groups.	Instructions for group work should be given in stages. The teacher should always check for understanding of the instructions by asking learners to demonstrate. Use predetermined signals to move the different groups into position.
Getting materials back.	Number learning materials—reusable handouts, readers, science equipment, <i>et cetera</i> —that have to be collected again, and allocate a number to each learner so there is no confusion about who has what. A record book can be used for this purpose.

In conclusion: from the foregoing it should be clear that efficient classroom management provides a key to better use of teaching time. Effective teachers who, amongst others, organise their physical space well and have workable rules and procedures in place, manage to squeeze more minutes of instruction into the amount of time they have allocated than do less effective teachers. Beginning classes promptly, having materials for lessons prepared in advance, and having learners trained to perform routine tasks without being told, all help teachers use their time well—and effective classroom management is a key factor in this wise use of time (Eggen & Kauchak 1996:35).

5.3 CLASSROOM TEACHING IN LARGE CLASSES

Once the classroom is organised, seating arrangements have been sorted out, rules and procedures have been developed and taught, and learners are attentive and ready to participate, the scene is set for serious teaching and learning. *It is at this point that management and instruction meet.* In the next few paragraphs, a description will be given of how to plan instruction in ways that support learning in the large class.

5.3.1 Planning for effective teaching in large classes

Planning for effective teaching is a demanding and time consuming part of any teacher's job, yet no other part of a teacher's role is more important than formulating good lesson programmes. Well-planned, interesting lesson programmes with a variety of appropriate activities are a key to holding learners' attention. Poorly planned, unimaginative lesson programmes with limited opportunities for learner involvement in the form of group work activities, seatwork activities and assessment activities, on the other hand, are boring or frustrating to learners and create conditions for discipline problems to develop (Emmer *et al* 1997:85).

Although *all* teachers, irrespective of the size of their classes, need to pay careful attention to planning for effective teaching, this becomes even more crucial for teachers of large classes. Teachers can't face large groups of learners without, for example, clear notes on the nature and sequence of classroom activities, step-by-step procedures for the management of learner interaction—discussion, group work,

assessment—or brief guidelines to assist them to organise time and materials for a lesson programme. A well-planned lesson programme will also ensure that a teacher doesn't become flustered but can resume a lesson with relative ease after an interruption, which is likely to occur more often in a large class due to the greater number of learners. Without a proper plan, even the most experienced teacher will sooner or later encounter problems with disruptive, inattentive learners. Very often teachers then blame the large class situation for the chaos, while they have no-one else to blame but themselves.

A well-planned lesson programme can also provide a framework for reflection and assessment. It enables the teacher to make adjustments after having taught a lesson, if necessary, thus preventing her from using the same ineffective strategies, activities or procedures in future. This is more efficient than starting from scratch each year, thus saving a lot of time and effort. In this way it also makes it possible for a teacher to build up a repertoire of interesting and productive teaching and learning strategies that work well in large classes.

Brief lesson programme outlines, kept on file or posted on the notice board, enable learners to catch up on work done on days they might have been absent. This practice could save a considerable amount of time, making it possible for teachers of large classes to concentrate energies and talents on their numerous tasks at hand. Outlines of weekly lesson programme plans could also be handed to learners in advance, so they know exactly what will be covered each day and could prepare themselves accordingly. Learners could then add their notes while the teacher talks, and use these notes to revise the lesson programme at the end of the day. Apart from organising the content for learners, providing them with a road map to keep them on course and helping to focus their attention—thus making teaching and learning more effective—this also shows learners that the teacher has organised plans and goals for the class. Learners prefer order to disorder, and behave better in a well organised class.

5.3.1.1 Daily planning

There are five basic types of planning in which teachers regularly engage: yearly planning, quarterly planning, unit planning, weekly planning and daily planning.

Although all these types of planning are important for effective teaching, for the purposes of this dissertation the focus will be on *daily planning*.

While all teachers plan, they do not all plan in exactly the same way. Some prepare detailed notes on the lesson programmes they intend to teach. Others may jot down a few notes in a preparation book. Experienced teachers need not always *write out* complete lesson programmes on a regular basis, since they are able to do more thinking and less writing during the planning stage because of their experience. However, even experienced teachers can't face a class for long without having thought about the two basic aspects of lesson programme planning, *viz what* do I want the learners to be able to learn and do as a result of teaching, and *how* can I best help them to learn it (Killen 1998:vii). These basic aspects together with other generic aspects with regard to a lesson programme plan will consequently be discussed.

5.3.1.2 Generic components of a lesson programme plan

A lesson programme plan is a written description of how learners will progress towards specific outcomes. It clearly describes the teaching behaviour that it is hoped will result in effective learning. No matter what approach a teacher uses when planning, all lesson programme plans include six generic components, *viz* preplanning tasks, introduction, the teaching phase (lesson body), closing, extended practice, and assessment. The specific content of the components will vary with different instructional models, because each model enables learners to progress towards lesson programme outcomes in a different way (Price & Nelson 1999:35–40). Next, a brief description of the different components will be given.

- Preplanning tasks

Generally, this component consists of *determining the lesson programme outcomes, content analysis*, deciding which *instructional model* to use, *structuring* the lesson, and planning and preparation of *classroom activities*.

Since outcomes-based education uses an approach called backward mapping, it means that teachers must begin their instructional design by *first* determining the lesson programme outcomes, *i e* deciding where they want learners to end up. 'Usually this

means planning from the end—with their Exit or Critical Outcomes of greatest significance—and building the curriculum and its essential knowledge and competence back from there' (Spady & Schlebusch 1999:32). The *second* step involves content analysis. Content analysis helps teachers to decide on the content to be taught. Although the focus in outcomes-based education is less on the content of subjects and more on the development of skills, content is still essential because it provides scaffolding that enables learners to develop these essential skills. This means that content has to be selected with a view to accomplishing predetermined skills. The *third* step involves deciding which instructional model will be most appropriate to help learners achieve the lesson programme outcomes. For example, if the outcome is that learners should gain insight into the new content being presented, the problem solving strategy could be used. If the outcome is to master certain concepts or principles, the inductive model could be used.

Identifying *key questions*⁴ with regard to the content to be taught in the teaching phase, might be helpful in *structuring* a lesson programme. A *mind map* is a useful way to generate these questions (Brown & Wragg 1993:44). To develop a mind map, the topic of a lesson programme is written in the centre of a page, followed by a set of sub-topics or questions around the topic, the nature of which will depend on the *outcomes* of the lesson programme. Once all relevant sub-topics have been identified, the next step is to redraw or tidy up the map, so that similar topics are clustered together. At this stage key questions as well as supplementary questions that might structure the lesson programme can be identified and written down. According to Brown and Wragg (1993:45), the best key questions help the lesson to move on, while the least effective ones don't take it anywhere; only back to what learners already know. It is therefore important to focus on questions that allow learners to think, rather than asking content recall questions. The last two steps involve analysing anticipated answers and appropriate responses, and deciding on the level and order of the questions. Several arrangements are possible, depending on the interrelations among answers (Dillon 1988:66).

⁴ See 5.3.2 for a detailed discussion of questioning skills.

The *last* step involves the planning and preparation of classroom activities. Although these activities can be used at several points during a presentation, most teachers use activities during the extended practice phase (see below). Typical activities include discussions, seatwork (for example completing worksheets), homework, peer and self assessment, recitation—a question-and-answer sequence to check learner understanding—and enrichment activities. Lesson programme outcomes will help the teacher determine what activities to use. Two considerations are important in this regard: first, which skills or concepts must be learned to reach the outcomes, and, second, which activities will help learners the most. Furthermore, in addition to their potential for helping learners achieve the outcomes, activities also have the potential to maintain *learner involvement* throughout the period. For this reason, two or three activities rather than a single long one, should be planned (Emmer *et al* 1997:86). A variety of short, imaginative activities maintains learner interest and prevents inattention. Finally, once the teacher has decided on the activities to be used, worksheets, enrichment activities, homework, assessment activities, *et cetera*, should be prepared in detail. (This also includes making sure that enough copies are available for the number of learners in the class.)

- Introduction

The purpose of the introduction is to help prepare the learners' minds for the learning to come. A teacher will typically want to tell learners what they are going to learn, why it is important, and how it builds on what they already know, as well as getting them excited about the lesson programme. Attracting learner attention and getting them excited about what is to come, is particularly important in the large class. If the teacher cannot manage this during the first few minutes of class, inattentiveness and a lack of interest will soon give rise to disciplinary problems—which almost always hamper effective teaching and learning. Although teachers have their own ways to attract learners' attention and pull them into the lesson, *advance organisers*—written on the chalkboard, put on the overhead projector or duplicated for each learner—can be used to organise learners' thinking and allow them to see where they have been and where they are going. An advance organiser

is a statement preceding a lesson that is designed to preview the material and link it to content that learners already understand. It is more general and abstract than the

content to be structured and subsumes the material that follows (Eggen & Kauchak 1996:222).

Advance organisers can also be in the form of note-taking guides, diagrams, visual outlines, webs or mind maps, indicating the connection between new content and previously taught material, prior knowledge, or personal experience, in which case it is referred to as a *graphic organiser*.

- The teaching phase (Lesson body)

The initial instruction, related directly to the lesson programme outcomes, occurs during the *teaching phase*. Most of the planning time as well as teaching time is spent on the teaching phase. What happens here will depend on the *teaching strategy* selected by the teacher. Different strategies such as direct instruction, discussion, group work, cooperative learning and problem solving are available. No strategy will be the best in all circumstances: the teacher has to choose teaching strategies according to what it is that she wants her learners to do as a result of her teaching. For example, the teacher might decide to develop learners' communication skills such as stating their ideas clearly, and listening and responding to others. In such a case discussion might be the most suitable strategy. Or, she might require learners to gain a deep understanding of a certain topic rather than just memorising bits of it. In this case the problem solving strategy might help them achieve this outcome. The best strategy is the one which is most effective for reaching particular outcomes in specific situations.

- Extended practice

During *extended practice*, learners try out the new content as the teacher carefully monitors their progress. Learners will usually need extended practice opportunities prior to assessment. These opportunities are provided through activities, seatwork, group work, and homework (see *Preplanning tasks* above for more detail). Since learner engagement is harder to maintain during lengthy extended practice sessions, a rule of thumb is to break a specific activity into smaller segments and have a discussion, questions or review between them. This change in format will help

refocus learner attention, and will give the teacher the opportunity to check learner understanding and clear up problem areas before learners continue.

Although the teacher usually does the questioning, a variation is to let learners divide themselves into pairs or small groups and take a few minutes to agree on *one* question that they feel it is crucial for the teacher to respond to. This task leads to some peer tutoring and learning, as one team member answers another's question in the course of searching for a question that everybody agrees on. Also, hearing learners' questions is an excellent way for a teacher to get feedback on how well learners are learning. The quality and substance of their questions indicates areas of strength and gaps in understanding (Frederick 1987:50).

- Closing

The *lesson closing* helps learners tie it all together. It may either follow the teaching phase, or it may follow extended practice. The closing may include one or more of the following: a summary of the key aspects of the lesson programme, opportunities for learners to draw conclusions, a preview of future learning, a description of where or when learners should use their new knowledge and skills, a time for learners to show their work, a reference to the lesson introduction (Price & Nelson 1999:38).

- Assessment

The *general developmental purpose* of outcomes-based assessment is to allow both teacher and learners to know if learning has occurred; in other words, whether learners have accomplished the predetermined outcomes. Falling under this general purpose, are the following three other important purposes of assessment in the school context.

Diagnostic assessment

This type of assessment is focused on finding out, by way of asking questions or administering a pre-test prior to teaching or at the beginning of a lesson, *what* learners know about the lesson programme topic, *i e* what the learners' entry levels are. Diagnostic assessment provides teachers with information on the learners' readiness for and interest in their teaching, their pre-knowledge,

pre-skills, pre-attitudes or values (Van der Horst & McDonald 1997:171). This information is very useful when planning lesson programmes, because it ensures that teaching is relevant and aimed at the appropriate level. But effective teachers *also* need to be aware on a *continuous* basis—throughout each lesson programme or lesson unit—of learners’ understanding and attention with regard to the subject matter. This ongoing type of assessment is called formative assessment, because it forms or shapes learning. This differs from using assessment solely to describe how much a learner knows at the end of a lesson. Formative assessment is an essential element of outcomes-based assessment and underpins all assessment in South African schools.

Formative assessment

This type of assessment is built into learning activities on a continuous basis, and as such it influences and informs the teaching-learning process through *constructive feedback*. It enables learners to become aware of whether or not there are any gaps in their understanding of specific subject matter, and it enables the teacher to determine whether it is appropriate to build on the current lesson programme during the next session, or whether the lesson should be retaught, or the instructional model, activities or materials need to be changed. An *assessment cycle* is followed during the class period—or class periods—in which the teacher assesses, plans for teaching and learning, puts the plans into action, assesses, provides feedback, adapts the plans, implements the adapted plans, assesses, *et cetera*. This indicates that teaching, learning and assessment are inextricably linked (Lubisi, Parker & Wedekind 1998a:28), and ‘that assessment is not the final point of teaching and learning but something which is used to guide and direct future teaching and learning’ (Sieborger & Macintosh 1998:10–11). This means that teachers have to *plan* teaching with assessment in mind, rather than thinking of teaching and assessment as separate activities.

Formative assessment can be carried out by the teacher *informally*—without the learner realising that it is happening—as part of normal classroom teaching, for example through monitoring homework, seatwork and group work activities, asking questions in class, observing learners at work, quizzes,

et cetera. It can also be done in a *formal* way, in which case the learners are aware that they are being assessed. Formal assessment is not part of normal classroom teaching, and can take the form of journals, diaries, project work, portfolios, practical work, essay assignments, reports, discussions, *et cetera*. Using formative assessment continuously throughout the teaching-learning process, gives teachers the opportunity to vary the kind of assessment activities because it takes place a number of times during the day. This is valuable in the large classroom, because it keeps learners involved and attentive, prevents boredom and thus discipline problems. It also helps to emphasise different aspects of work, which is a help for learners who do well in some areas but not in others (Sieborger & Macintosh 1998:26–27).

Traditionally it was the teacher who assessed the learner. Fortunately for the teacher of the large class, assessment in outcomes-based education is more overt and involves more than one assessor. Besides teacher assessment, formative assessment also includes *self-assessment* and *peer assessment*. Self-assessment involves learners in monitoring their own learning processes and helps them to understand what is expected of them. It also encourages reflection and enables learners to take greater responsibility for their own learning (Le Grange & Reddy 1998:19). Furthermore, it frees the teacher to work with individual learners requiring help. However, self-evaluation is not an easy process, and learners cannot be expected to acquire the skills of assessing themselves well without lots of practice. Also, learners should be given the opportunity to explain their understanding of the assessment activity, their assessments and assessment criteria should be planned by the teacher, and feedback should be given to learners after self-assessment (Sieborger & Macintosh 1998:64–65). Like any teaching, this process needs to be guided and monitored by the teacher.

Since regular feedback plays such an important role in outcomes-based education, it can mean stacks of work for the teacher of the large class to assess on a daily basis. Peer assessment is an alternative to using the teacher as the sole assessor, thus being particularly useful for the teacher of the large class. Although one cannot expect learners to check complex assignments

calling for advanced levels of knowledge—for example essay scoring—many daily assignments—for example quizzes—are of a more routine nature and can be checked by learners. Peer assessment involves the assessment of a learner by his class mates, and helps to develop the skills that are needed to assess their own progress. As with self-assessment, it is important that learners understand the assessment criteria, that teachers teach their learners the procedures for assessment and ensure that they know how to handle the responsibility, before any reliable peer assessment can be done. A routine can be established for exchanging papers for checking to save time. However, vary the pattern every few weeks to avoid ‘too friendly’ grading (Emmer *et al* 1997:43). Also, describe, and model to, learners how the checking should be done. For example, mark or circle incorrect answers, put ‘graded by’ and their name in a specified place on the paper, *et cetera*. The teacher plays a facilitating role during the peer assessment process by moving among the pairs, monitoring them closely, keeping them on-task, answering questions, and providing her opinion when learners are confused and request a teacher judgement.

In the large classroom, marks can be recorded by having learners call them out. If learners call out grades, papers should still be collected and examined occasionally to ensure that learners are honest when checking papers and assigning marks. Utilising peer and self-assessment does not relieve teachers entirely of the responsibility of assessing learners’ work. Teachers will still need to collect and spot-check learners’ work in order to find out whether work has been checked correctly and where problems are occurring. This information is necessary to enable teachers to make decisions concerning reteaching, regrouping, or moving on to the next lesson programme. Also, if a learner feels that his paper was marked incorrectly by a peer, a system could be used where the learner writes a note to that effect on a specific part of the paper (Emmer *et al* 1997:43). The work can then be verified later when the teacher checks the papers.

Summative assessment

This type of assessment refers to a main test or examination that takes place at the end of the term or school year, and is not part of the learning experience. Traditionally, the aim of this assessment is to determine how much of the subject content the learners know, and if they pass the test or examination, they are promoted to the next grade. However, in outcomes-based education, summative assessment should also be used to give formative feedback to the teacher, who then has to feed this information into the next *planning* session.

In conclusion: teachers of large classes who take time to plan lesson programmes and assessment well, have more time available, make their difficult task of handling a large number of learners easier, ensure that learners spend optimum time on task, and can teach efficiently, effectively and with self confidence. Another skill that teachers need in order to teach effectively, is the ability to ask *thought provoking questions* that actively involve learners in the teaching-learning situation, while helping them to master the specific lesson programme outcomes. Thus, questioning strategies will be discussed consequently.

5.3.2 Questioning strategies in the large classroom

Ever since Socrates, *questioning* has been a fundamental tool of teaching and learning. To Socrates, the purpose of teaching was not the pouring-in of knowledge, but the drawing-out and systematising of knowledge already in the mind of the learner (Duminy, Dreyer & Steyn 1990:191). As such, properly phrased questions lie at the very heart of developing *thinking skills* in learners. In order to teach effectively, teachers should be *effective questioners*. This means that they have to be familiar with the impact different questions have on communication and learning in the classroom, and find ways to *improve* their questioning skills.

The findings presented in the previous chapter suggest that teachers did *not* use effective questioning techniques. For example, although teachers *did* use questions as a teaching and learning tool, the majority of questions depended only on rote memory for a correct answer. Questioning was focused on recalling and repeating previously memorised facts—which makes their lessons revision lessons rather than anything

else—while the development of higher order thinking skills that encourage learners to find relationships between ideas, draw conclusions, form generalisations, apply skills and understandings to new situations, *et cetera*, was neglected. The affective aspects of learning, which concern values, attitudes, feelings and beliefs, were also avoided. Furthermore, questions were asked in a rather haphazard way. There was no evidence that the teacher tried, through the use of a series of properly planned questions arranged in a logical sequence and around a central core, to develop or bring home certain concepts. In order to teach effectively it is important that a series of questions should be prepared beforehand *and* be linked to the lesson outcomes and the underlying purpose of the lesson (see 5.3.1 above).

A further problem with regard to the questioning skills of the teachers observed, is that they showed little tolerance in *waiting* for learner replies. The teachers generally required answers almost immediately, thus creating the impression that no serious thinking but only rapid recall of information is required. According to Sadker and Sadker (1986:142):

If teachers can increase the one second of silence which usually follows a question to three seconds or more, student answers will reflect more thought, and more students will actively participate in the classroom.

Although the problems with questioning highlighted so far are not necessarily related to class size but a feature of most classrooms, using *properly planned* questions, asking *fewer* but more *meaningful* questions that stimulate thought and encourage the development of higher order thinking skills, and allowing learners *more time* to think about their answers, can benefit teaching in large classes considerably. The skilled use of questions—for learners and for teachers—is a way to shift energy back and forth in large classes (Frederick 1987:48), thus creating opportunities to involve reluctant and passive learners in the teaching-learning process. Even though big classes require extra effort to counter learner passivity and ‘to poke and prod students into states of mental involvement’ (Gleason 1986:10), *it can and should be done*.

One approach suggested by Geske (1992:152–153) is the *three minute thesis*. After the teacher has discussed a certain issue, an open-ended question is written on the

chalkboard or put on the overhead projector. Learners then get three minutes to briefly write down their reactions. After three minutes, the teacher circulates throughout the classroom and asks learners to express their answers. The teacher need not put one learner on the spot, because the primary aim is to convey important information and raise further questions. In the end, as in brainstorming, a number of ideas are articulated and perhaps even listed on the chalkboard. This technique overcomes some problems. It makes learners active participants rather than passive listeners. And, shy learners are able to participate because they have their answers written right in front of them, and they are not put on the spot.

Another approach to questioning, is to address a question to the class and ask two learners sitting next to one another to discuss it for five minutes⁵. If the idea is to stimulate discussion, the best kinds of questions are those requiring learners to take a side and supply reasons to support their choice. After five minutes, a lot of energy and interaction is generated during the report-back stage, which creates the opportunity for all learners to become involved. It is important to remember, though, that questions should be *carefully planned* before the lesson, and should be *related* to the *lesson outcomes*.

5.3.2.1 Learner generated questions

Frederick (1987:49) points out that learners also have their questions and ‘even in large classes we can provide ways for them to ask questions and learn how to formulate better ones.’ Asking questions about a specific topic is essential in coming to terms with it, and should be encouraged. *It also provides essential feedback to teachers of large classes on how well learners are learning.* There are many ways of generating learner questions. Towards the end of a series of lessons on a specific topic, learners could be asked ahead of time to write down one or two questions under the heading ‘*A question I still have about ... but have been afraid to ask, is ...*’. Learners can either come and put their questions to the teacher on the appointed day, or write them on a card and submit them ahead of time—a technique which helps shy learners’ questions to be heard. Learning is enhanced when learners learn to ask their own questions. Using this skill, learners become able to determine what is important

⁵ See also the informal cooperative method, *Think-pair-share*, discussed below.

and unimportant in the information they are studying. 'They learn to investigate problems for themselves and become independent of the teacher and interested in the subject' (Kissock & Iyortsuun 1982:118). In conclusion, learners need the tools for *lifelong learning*, and this includes the ability to ask questions and discover answers.

Another approach to generate learner questions is to announce in the middle of a lesson, '*Let's take five minutes for questions.*' The idea is to respond concisely to learners' questions. If the question is a good one, give credit to the learner. If a learner's question relates to content covered in an earlier lesson, politely point that out and suggest the learner check notes with a peer. Although learners might object at first, it is also a good idea to encourage learners to answer their peers' questions. Hearing learners' answers might indicate gaps and areas of strength in understanding to teachers. At the end of a lesson, learners could also be required to take a few minutes and generate a test question on the lesson content. The teacher might just get good ideas for questions, and learners will take those few minutes of class seriously (Gleason 1986:10).

Since the typical pattern of interaction in the classroom is one in which the teacher gives information and asks most of the questions, most teachers might not feel comfortable when learners ask questions in class. Some teachers might feel that learners are challenging their authority or knowledge about the subject when they ask questions. Many teachers also find it difficult to admit that they don't have all the answers. According to Kissock and Iyortsuun (1982:119) '[t]hese feelings are sometimes based on the belief that the teacher must know everything about a subject and be able to answer any question.' This is unrealistic: teachers must be willing to admit that they don't have all the answers, and want to work with learners to find answers. This demonstrates that teachers too are students of the subject and interested in learning more about it.

Kissock and Iyortsuun (1982:120–121) suggest the following changes in the actions of teachers to enable learners to develop questioning skills.

Increase wait time after asking a question and listening to the response. This will increase the opportunity for learners to ask questions.

Teachers should make greater use of thought-provoking questions so that learners will have a model to follow in phrasing their own questions.

Know where to find information and work with learners as they seek answers to their questions. Do not always give the answer when a question arises.

Get learners interested in the subject so that questions arise from their interest and not solely to gain the teacher's favour or reward.

Encourage learners to ask questions and show respect for the questions they ask.

Create a classroom climate where the teacher is supportive, but does not need to reward every comment that is made. Rewarding every comment can suggest that the answer is correct and stop learners from providing their own explanations.

Arrange the seats so that learners can comfortably carry on a dialogue with others in the classroom.

In the next paragraph, the focus will be on the *types of questions* that can be asked in the classroom.

5.3.2.2 Types of classroom questions

Two domains of questions—cognitive and affective—are used to describe the types of questions teachers should ask. Cognitive questions are concerned with engaging learners in a variety of intellectual processes, while affective questions are concerned with emotions, attitudes and values. Within each domain there is a hierarchy of levels representing different types of thought or valuing processes. When applied to questioning, the cognitive and affective taxonomies serve the following purposes (Kissock & Iyortsuun 1982:9). First, they direct teachers' attentions to the changes they want to see in learners as a result of teaching. Teachers who can use the taxonomies with confidence can easily determine the intellectual and affective level

of their instruction and elicit different kinds of thought processes by classifying the questions they ask in examinations, for homework or during the lesson. Second, they can be used to evaluate instructional materials, for example textbooks. Being aware of the nature of questions in textbooks and other material enables teachers to select those that encourage learners to develop and practise critical thinking abilities. Third, they encourage learners to participate actively in the teaching-learning process by responding to and generating questions that require higher levels of thinking and valuing.

As far as the cognitive domain—the most commonly used of the two domains—is concerned, Bloom's *Taxonomy* (1956) is probably the best known system for classifying educational outcomes as well as classroom questions. Table 5.1 presents the cognitive domain taxonomy, key words associated with each level, and a description of the different thought processes involved. It indicates how the taxonomy is hierarchical, in other words it is not possible to answer higher level questions without being able to answer questions at the lower levels. Questions at the lowest levels of the taxonomy require information that has already been presented and usually ask for a correct answer. At the knowledge level learning is the same as remembering, and there is no attempt to see if learners understand or can use the information remembered. At the comprehension level understanding is demonstrated by explaining concepts or rephrasing ideas, *et cetera*.

At the application, analysis and synthesis levels, questions require the *use* of any information available to the learner, and *answers* that have many parts or more than one correct answer. The use of information is demonstrated through problem-solving, analysis of information, and the creation of new ideas. The highest level, evaluation, requires learners to judge ideas, aesthetic works, *et cetera*, based on personal or given criteria.

Table 5.1 Cognitive taxonomy

Taxonomy level	Type of thinking	Key words
Evaluation	Judging the value or merit of information or material based on personal or given criteria.	Judge, argue, appraise, assess, evaluate, justify.
Synthesis	Putting components together to create a pattern or structure which could be new or different.	Construct, propose, plan, design, synthesise, develop, assemble, produce, solve (more than one answer is correct).
Analysis	Breaking down information into its separate components so that its structure can be understood.	Analyse, break down, diagram, distinguish, inventory.
Application	Using learned information in relevant situations (putting knowledge and comprehension to work).	Apply, solve (one answer only is correct), dramatise, use, show, illustrate.
Comprehension	Understanding the meaning of information.	Discuss, describe, explain, illustrate, give examples, paraphrase, rephrase, tell in your own words.
Knowledge	Remembering previously learned information.	Recall, define, identify, label, list, name, repeat, underline, record.

Although the affective domain is often neglected and not used as often as the cognitive domain, it is also important in teaching. Questions in this domain require learners to express their feelings or opinions about something that affect them and to describe how their beliefs affect their actions (Kissock & Iyortsuun 1982:79). In order to develop *cognitive skills*, learners should have self-confidence, feel positive about themselves, appreciate the value of the information presented, and have a desire for learning as well as a willingness to work. This highlights the importance of the *affective domain* in the teaching-learning process.

Table 5.2 offers an example of Kratwohl's taxonomy (Kratwohl, Bloom & Masia 1964) for the affective domain. For each taxonomy level, a description of the level and key words associated with the level are given. The taxonomy is based on

increasing stages of accepting or believing in an idea. At the lowest level, *receiving*, the learner becomes aware of an idea and pays some attention to it. At the second level, *responding*, the learner reacts in a certain way to the idea. At the *valuing* level, the idea is accepted (Kissock & Iyortsuun 1982:12). At the fourth level, *organisation*, the learner makes the new value or belief part of the set of values and beliefs he already has. If the new value is in conflict with an already held value, an adjustment is made. The last level, characterising, is the stage where the value becomes a central part of a person's life. It is important to realise that the process of selecting, accepting and integrating values is a gradual process that takes a long time, and that it is not something a learner acquires within a particular lesson.

Table 5.2 Affective domain

Taxonomy level	Description	Key words
Characterisation	The value becomes part of the learner's life, and he develops a characteristic lifestyle that is consistent and predictable.	Act, demonstrate, display, practice.
Organisation	The value is added to values already held and made to fit them. In the process a personal and consistent value system is built.	Alter, arrange, defend, explain, integrate, modify, relate, organise, synthesise.
Valuing	Valuing refers to the worth or value attached to a particular object, phenomenon or attitude.	Accept, appreciate, defend, demonstrate commitment, express concern, justify, share.
Responding	Responding willingly to a request to perform a task, volunteering to perform a task without a request.	Answer, ask, assist, comply, enjoy, seek, respond, volunteer, participate.
Receiving	Receiving refers to being willing to pay attention or receive information, being aware of the importance of learning, being open-minded to information, points of view.	Concentrate, engage, follow, listen, observe, question, show willingness.

In conclusion: effective classroom questions make provision for learner thinking on all levels of both the affective and cognitive domains. Although during a single lesson or lesson unit only one or two levels of these domains may be reflected in a teacher's questions, during the course of a year learners should be provided with enough opportunities to answer questions phrased at all levels.

5.3.2.3 Effective questioning strategies

So far the importance of questions in teaching as well as ways to classify them have been outlined. However, no matter how good the questions are, if they are not presented clearly, or if the teacher doesn't call on all learners as equally as possible, the questions will not have the desired impact. Although there is no blueprint that describes exactly how the questioning process in the classroom should be structured, there are certain *key tactics* that indicate ways of effectively using questions in teaching and learning to achieve instructional goals. The key tactics in questioning are:

Phrasing questions clearly. Putting questions clearly involves using words and phrases that relate to the knowledge and experience of the learners. Also, questions should be stated clearly in a conversational tone so that the intent of the question is understood and does not need to be rephrased.

Equitable distribution of questions. This term describes a questioning pattern in which all learners in the class are called upon as equally as possible (Eggen & Kauchak 1996:40). If the same learners—those who sit in the front of large classes—are answering all the questions, the risk of losing the attention of the others, and consequently class control, is increased. In the large class, directing questions to the class as a whole should be alternated on a regular basis with asking questions that learners should discuss in pairs. This will help to involve all learners and keep the attention of everybody in the class. Furthermore, teachers should be consistent in asking the same number of questions of boys and girls, and learners of different abilities. According to Sadker and Sadker (1986:175–176), research studies indicate that teachers tend to direct more questions to boys than to girls. Also, boys receive more of the type of questions that require higher order thinking and more creative

responses. Teachers should constantly check themselves for equity in interaction and questioning to ensure the active involvement of all learners in classroom discussions.

Wait time. Wait time refers to the period of silence both before and after a learner responds, and research indicates that in most classrooms it is too short—typically less than one second. Increasing this time by a few seconds can improve equitable distribution, increase voluntary participation, and result in learners giving longer and better responses (Eggen & Kauchak 1996:42). Some questions could be introduced by saying, ‘Before answering *think* about the question.’ This indicates that the teacher is concerned about the thought learners put into an answer, and that they can’t just express the first idea that comes to mind. However, wait time should be implemented appropriately. For example, if a teacher asks recall questions requiring quick answers such as multiplication facts, wait time should be short. On the other hand, learners need more time to respond accurately to higher order questions requiring them to apply, analyse, critically evaluate, *et cetera*.

Prompting and probing. Prompts and probes are follow-up questions when the first answers are incorrect or incomplete. Probing questions increase the level of learner thinking as well as the quality of learner response, and can be used to prompt learner thinking on any level of the taxonomy discussed above. However, they are probably most effective at the analysis, synthesis and evaluation levels (Sadker & Sadker 1986:174). If a pattern of prompting and probing is established in the classroom, it communicates that the teacher expects a successful answer and will provide the necessary assistance to ensure success. Brown and Wragg (1993:20) identify the following forms of prompts:

- Rephrasing the question in simpler words.
- Asking simple questions that lead back to the original question.
- Providing a review of information given and questions that will help the learner to recall or see the answer.

Responding. Effective responding includes giving reinforcement and feedback to learners, and can determine if the teaching outcomes will be achieved, or whether discussion will develop and expand or become slow and difficult (Kissock & Iyortsuun 1982:114). It is also associated with conveying enthusiasm and generating learner interest. Teachers should therefore avoid being unnecessarily critical and making learners defend themselves. These actions can stop learners from responding to questions or participating in discussions unless they are required to. Three ways to respond to learner questions are:

- To take a learner's answer and build on it or invite other learners to build on it.
- To refer to a previous contribution from a learner and to link it to the present contribution, thus showing the connections between the learner's contributions and the topic under discussion.
- To incorporate learners' contributions (by name) into your summaries of what has been learnt in the lesson (Brown & Wragg 1993:22).

Sequencing of questions. Although individual questions may be sound, if they are not sequenced properly the desired lesson outcomes might not be achieved. Questions should lead learners through logical steps to develop an understanding of the ideas being presented. For example, a questioning sequence can start with *recall questions* to determine and present the facts. These can be followed by *convergent questions* that help learners to understand ideas, and *divergent questions* through which learners apply skills, solve problems and form creative ideas. The sequence could then be concluded by asking learners to make judgements, to form opinions, or to critically evaluate an idea, whichever is applicable.

The six questioning tactics discussed in this section provide teachers with classroom approaches designed to make the learner a more active participant in the teaching-learning process. They should, however, be regarded as *suggestions* and not as fixed rules to be followed under all circumstances. Teachers should use their own

discretion when applying these tactics, and adapt and change them to suit their particular situation.

5.3.3 Whole group instruction as strategy for large class teaching

As pointed out previously, teaching and managing a large group of learners can be a very challenging task, and as a result, teachers generally prefer to use mainly whole-group instruction because they seem to think it is the easiest and most effective way to effectively teach and manage large numbers of learners. However, this teacher dominated strategy has several drawbacks that restrict its suitability for teaching large classes effectively. First, there are limited opportunities in the large classroom for learner-teacher, learner-learner and learner-work interaction. Also, Bloom's observations (1984:11) of teacher-learner interaction reveal that teachers frequently direct their teaching, positive reinforcement and encouragement to learners in the top third of the class. Learners in the bottom third of the class receive the least attention and support. Furthermore, Ornstein (1995a:105) points out that during whole-group instruction, teaching is geared to the hypothetical average learner—which only fits a few learners in the classroom—and learners are evaluated, teaching methods and materials selected and learning paced, on the basis of the average learner. Thus, no provision is made for individual differences, or to meet the learning needs of individual learners. This results in high-achieving learners becoming bored, and low-achieving learners becoming frustrated. 'The uniqueness of each student is often lost in the large group,' and learners sometimes act out their behavioural problems in the safety of numbers (Ornstein 1995a:105). This highlights the need for varying teaching and assessment methods to respond to the diversity—learning styles, ethnicity, gender, *et cetera*—in the large class. This diversity makes a single method—any single method—unsatisfactory.

Secondly, the sheer volume of learners makes *active learner involvement* and *individual participation* during whole-group instruction cumbersome. Promoting lots of discussion, questions and comments on a daily basis could quickly consume all class time, and this method is therefore often not used on a regular basis. In addition, the nature of whole-group instruction—where the teacher as authority figure

dispenses knowledge and in the process encourages only minimal learner activity—tends to produce *passive listeners* who expect to be taught rather than to participate when called upon. In the large class, in particular, due to the fact that it is not very easy for the teacher to accurately keep track of *individual learner participation*, learners can easily disappear in the masses and be left behind without anyone noticing. The latter highlights the need for regular monitoring by the teacher to find out whether learners are learning effectively, and to provide feedback to learners on strengths and weaknesses. However, it is difficult to stay in touch with learners in the large class: a third drawback of addressing a large group during whole-group instruction is the difficulty of regularly making eye contact with individual learners, of knowing when they are confused, unhappy or content, or of giving individual learners feedback on how they are progressing. And yet this sort of monitoring and feedback is crucial for effective learning.

Despite these drawbacks whole group instruction has a role in large class teaching, especially when modified to include small group work and cooperative learning. When one looks at the characteristics and benefits of small group work and cooperative learning, it becomes clear that these strategies—which involve dividing learners into small groups and allowing them to become *actively* engaged in learning while teachers *monitor* their progress and supply regular *feedback*—combined with whole group instruction, are notably suited to making teaching and learning in the large class more effective. Thus, the researcher is not proposing that whole group instruction is no longer valid and should be replaced by cooperative learning or group work. Rather, the strengths from these three instructional approaches should be taken and this information be synthesised into an eclectic model that works well in large classes. Whole group instruction can thus be regarded as ‘a central core from which cooperative learning ... and other alternatives flow’ (George, Lawrence & Bushnell 1998:462).

The benefits of using small groups in large classes are that they break learners out of the passive receiving mode, encourage involvement and contribution, foster interaction, and attack the impersonality of large classes (Gleason 1986:11). Breaking into small groups also provides energy and interaction, enabling more learners to think during class, to say something, and to generate more ideas about a topic.

Moreover, there is potentially more intimacy in the class when it is broken into groups. According to Frederick (1987:50):

Not only do students get to know each other but the teachers have an opportunity to establish personal contact with more students as they move around listening to a sampling of the small group discussions. Furthermore, reticent students find it easier to express themselves in the smaller groups and can gain some confidence in speaking up in larger settings after having practiced talking to a smaller, safer audience.

The characteristics and benefits of *cooperative learning* as a strategy for large class teaching will subsequently be discussed. Suggestions with regard to the use of *group work* as teaching strategy within whole group instruction, are made under the heading *Informal cooperative learning methods* below.

5.3.4 Cooperative learning as a strategy for large class teaching

Cooperative learning is a teaching strategy in which learners work interactively and collaboratively in small groups, on activities that are clearly defined and designed to encourage members to contribute their fair share *to accomplish shared goals and to ensure successful learning by all group members* (Johnson & Johnson 1994a:5; Slavin 1995:2). Although there are many different forms of cooperative learning, all of them involve learners working in small groups to help one another to master academic material, to improve understanding and skills in the learning area being taught, and to develop cooperative group skills, all of which they need to become happy and contributing members of their society.

It is important to note that successful cooperative learning always includes *elements* of whole group instruction (Eggen 1996:186). As such, whole group instruction *supplements* cooperative learning activities, by giving learners the opportunity to discuss information or practise skills originally presented by the teacher (Slavin 1991:86–88).

Johnson and Johnson (1994a:24–25) identify four types⁶ of cooperative learning, which include formal cooperative learning, informal cooperative learning, cooperative base groups, and cooperative scripts or structures. *Formal cooperative learning* involves learners working together—from one class period to several weeks—to accomplish common goals by ensuring that they and their team mates have successfully completed the learning task assigned. *Informal cooperative learning* combines direct instruction, demonstrations, films and videotapes with group work, and consists of learners working together to achieve a shared learning goal in groups that could last from a few minutes to a full class period. During direct instruction, *et cetera*, quick informal turn-to-your-partner discussions can be used to focus learner attention on the material to be learned, create a mood conducive to learning, help set expectations as to what will be covered in a class period, ensure that learners understand what is being taught, and provide closure to a lesson programme.

The third type of cooperative learning identified by Johnson and Johnson (1994a:25) differs from the other two in that it is more permanent and serves as a base for all efforts to learn. *Cooperative base groups*⁷ are long-term cooperative learning groups with permanent membership, that provide learners with committed relationships that last for at least a year. The purpose of the base group is to give members the help, support, assistance and encouragement they need to work hard in school, attend school, learn and make progress, and complete assignments and homework. They may also let absent group members know what went on in class when they miss school. Base groups, normally consisting of two or three learners, meet formally to discuss the academic progress of members, and informally members interact on a daily basis, discussing assignments, helping each other with homework, and reviewing work in advance of taking tests. Base groups could be very useful in schools with large classes, especially because it is not possible for one teacher to assist individual learners in a similar manner as mentioned above. A student support system that provides support, motivation, encouragement and help when needed, can do much to individualise learning and raise the level of learning of learners who would otherwise disappear in a large class.

⁶ Only the first three are applicable to this study.

⁷ Peer tutoring can be done within established cooperative base groups. Peer tutoring is discussed under the heading *Individualisation in the large class* in this chapter.

In this chapter three *formal* cooperative learning strategies—Student Teams Achievement Division (STAD), Jigsaw II and Group Investigation—as well as ideas for *informal* cooperative learning will be investigated, all of which require certain *conditions* to ensure their successful application in the large class. In the next paragraph the focus will be on how to create conditions that are conducive to the implementation of cooperative learning in large classes.

5.3.4.1 Creating conditions to ensure effective cooperative learning in large classes

According to Slavin (1991:86), there is a real danger that cooperative learning, despite the fact that it has an excellent research base and hundreds of thousands of enthusiastic followers, may fall into disfavour and eventually become obsolete. One reason might be the reliance of African teachers especially on an authoritarian teaching style, mainly because in many cases they are not able to manage anything else. Surveys of teaching techniques in many third world countries indicate a fairly widespread use of fact-giving techniques focusing on rote learning and minimal student activity (Avalos 1980:49). Another reason is that very often teachers with *inadequate knowledge* and *no training* with regard to cooperative learning, use ineffective forms of the approach, fail to address certain crucial issues (discussed below), and as a result experience failure and frustration and abandon the approach because it ‘doesn’t work.’ Disillusioned, many teachers declare that cooperative learning is impossible to do with ‘their’ learners, and go back to teaching methods they are comfortable with (Totten 1995:399–400). Slavin (1991:86) remarks:

[S]ome teachers hear about cooperative learning and believe that students can simply be placed in groups, given some interesting materials or problems to solve, and allowed to discover information or skills.

However, as will be indicated below, it is not that simple. Merely seating learners in groups and expecting them to work together, doesn’t guarantee effective cooperative learning: a great deal of preliminary training of learners, preparation and planning of suitable activities, *et cetera*, are necessary to lay the foundation for effective cooperative learning. These issues will subsequently be discussed.

- Training learners for cooperative learning

It was highlighted in both the literature study (Chapter 3) and the analysis of fieldwork done in large classes (Chapter 4), that to ensure success it is imperative to thoroughly *train* learners for cooperative learning. For many people, working in groups doesn't come naturally. Thus, teachers need to take the time and effort to teach learners at all levels how to, for example, share and discuss ideas in some depth, be active listeners, ask different types of questions, share ideas, encourage contributions, disagree in a civilised manner, and resolve group conflict (Totten 1995:399).

Teachers should also not underestimate the way in which embedded and taken-for-granted meanings with regard to what counts as proper teaching, can inhibit learners' involvement in cooperative learning. For example, some learners (and their parents) might complain that the teacher is *not teaching* them if they are required to work cooperatively in groups, because, based on their experience, they expect the teacher to be an authority figure and the teaching method to conform to the teacher-centred pattern. Breaking down barriers by explaining the rationale behind cooperative learning, is thus very important in order to introduce and use this method effectively.

In the next few paragraphs, guidelines will be suggested to inform and train learners with regard to the requirements that are necessary to ensure that learners work together successfully, *viz* teambuilding and interpersonal and small group behaviour skills.

Teambuilding to improve group cohesiveness

Cohesive groups are ones whose members are committed to each other and to achieving group goals collaboratively. According to Cartwright (1968:91),

[T]he members of a highly cohesive group, in contrast to one with a low level of cohesiveness, are more concerned with their membership and are therefore more strongly motivated to contribute to the group's welfare, to advance its objectives, and to participate in its activities. Cohesiveness contributes to a group's potency and vitality; it increases the significance of membership for those who belong to the group.

A high level of cohesion is thus imperative for successful cooperative learning. One way to encourage group cohesiveness is to use teambuilding activities *before* cooperative learning is implemented. Although this strategy can be demanding and take time that teachers might prefer to spend on academic work, advocates claim that the social and interpersonal benefits are equal to or greater than the cognitive benefits (Johnson & Johnson 1994a:90). Learners learn more effectively because psychological and social barriers to learning—feelings of rejection, alienation, powerlessness, incompetence—are broken down during teambuilding. Teambuilding creates a climate of mutual acceptance and openness, and develops in each learner trust and confidence in themselves, their classmates and fellow group members (Abrami *et al* 1995:47–49). Johnson and Johnson (1994a:60) state that:

[a]s relationships within the class or school become more positive, absenteeism decreases, and increases may be expected in student commitment to learning, feeling of personal responsibility to do the assigned work, willingness to take on difficult tasks, motivation and persistence in working on learning tasks, satisfaction and morale ...

The importance of using teambuilding activities—which could be extended to include classbuilding if necessary—to enhance cohesiveness in the *large class* cannot be overemphasised. It goes without saying that large classes with forty or more learners will be less cohesive than smaller classes: learners in large classes very often only know a few of their classmates well enough to trust them or to feel confident to put forth their ideas knowing that they will be accepted. Furthermore, learners might experience the large class atmosphere to be one of anonymity, in which they feel lost and nothing more than an outsider (Wulff, Nyquist & Abbott 1987:21). In order to combat these feelings and enhance group cohesiveness, teambuilding and classbuilding activities can set the tone for an effective use of cooperative learning. Especially in the large class, there is a need to create a climate of mutual acceptance, trust and commitment, and to develop a team identity and feelings of inclusion in learners. In the absence thereof, there is no guarantee that cooperative learning will be successful in the large class.

According to Abrami *et al* (1995:50), a cooperative climate should be promoted *from the first lesson* and should continue to develop throughout the year. Teambuilding activities don't happen only when a group works together: they should be an integral part of the process of learning through interpersonal interaction.

A variety of activities could be used to enhance teambuilding. These activities can be done in pairs (perhaps the least intimidating way), in groups or as a class, depending on the physical context and the needs of the teacher and learners. Some examples of teambuilding activities appear in Table 5.3.

Table 5.3 **Teambuilding activities⁸**

Activity	Description
Name the group	When groups are first formed they have to select a name for their group. Three simple rules for this process apply: Each member must have a say; no decision can be taken unless everyone consents; no member consents if s/he has a serious objection. These rules set the tone for future group work.
Favourites	Group members or pairs interview each other about their favourite personality, movie star, hobby, food, music, <i>et cetera</i> .
Interview	Group members or pairs interview each other to find out about each other's backgrounds, personality traits, life goals, what they want to be later on in life, <i>et cetera</i> .
Name learning	Group members are given a set amount of time to learn the names of their teammates and where they live. One learner per group then has the opportunity to introduce her teammates to either a neighbouring group or the whole class.
Positive discoveries	Group members interview each other to discover the positive essence of each member, so that s/he can be introduced to the whole class in an adjective or very brief phrase, such as daring, adventurous, ambitious, <i>et cetera</i> . A short sentence of explanation can also be provided.

⁸ Adapted from Eggen, P.D. & Kauchak, D.P. 1996. *Strategies for teachers*. Boston: Allyn and Bacon; and, Slavin, R.E. 1995. *Cooperative learning*. Boston: Allyn and Bacon.

Developing interpersonal and small group skills

In today's rapidly changing society, it has become increasingly necessary for schools to help learners develop interpersonal and small group skills, in order to prepare them for the world of work. Tomorrow's (and today's) workers *need* to have high levels of communication, cooperative, interpersonal and leadership skills, because the information age work place is characterised by work teams that can communicate, negotiate and work with one another effectively to discover and solve problems. Furthermore, people who want to be successful in the information age work place—where the idea of a lifetime career seems to be something of the past—also need to be capable of self-directed, life long learning, in order to continually acquire new information and skills (Abrami *et al* 1995:89). Cooperative learning is the ideal medium to develop interpersonal and small group skills.

Although there appears to be an assumption that learners need not be trained in interpersonal and small group skills for group work to be effective because they can only acquire these skills *through* cooperation with others, research has shown that the quality and effectiveness of these skills improve when they are practiced (Bennett 1994:62). In order for group work to be effective and productive and for learners to benefit from group work, they *need* to be trained in, for example, appropriate ways to listen to team mates, to express a point of view, to engage in discussion, reasoning, probing and questioning, rules for talk, *et cetera*. Johnson and Johnson (1994a:90) differentiate between learning academic subject matter (*taskwork*) and learning the interpersonal and small group skills required to function as part of a group (*teamwork*). If the teamwork skills are not learned and learners are unskillful at teamwork, then they cannot complete the taskwork to the required standard. The more socially skillful learners are, the higher the achievement that can be expected from cooperative learning.

Another powerful way teachers can use to enable learners to acquire relevant skills, is to *model* the skills they expect learners to display. Learners learn a lot about how to employ skills by observing them being used effectively by the teacher (Abrami *et al* 1995:99). Many of the skills learners have to use during group work can be explicitly incorporated when presenting new content. For instance, if a teacher wants learners to engage in critical questioning and sound reasoning during group work, her teaching

should incorporate questions that encourage learners to critically probe underlying rationales, and to motivate their points of view using logical reasoning skills.

Before suggesting guidelines to develop interpersonal and small group skills, it is necessary to first *define* these skills. Abrami *et al* (1995:90–91) define them as follows:

Interpersonal skills [and small group skills], such as listening, sharing, and encouraging, are used to engage in verbal and non-verbal interactions with others. They are sometimes referred to as social skills, communication skills, prosocial skills, collaborative skills, cooperative skills, or group maintenance skills.

Researchers have developed a whole range of activities and strategies for teaching learners interpersonal and small group skills (Johnson 1993; Kagan 1992). Since the selection of appropriate strategies will depend on the nature of the task and the needs of the learners and thus cannot be prescribed, guidelines for skill development as well as a few suggestions with regard to the creation of useful activities will be discussed (Abrami *et al* 1995:94–96; Bennett 1994:62–64).

Guidelines for interpersonal and small group skill development

Select the skills to be developed

A careful analysis of the *group work assignment* can reveal which interpersonal and small group skills learners need to complete the task successfully. For example, if learners have to critically evaluate a certain point of view, they may need training in logical reasoning skills and in how to express themselves clearly. *Observing learners* during group work can provide the teacher with valuable information with regard to learners' strengths and weaknesses. The latter can be an indication of which skills need attention.

Awareness-raising before the start of group work

Once the skills have been identified, training of learners should begin with some form of direct instruction. The idea is to give instructions with regard to the group assignment and the skills involved (if the skills are integrated with content instruction), or to make learners aware of the relevant skills and how

to apply them (if the latter are taught separately). In the process learners' motivation is also developed. If skills are taught separately, applicability to the content to be studied must be made explicit, to promote transfer of skills.

Implementation of the group work assignment

Following awareness-raising, learners must have the opportunity to practice the skills in the group context.

Observing, feedback and reflection

In order to enhance the development of interpersonal and small group skills, teachers must *continually* observe learners during group work to diagnose any problems with the implementation of skills. This means focusing on the *processes* of cooperation and not just the end products. Observations must then be fed back to learners, to enable them to be more sensitive about the ways in which they work together. The information gathered by the teacher during observation should in turn be used to inform future training activities. Following reflection, learners should set goals for improving their use of the skills to enhance team work. This may then result in more direct teaching and additional practice of the skill, thus beginning the cycle again. Being involved in the analysis and discussion of their own attempts at cooperative learning is important: learners do not learn from experiences that they do not reflect on. Thus, if groups are expected to perform better the next time, members must receive feedback, reflect on how they could improve their actions, and plan how to perform better during future group work activities (Johnson & Johnson 1994a:93). Rating scales can be used to help learners assess group effectiveness. Table 5.4 offers an example.

Table 5.4 Rating scale for assessing group effectiveness

	Rarely			Always	
Group members listened to each other.	1	2	3	4	5
Group members had equal chances to speak.	1	2	3	4	5
Group members helped each other clarify ideas.	1	2	3	4	5
Group members encouraged each other.	1	2	3	4	5
Some group members talked most of the time.	1	2	3	4	5
Group members asked thought-provoking questions.	1	2	3	4	5

GOALS for improving cooperative skills

During the next group work session, we as a group will:

Creating activities for interpersonal and small group skill development

As mentioned earlier, it is important that teachers should observe learners carefully during group work to identify their strengths and weaknesses with regard to working together as a group. Observation will enable teachers to narrow down which skills would benefit most from explicit attention. Learners could also, by means of a brainstorming session, be involved in deciding which skills are important and need to be taught. They could likewise be required to go one step further and list appropriate behaviours associated with specific skills. For example, if it is decided to focus on the *listening skill*, the teacher might suggest learners list the specific ways they are able to know that someone is listening to them. (If preferred, learners could afterwards practice this skill in pairs.) The following behaviours (Aronson & Patnoe 1997:37; Hall 1994:134) might be listed:

Display an open and attentive posture.

Look directly at the speaker.

Lean toward the speaker while listening.

Indicate to the speaker that you understand by nodding your head.

Encourage the other person to talk by nodding your head or smiling with reassurance.

Reflect on what has been said by rephrasing and summarising statements.

Reflect the feeling behind statements, for example, 'I get the impression that you feel positive about what you have just said. Am I correct?'

Let the speaker know that you have heard by building on her ideas, for example, 'Apart from the reasons you have just mentioned, I think you can also add ...'.

Another skill on which teachers should certainly focus learners' attention, is the *conflict management skill*. Since cooperation and conflict go hand in hand,

the importance of teaching learners conflict management skills becomes a major issue. The more group members strive toward achieving group goals, the more frequently conflict will occur. Conflict might also arise as a result of the multi-cultural and ethnic mix in South African schools. If conflict is managed in a positive way, they may add creativity, fun and higher-order reasoning to the learning process. However, when managed in a negative way, conflict can result in anger, frustration and hostility that are detrimental to the learning process (Johnson & Johnson 1994a:26). Learners need to learn the procedures for managing conflict constructively and become more skillful in their use. According to Johnson and Johnson (1994b:84), the following skills are involved:

Focusing on the mutual goal of coming to the best decision possible, not on winning;

Being critical of ideas, not people;

Encouraging everyone to participate;

Listening to everyone's ideas, even if you do not agree with them;

First bring out all the ideas and facts supporting both sides and then try to put them together in a way that makes sense;

Restating what someone has said if it is not clear;

Trying to understand both sides of the issue;

Changing one's mind when the evidence clearly indicates that one should;

Following the golden rule of conflict: act towards your opponents as you would have them act towards you.

Webb (1984:33–43), in her research on sex differences in interaction and achievement in cooperative small groups in a junior high school, highlights the importance of teaching *the different sexes* how to *cooperate* in small groups. Her research yielded interesting results. First, females were more responsive to requests for help than were males. Second, females were usually responsive to all other group members, regardless of sex, whereas males responded to other males more often than to females. Third, both females and males tended to seek help from males more often than from females. The tendencies of females to seek help from males and of males to ignore females' requests for

help, resulted in females being less successful than males in obtaining help when needed, which hindered their learning. She comes to the conclusion that a solution to the problem of unequal interaction in mixed-sex groups, is to provide *training in cooperative skills*. Male learners need to be trained to be more responsive to other learners' requests for help, whereas female learners need to be trained to persevere until their requests for help are answered (Webb 1984:43).

Once simplified and finalised, skills and associated behaviours could be copied on posterboard or laminated and posted in the classroom as a reminder. Aronson and Patnoe (1997:36–37) emphasise that it is more useful to state these behaviours positively than negatively. Negative statements only tell learners what *not to do*, thus failing to lead them to positive behaviours that can be reinforced. One advantage of involving learners in brainstorming skills and behaviours, is the commitment they will feel toward the development of these skills. Also significant, is that learners start to think in terms of group processes. 'But more important, it is the opening wedge in developing individual responsibility, when students begin to realize that they themselves are able to develop a cooperative learning environment' (Aronson & Patnoe 1997:37).

- Fostering positive interdependence

For cooperative learning to work well, learners have to believe that they sink or swim together and therefore have a unique contribution to make that is indispensable to group success. This can only happen if the heart of cooperative learning, *positive interdependence*, is firmly in place. Positive interdependence is well established when group members realise that one learner cannot succeed unless everyone succeeds: each member's efforts therefore benefit not only him or herself, but all other group members as well (Johnson & Johnson 1994a:22–23;82). Learners' vested interest in each other's success, results in their 'sharing resources, helping and assisting each other's efforts to learn, providing mutual support, and celebrating their joint success' (Johnson & Johnson 1994a:23). If learners care about the success of the group, it becomes legitimate for them to ask one another for help and to provide

help to each other. Without this common goal, learners may feel ashamed to ask peers for help (Slavin 1987:9). It is *positive interdependence* that makes group members aware of their responsibilities, viz to learn the assigned material, and to ensure that all members of their group learn the material (Johnson & Johnson 1994a:82).

It might not be a problem to foster positive interdependence amongst African learners in South African schools, because it is in line with the African global view that the group is more than the individuals making up the group, for a person's global view is defined by his relationship to the community or group (Van der Horst & McDonald 1997:136). African people refer to this as *Ubuntu*. Mwangwenda (1995:424) also makes mention of this interdependence:

What is prevalent in Africa and other third world cultural milieux is the interdependent perspective of the self with the emphasis on connectedness, relatedness and interdependence. ... Characteristic of this perspective of the self is the tendency to act in harmony with others' wishes and expectations rather than on the basis of personal wishes.

Johnson and Johnson (1994a:82–84) identify three steps in structuring positive interdependence. The *first step* is assigning the groups a clear task and ensuring that group members know what they are supposed to do. *Secondly*, positive goal interdependence should be established so that group members realise that they must work towards a common goal (for example, group presentation) for the group to be successful. If one group member accomplishes her goal, other group members are assisted to accomplish their goals. Ways to structure goal interdependence can include informing group members that they are responsible:

To set a common goal for their group.

To ensure that all members achieve a certain performance level when tested individually.

To successfully create a final project, complete a set of answers, brainstorm a list of small group skills, plan and carry out a debate, *et cetera, as a group* (Abrami *et al* 1995:72).

The *third step* is to supplement positive goal interdependence with other types of positive interdependence. Since learners are not always intrinsically motivated to do the assigned project or learn the required material, rewarding them might motivate them to learn. *Reward interdependence* exists when all members of a group receive the same recognition for the group's accomplishments. Ways of structuring positive reward interdependence include:

Celebrating their joint success when all members reach a specified criterion.

Awarding bonus points to all members' individual scores when everyone in the group reaches the specified criterion.

Receiving symbolic rewards (certificates of excellence, bonus points), social rewards (praise), activity based rewards (extra free time, field trips), or tangible rewards (books, sweets, stars) when all group members reach the specified criterion (Abrami *et al* 1995:72; Johnson & Johnson 1994a:83).

In *role interdependence*, group members are assigned complementary roles that specify the different responsibilities that have to be performed in order to complete the joint task successfully. These roles can be

functional (recorder of responses, reader of materials, time manager, materials manager),

cognitive (prober, summariser of ideas, checker of understanding, elaborator of knowledge), or

interpersonal (encourager of participation, facilitator, observer, quiet monitor) (Abrami *et al* 1995:74).

Roles and responsibilities should be clearly defined for learners, using role cards that briefly describe each role. These roles are vital for effective learning, and can be especially useful for the teacher in the large class. For example, while the teacher cannot continually check the understanding of a large number of learners, the role of checker can be utilised to bring problems with regard to the understanding of material to her attention.

Resource independence exists when each group member has only a portion of the information or materials (pens, worksheets, books) necessary to complete a learning task, and members' resources have to be combined in order for the group to accomplish its goal (Johnson & Johnson 1994a:83). This prevents one member from accomplishing the task alone. Another way to structure resource interdependence is to use the Jigsaw II cooperative learning method. This method will be discussed later in this chapter.

In summary, *positive interdependence* within or between groups establishes a climate of cooperation in the classroom, which could motivate learners to work together effectively if applied correctly.

- Encouraging individual accountability

The concepts of individual accountability and positive interdependence are inextricably linked. While positive interdependence focuses on the importance of a cooperative relationship amongst group members to achieve group goals, individual accountability focuses on the *responsibilities* of each group member in that cooperative relationship (Abrami *et al* 1995:81). Individual accountability means that learners are held individually accountable to do—and feel personally responsible for—their share of the work, and that they cannot *hitch-hike* on the work of other group members or allow group members to do the work for them (Johnson & Johnson 1994b:68).

Nonaccountability is very often the main reason why cooperative learning fails, and teachers should therefore pay special attention to establish individual accountability. Particularly in African schools, establishing individual accountability might be problematic owing to the African cultural view that the group is more important than the individual. Teachers in these settings will therefore have to take note of the approaches to structure individual accountability discussed below.

Nonaccountability exists when some learners, the so-called *free-riders*, realise that their efforts are not required because the other (brighter, hard-working) group

members will do all the work.⁹ The free-riders may then opt out and simply go through the motions without making any contributions towards the group task. This is called *social loafing* (Abrami *et al* 1995:23;82). In such instances, learners who are enthusiastic and full of ideas, may gradually feel that they don't want to look like *suckers* by doing all the work while their team mates rest on their laurels, so they too reduce their efforts. Thus, the overall productivity of the group is reduced. Johnson and Johnson (1994a:87) and Abrami *et al* 1995:82–87) suggest the following approaches to structure individual accountability:

Keep the size of the group small. Two to four learners per group is the ideal size. When the group is large, individual learners may feel that there are enough others who will contribute, and that their own social loafing will go unnoticed.

Use a *combination* of individual and group assessment to encourage responsibility.

Select a group member at random to present his or her test results, worksheet, *et cetera* to the teacher or to the entire class. This holds the whole group responsible for ensuring that every member has mastered the material and can perform at the required level.

Assign each group member a specific role and task to perform, to encourage them to perceive their contributions as unique and indispensable to the group. If members are uncertain about whether their efforts will contribute, are redundant, or duplicate other members' efforts, they may perceive that their contribution is not necessary and they will lose motivation.

Let learners teach what they learned to someone else. This stresses their accountability with regard to the success of their team mates.

Observe each group and record the frequency with which each member contributes to the group's work. Give feedback to learners to make them aware of their level of accountability, and discuss ways of how to improve accountability.

⁹ This problem often exists because for some group tasks, members share equally in the group's rewards whether each individual member contributes equally to the task or not.

When individual accountability is structured appropriately, learners will notice that their contribution to the group assignment is essential to the group's success. This perception should motivate learners to participate actively, 'because if they fail to do their fair share of the work, other members will be disappointed, hurt, and upset' (Johnson & Johnson 1994a:89).

- Managing the cooperative classroom effectively

Effective management of the cooperative classroom is the key to successful teaching and learning. However, managing the cooperative classroom, especially in the large class context where there may at times be *at least* ten different groups functioning under the direction of *one* teacher, can be a very difficult and demanding task if special steps are not taken to ensure that learners use class time sensibly and direct their energies toward productive activities. In the next few paragraphs important aspects of *classroom management* highlighted by Slavin (1995:132–142), Bennett and Dunne (1992:109–133) and Abrami *et al* (1995:59–67;119–126) will be discussed.

Physical arrangement of the learning space

Although the ideal situation is that desks be rearranged into small clusters far enough apart so that groups do not interfere with each other's learning, and that members of a group should sit eye-to-eye and knee-to-knee to exchange ideas and materials in a comfortable atmosphere, it is neither practical nor always possible in the large classroom. The logistics of moving forty or more desks and chairs around in a confined space when the teacher plans to use cooperative learning, can result in a nightmare for the teacher *and* a waste of valuable class time. It is therefore recommended that furniture in large classes be arranged into clusters permanently to facilitate group work, instead of in vertical rows. When the teacher needs to instruct the class as a whole—direct instruction is *not* totally replaced by cooperative learning—there will be no disruptions because nobody have to move their desks. Even in cases where furniture is bolted to the floor, is it possible to implement cooperative learning. Informal groups, in which learners briefly consult and share with a neighbour, require the least amount of change in classroom arrangement.

The time factor

Very often, when teachers are asked why they don't use cooperative learning, their answer is that it is a *time-consuming* method. For this reason, teachers generally are of the opinion that it is not possible to fit cooperative learning into an already overloaded curriculum, or that they won't be able to finish the prescribed syllabus if they use any other teaching method than whole-class instruction (Abrami 1995:119). However, the teacher of the large class will have to realise that cooperative learning is not an extra burden—cooperative learning should be viewed as a strategy to enable the teacher to manage teaching and learning in the large class effectively, and therefore lesson programmes structured cooperatively should be an integral part of the daily teaching-learning process in the large class. Furthermore, since the focus of the new outcomes-based curriculum is not so much on the mastering of a prescribed body of knowledge, but on the mastering of a range of interpersonal and higher-order thinking skills that can best be developed through cooperative learning, teachers no longer have an excuse *not* to use cooperative learning. It is true that the teaching of interpersonal and higher-order thinking skills takes time. Learners need ample time to discuss and grapple with complex issues, especially in the beginning when they have not yet fully mastered small group behaviour skills. But once they have developed these skills, they will become faster and more efficient during group work. Considerable time can be saved if the teacher has learners do individual preparation or follow-up work as homework assignments.

The idea of 'notional' time¹⁰ is one way of addressing the time problem. In a 'notional' time lesson, time is not fixed or set, and learners get the opportunity to continue with the group work activity until it is completed (Department of Education [1998c]:23–26). Although this makes sense in theory, it raises a number of organisational as well as time-table related issues that need to be addressed by the school administration.

Introducing an element of 'notional' time to the time-table in the primary school is less complicated than in the secondary school, because the teacher has one class for much of the day and can decide how to use available time without inconveniencing

¹⁰ The idea of 'notional' time was discussed in Chapter 3.

other teachers. However, in the *secondary school*, a teacher cannot keep learners after a lesson to finish work at their own pace, because other teachers will be affected by this decision. The answer to this dilemma lies in the first place with cooperation, team planning and ongoing negotiation between staff and management about the best use of time. Secondly, rigid and thoughtless time-tabling should be replaced by flexible time-tabling aimed at improving learning. According to government policy (Curriculum Development Working Group 1996:15; Spady & Schlebusch 1999:107–109), *5% of learning and teaching time* in secondary schools¹¹ is to be set aside—either on a daily or a weekly basis—to allow schools the opportunity to spend the ‘open time’ on areas which need redress or which address the specific needs or interests of their learners or communities. This means that schools should not time-table every minute of the day, but rather set aside time to be spent in creative ways to suit the specific needs of the learners.

The noise factor

There is definitely more noise in a classroom where learners work cooperatively than in one where the teacher uses whole-group instruction. When there are forty learners working together in small groups of four, it means that about ten learners are speaking at any given time. Although it might be recognised as ‘busy’ noise, it is nevertheless noise and fellow teachers, the principal and parents should be informed that the increased noise is not an indication of lack of control, but of learners actively engaged in learning.

Before groups start working, they should be made aware that there is a natural tendency for a classroom of groups to become too noisy. Noise levels can quickly escalate, because as one group talks, a nearby group needs to talk a bit louder to be heard. This encourages the first group to talk even louder. The teacher needs to develop certain strategies to bring the noise levels down. Abrami *et al* (1995:122) and Slavin (1995:134;142) suggest the following strategies:

¹¹ The distribution of time per learning programme in the secondary school is as follows: Language, Literacy and Communication 20%; Mathematics 13%; Natural Sciences 12%; Arts & Culture 10%; Human & Social Sciences 10%; Economic and Management Sciences 10%; Life Orientation 10%; Technology 10%; Flexitime 5%.

Use *hand signals* (palm up, palm horizontal, *et cetera*) to bring the noise levels down. Every learner who sees the signal, has to stop talking and *gently* tap others in the group on the shoulder to make them aware of the signal.

Have a *large red circle or some other sign* available which is given to a 'noisy' group, and remove it when noise levels drop. This technique, like the previous one, clearly indicates the problem without interrupting the group's interaction.

Challenge learners to speak quietly enough so that only their team mates hear them.

Appoint a *Quiet Monitor* in each group to remind members to keep their voices down when noise levels increase.

If high noise levels persist despite several efforts by the teacher to contain the noise, a solution is to bring all activity to a stop, get absolute quiet, and then discuss the noise problem with learners before resuming. Let learners suggest ways to keep noise levels down.

Once again, the key to a successful cooperative learning atmosphere is proper rules and procedures. If these are in place, the noise level will eventually take care of itself.

Maintaining discipline

A fear of disciplinary problems getting out of hand is often the reason why many teachers are hesitant to use cooperative learning in the large classroom. According to Abrami *et al* (1995:122), teachers and learners must learn to share responsibility for learning and discipline in the cooperative classroom. Because many discipline problems stem from a power struggle between teacher and learners, giving learners more autonomy and responsibility can reduce some discipline problems. Johnson and Johnson (1994a:236) talk about the importance of teaching learners self-responsibility and self-regulation skills. Ideally, learners must be given the responsibility of

regulating their own and their team mates' behaviour so that teachers can concentrate on instructional matters rather than control. To regulate behaviour, learners must have the necessary skills to monitor, assess, modify and change behaviour in order to act appropriately.

The teacher can initiate this shift in autonomy and responsibility by having learners create their own group and class behaviour guidelines. If learners are to take responsibility for and regulate behaviour within groups, they must have opportunities to make decisions regarding proper behaviour and to follow through on the decisions made. Allowing learners to be joint architects in matters affecting them, promotes feelings of control and autonomy and motivate them to act appropriately and competently (Johnson & Johnson 1994a:236). It is imperative to utilise the teambuilding activities discussed earlier to establish a sense of cohesion and mutual commitment to learning, thus ensuring a disciplined cooperative environment.

Although it might take some time before teachers feel comfortable with this power shift and learners develop the responsibility to regulate their own and team mates' behaviour, this approach will eventually enhance the quality of learning in the cooperative classroom.

Pacing groups

In cooperative learning, teachers may often be faced with learners finishing activities before others. Some learners might use their time in group practice ineffectively and rush through an activity on their own, without taking care to involve every group member and to make sure that everybody understands. (This problem can be dealt with by providing limited materials and resources per group so that learners *have* to work together.) When a group claims to have finished an activity, the teacher has to first confirm that all members have completed and understood the work. If this is the case, these groups can be given enrichment activities to ensure that they don't get bored and disrupt the class. This doesn't necessarily require the preparation of new activities—it may simply mean giving the group a new challenge based on the activity they have just completed. If this is useful and practical, early-finishers could be involved as helpers for those groups that have not finished.

Dealing with diverse learners

When learners are allowed to group themselves, they obviously choose to work with their friends, thus promoting the *forming of cliques* and excluding other learners. This practice limits their opportunities to benefit from differing viewpoints, or to mix with learners of other cultures or ethnic groups, the latter being a characteristic of South African schools. In order to give learners practice in cooperating with learners other than their friends, teachers will have to assign learners to groups themselves (see *Grouping learners* below). When introducing cooperative learning to learners, it will also help to inform them that each learner will work with every other learner at one time or another, and to indicate to learners that this will enable them to develop interpersonal and thinking skills they will need in every aspect of their lives (Abrami *et al* 1995:123).

Highlighting the importance of teamwork for many business and professional careers may also help to involve learners who do not want to be part of a cooperative group—the *reluctant participants*. If such learners still do not want to participate in group work, their reservations may be discussed with them privately to determine the source of their skepticism. Teachers will have to devise strategies to convince reluctant participants to become part of cooperative learning. For example, situations can be created in which learners develop trust in each other before working together on academic content, or teachers can consider beginning with pair work to enable reluctant learners to gradually become used to the idea of working with others. Regular assessment activities where learners can score individual marks towards their promotion mark, might also encourage bright learners to participate in cooperative learning. Furthermore, since bright learners very often are concerned about decreased standards of learning when cooperative learning is used, these concerns may be addressed by the teacher by focusing on the benefits of discussion and elaboration for their own learning.

Grouping learners

Before cooperative learning can be implemented, decisions have to be made regarding the best possible ways to divide learners in groups that have the potential for working together. This includes deciding on the *size* of groups and how groups should be *composed*.

Group size may vary according to the specific objectives of a lesson programme, the nature of the group work activity, the cooperative method used (STAD, Jigsaw II, Group Investigation, *et cetera*), the racial and ethnic mix, the ability levels of learners in a classroom, the space and furniture constraints, and the availability of resources (Johnson & Johnson 1994a:103; Bennett & Dunne 1992:114). Although it is not possible to give hard-and-fast rules about optimal size, Bennett and Dunne (1992:115) state that

[a]s a generalisation, it does seem that groups of three and four are the most likely to co-operate to good purpose; that groups of five may divide into a dyad and a trio, or may allow individuals to opt out; and that larger groups will certainly split up into smaller groupings, with the possibility of opting out made far more likely.

In the large class, group size will ultimately be determined by space constraints and the problems involved in moving furniture around and clustering desks and chairs together in groups. Teachers will have to decide on the best possible arrangement, bearing in mind their specific circumstances.

According to Johnson and Johnson (1994a:103–104), the following should be remembered when determining the size of a cooperative learning group:

The larger the group, the more skillful group members must be in providing everyone with a chance to speak, coordinating the actions of group members, reaching consensus, ensuring explanation and elaboration of the material being learned, keeping all members on task, and maintaining good working relationships. A common mistake made by many teachers is to have students work in groups of four, five, and six members before the students have the skills to do so competently.

The golden rule seems to be to start with pairs or small groups for short periods of time, until learners have mastered the required interpersonal and small group skills. Only then can teachers start to experiment with larger groups, if preferred. As far as possible, groups should be the same size: if groups vary too much in size, they are likely to take different lengths of time to complete activities.

There are many ways to *assign learners to groups*. Under most circumstances, the easiest way is that the teacher assigns learners to groups randomly (Johnson & Johnson 1994a:104). This means that learners could end up with others they do not like. However, since learning to work with others who are different and who hold different opinions is a valuable skill which learners need to acquire, learners should be persuaded to work at group relationships despite personal likes and dislikes.

Some authors (Bennett & Dunne 1992:117; Johnson & Johnson 1994a:104) claim that the least recommended procedure is to assign learners to groups on the basis of *ability*, resulting in homogeneous-ability groups. According to Abrami *et al* (1995:63), one benefit of learning in heterogeneous-ability groups is that the more able learners assume the role of tutors, teaching lower-ability learners content they find difficult to grasp. Apart from the fact that tutors come to learn the content better through teaching it to others, less able learners are exposed to, and get the opportunity to model, the interpersonal and tutoring skills of their more able team mates. Abrami *et al* (1995:63) suggest that, if there is a wide range of abilities in a class—as in large classes—teachers create groups that contain a moderate range of abilities. This implies that high and average ability learners are grouped together and average and low ability learners, but *not* high and low ability learners in the same group. The reason is that in groups composed of high ability learners and low ability learners, the high ability learners might feel indignant about spending so much time teaching others, while low ability learners might feel self-conscious about being singled out for special attention.

- Obtaining support from school management for cooperative learning

The adoption and sustained implementation of a new strategy like cooperative learning is easier when there is collaboration and support from the principal, colleagues and parents. Very often individual teachers return from workshops on cooperative learning, inspired and ready to implement the new strategy in their classrooms. However, when they experience difficulty in applying cooperative learning in their classrooms, they discover that neither the principal nor their colleagues share their enthusiasm for the method. The isolation teachers experience

in this regard makes innovation difficult, if not impossible, and without collegial support and encouragement their enthusiasm soon wears off.

The successful implementation of cooperative learning strategies to make teaching and learning in large classes more effective is in the first place dependent on school management's whole-hearted support as well as its willingness to consider organisational changes and to adopt a school policy that supports the use of the new strategy. If the *principal* in particular is not convinced that the new strategy could benefit teaching and learning in large classes and does not lead by supportive action, it will be impossible for teachers to implement it successfully. It is important that the principal should play an active role in creating a situation in which innovative teaching strategies to deal with large classes can be investigated and implemented effectively. One such way is to encourage action research projects by individual or groups of teachers on specific teaching strategies. The principal can facilitate the process by helping to gather relevant articles, inviting experts to address the staff, keeping a record of the process, helping to write an action research report, and making available resources from his office—including the use of secretarial services. By doing this, the principal sends a clear message of support for staff development, as well as a willingness to share their burden, thus morally supporting teachers of large classes.

Also, in schools where *teachers* prefer to work in isolation and often in competition, implementation of cooperative learning will be problematic. However, in schools where a *collaborative culture* exists and collegial interaction is encouraged by school management, it becomes easier to attempt cooperative learning. A sense of community should be established in which teachers and administrators see themselves as working together to provide the best possible education to learners.

Changing the school *culture* while getting both school management and teachers working together to successfully implement cooperative learning in large classes, may be the biggest challenge facing any school. Johnson and Johnson (1994a:240;246–248) suggest organising both school management and teachers into *collegial support groups*. The purpose of collegial support groups is to provide opportunities for teachers to share information on cooperative learning, to share positive experiences,

to encourage each other, and to brainstorm solutions to difficulties encountered. Teams of teachers responsible for specific learning areas spend the time collaborating on the planning, designing, preparing and evaluation of cooperative learning lessons. In doing so, the work of developing the lesson materials and resources for implementing cooperative learning is shared equally. Working collaboratively with colleagues not only models the cooperation teachers require from their learners, but it also makes teachers' efforts at cooperative learning more manageable, thus increasing the quality of instruction in the school.

Once the conditions to ensure effective cooperative learning in large classes have been created, the scene is set for the implementation of cooperative learning. In the next few paragraphs formal as well as informal cooperative learning methods will be discussed.

5.3.4.2 Formal cooperative learning methods

Although several formal cooperative learning strategies are reported in the literature (Slavin 1995:71–128), only three will be discussed below. The reason why Student Teams Achievement Divisions (STAD) will be discussed, is that STAD is one of the most popular and simplest of all cooperative learning models, and thus a good model to begin with for doubtful teachers who are new to the cooperative approach (Slavin 1995:71). STAD and Jigsaw II, as generic techniques, are also particularly useful: not only are they applicable to a wide range of grade levels and subjects, but also to different *school and classroom characteristics*, which can include large classes (Slavin 1995:97). Lastly, STAD, Jigsaw II and Group Investigation supplement each other: where STAD focuses on learning specific facts, concepts or skills, Jigsaw II aims at teaching mastery of organised bodies of knowledge—which could include chapters in a textbook, story, biography, or history of events—and Group Investigation helps learners master problem solving and higher-order and critical thinking skills (Eggen & Kauchak 1996:297;301).

Since careful planning is required to implement cooperative learning successfully, the first model, STAD, will consequently be discussed with a view to providing guidelines for teachers of large classes with regard to planning and implementation.

- STAD: Student Teams Achievement Divisions

STAD is a form of cooperative learning developed by Robert Slavin (1991;1995). It uses groups to teach specific forms of content in which questions with one right answer can be posed. This include facts, concepts, generalisations, principles, academic rules and skills taught in mathematics, language arts, science, geography, graph or map skills, and any knowledge level outcomes (Slavin 1991:20; Eggen & Kauchak 1996:285). STAD is closely related to the direct instruction model. Direct instruction generally follows four steps, viz introduction, presentation, guided practice, and independent practice. When using STAD, the first three phases are—or can be—the same as those in direct instruction, or the presentation phase could be done using, for example, the question and answer or the inductive method. The key difference is in the *independent practice phase*. When STAD is used, independent practice isn't independent, but is done in cooperative learning groups. The steps for implementing STAD through the use of cooperative learning groups are described below.

Implementing lessons using the STAD cooperative learning model

The steps for implementing STAD are as follows (Slavin 1991:20–23; Abrami *et al* 1995:130–134; Eggen & Kauchak 1996:285–294):

Organising groups. STAD groups consist of four or five members who represent a cross-section of the class in academic performance, sex, and race or ethnicity. Teachers can use any way of forming groups, as long as each group is a microcosm of the whole class.

Whole class instruction. Teachers present new academic content to learners each week, using for example direct instruction, the inductive method or the question and answer method. The lesson is introduced by specifying the outcomes, the new content is explained, and learners are involved in guided practice. The latter is important to ensure that all learners have grasped the fundamental concepts of the lesson before they move on to team study.

Transition from whole class instruction to team study. Obstacles to smoothly functioning cooperative lessons are often logistical. For that reason, the process of getting learners into teams and getting them started on their work is one of the most challenging steps for teachers. When first introducing team study, teachers should provide a thorough and detailed explanation of how cooperative learning works as well as the specific procedures to be followed. For example, the process can be illustrated and modelled or role-played with one group before the rest begin their team study. Furthermore, to prevent the disturbance of moving desks around, furniture could be prearranged in groups. It is also useful to put information with regard to group membership, procedures for obtaining and turning in materials, procedures to follow during team work, and time frames, on a poster, to discuss it with the class, and leave it displayed for reference. By spending extra time on logistics at the beginning of group work, the foundation is laid for smoothly functioning groups later on.

Team study and monitoring. As mentioned before, team study replaces the independent seatwork that is common in traditional classrooms. During team study, team members study worksheets with a view to do well in the quiz that is completed later on. Worksheets consist of items that provide learners with practice to help them prepare for the quiz. It is important that the worksheets require convergent answers, that is, answers that are clearly correct or incorrect. (If the content doesn't lend itself to convergent answers, STAD isn't the most effective model to use.) As learners work in their groups, teachers need to carefully monitor their work to ensure that they are functioning smoothly. However, care should be taken not to intervene too soon. Since one of the goals of cooperative learning is to teach learners to operate as a team, teachers should avoid answering questions from individual learners unless it is clear the learner has checked with the group first. Finally, individual homework can be assigned, but it should not be the same as the team worksheets.

Individual quizzes. After one to two periods of whole class instruction and one to two periods of team study, learners take individual quizzes based on the content of the worksheets. These quizzes are assessments of the individual

learner's mastery of the academic content, which ensures individual accountability. Quizzes can either be corrected by the teacher, or, perhaps more practical in the large class, be exchanged and scored by team mates on the basis of clear memoranda. Papers with more than three mistakes can be handed to the teacher for follow-up work. In this way teacher time is saved. Instead of having to correct all the papers herself, the teacher now only has to focus her attention on specific learners with problems.

Improvement marks. This mark is based not on the learner's absolute mark for the quiz, but rather on the degree to which the mark exceeds a learner's past averages, thus encouraging learner progress. The purpose of improvement marks is to make it possible for each team member to contribute equally to the team score regardless of individual learner ability.

Team recognition. On a weekly basis, the teams with the highest marks and the learners who have high improvement marks or scored full marks on the quizzes, are rewarded by mentioning their names in a short newsletter or in an announcement on the notice board.

This completes the discussion of STAD. Next, another cooperative learning model, Jigsaw II, will be discussed.

- Jigsaw II

The Jigsaw strategy was initially developed by Elliot Aronson (1997) and his colleagues, to solve some of the problems of desegregation in American schools and to encourage positive interaction between black and white learners. However, the original Jigsaw required extensive development of special learning materials, which made teacher planning very demanding. As a result, a more practical form of Jigsaw, which uses existing text materials, was developed by Robert Slavin (1991;1995) as an adaptation of the original Jigsaw strategy.

Jigsaw II is a form of cooperative learning in which individual learners become experts on subsections of a topic and teach that subsection to team mates (Eggen &

Kauchak 1996:296). It differs from STAD in that it uses a concept called task specialisation. *Task specialisation* requires that different learners assume specialised roles in accomplishing the goals of a learning activity. The different steps of Jigsaw II are outlined below.

Implementing lessons using the Jigsaw II cooperative learning model

The steps for implementing Jigsaw II are as follows (Abrami *et al* 1995:146–148; Eggen & Kauchak 1996:296–300; Slavin 1995:122–128):

Preparing learning materials. Select chapters, stories or other units from existing curricular material, previously used texts, library books, encyclopedias, journals, *et cetera*. The selections should be brief if learners are to read the text in class, and longer if they are to be assigned for homework. In addition to learning materials, teachers also need to prepare an *expert sheet* for each unit, consisting of several topics central to the text. Expert sheets help learners focus on important information and issues while reading the text. These can include questions, outlines, hierarchies, *et cetera*. Research indicates that well-organised expert sheets help guide learner thinking and result in effective presentation (Eggen & Kauchak 1996:297). It is also necessary to prepare some form of quiz or essay test with at least two questions per topic, or to design a project to provide learners with the opportunity to demonstrate their learning. The questions should require considerable understanding, because learners will have had enough time to discuss their topics in depth. Easy questions would fail to challenge learners who spent a lot of effort in preparation. Teachers could also prepare an optional discussion guide to help learners discuss the topics in their counterpart groups.

Assigning learners to Jigsaw groups. In Jigsaw II, learners are assigned to heterogeneous groups of four to five members as in STAD, and given topics about which they are to develop expertise. (Learners either read the text in class or as homework.) The only logistical task apart from organising the furniture for group work—if there is no *permanent* arrangement—is to make certain that learning materials and expert sheets are available for learners.

When first introducing Jigsaw II, teachers may have to walk learners through one of the expert sheets to help them understand how it can be used to structure and guide their efforts.

Expert group meetings. After learners have studied their individual topics, learners with the same topic meet to discuss it, compare notes and clarify areas of misunderstanding. A discussion leader should be appointed to lead the discussion and make sure everyone is actively involved. Expert sheets handed out earlier help provide structure for this discussion.

Team report. Learners return to their Jigsaw groups and take turns teaching the group about their topic. This not only shares the experts' knowledge, but also encourages experts to organise and summarise their information. Material is then reviewed to ensure that everyone understands the content and is ready to take an individual quiz on the material.

Group recognition. The process for assessing individual learner performance and recognising group achievement is similar to the process used for STAD. Individual learners are held accountable for their understanding of the content, improvement marks are given for continually increasing achievement, and group recognition in the form of certificates, letters to parents, names and pictures on the notice board, and privileges can all be used.

This concludes the discussion of the Jigsaw II cooperative learning model. In the next section, Group Investigation, a cooperative learning model aimed at helping learners learn how to conduct research on specific topics, will be discussed.

- Group Investigation (GI)

Group investigation is a cooperative learning strategy that places learners in groups to investigate a given topic. Like other cooperative learning strategies, it focuses on learner help and cooperation to carry out the learning task. Unlike other strategies, its primary focus is the investigation of a specific topic (Eggen & Kauchak 1996:304).

According to Eggen & Kauchak (1996:304), teachers who use GI have at least three interrelated goals. First, GI helps learners learn how to *investigate* topics systematically and analytically. This results in the development of inquiry skills, which help learners to reach the second goal, which is the deep *understanding of content*. Third, and perhaps most important, learners from diverse backgrounds learn how to work *cooperatively* towards the solution of a problem. Thus, GI provides teachers with one strategy to reach all three goals—inquiry, deep learning of content, and learning to work cooperatively.

Group investigation, perhaps the most complex of the cooperative learning strategies, involves a series of six steps that are discussed below. Teachers will have to adapt some aspects of the approach to make it more suitable for their learners' ages, backgrounds and abilities, as well as the constraints of time and specific classroom conditions.

Implementing Group investigation activities

The steps for implementing Group investigation are as follows (Abrami *et al* 1995:161–165; Eggen & Kauchak 1996:304–310; Slavin 1995:111–119):

Organising learners into groups and identifying topics. Learners scan sources, propose topics and categorise suggestions to create a short list of topics. Learners then join a group of three to four members that will study a topic they are interested in. The alternative is to form groups and let the learners in each group select the topic. Although group composition is based primarily on interest in the topic, groups should be as heterogeneous as possible.

Planning the learning task. During the planning phase, learners in each group discuss the topic and the scope of the investigation, the different aspects of the topic they will investigate, assess available resources, plan a course of action and assign responsibilities to different team members. Three questions should guide their discussions: *What do we study? How do we study it? Why do we study it?*

Implementing the investigation. Each group carries out the plans developed in the previous step. This is usually a very time consuming phase, because learners need time to design data gathering procedures, gather data, analyse and evaluate data and reach conclusions. Time limits for completion should be set, but teachers should remain flexible. The complexity of skills required here should not be underestimated, and it is therefore necessary to provide training in the social and cognitive skills required for effective group investigation. Keeping all groups working productively during this phase can be difficult because some projects are more time consuming than others. A solution to the problem might be to use progress reports to help groups monitor their progress and help the teacher coordinate efforts among the groups.

Analysing results and preparing the final report. As learners gather information, it needs to be analysed and evaluated. Teachers can help in this process by encouraging groups to focus their attention on the major ideas they are investigating, to talk about and share their findings with other group members, and to use different ways of displaying data. For example, the construction of diagrams and tables helps learners understand and see relationships in their data. The final group product can be presented in the form of oral presentations, written reports, posters, demonstrations, dramatisations, *et cetera*.

Presenting the final report. This phase has two goals. The first is to share and disseminate information; the second is to enable learners to present information in clear and interesting ways. If learners do not know how to make effective presentations, instruction in presentation skills will have to be provided.

Assessment. Assessment of a group investigation activity should in the first place focus on assessing how learners carried out the investigation process, the higher order thinking skills they used, and their ability to apply their knowledge. The best way to assess learners on these grounds is by observing them while working with peers. Learners could also be required to reconstruct

their process of investigation, mapping out the different steps they followed. Secondly, the efficiency of the group and the extent to which group members effectively work together, should be assessed. Regular feedback from the teacher as the investigation progresses, as well as rating scales, can help learners to focus on critical skills. Lastly, the teacher needs to know if individual learners understand their projects and the topics studied. The report itself, essay questions requiring learners to explain the project, oral presentations, and interviews, can all help the teacher to assess the learners' understanding.

5.3.4.3 Informal cooperative learning methods

So far this chapter has focused on *formal* cooperative learning methods lasting several periods and requiring a lot of time and effort to plan. However, since it is surely not possible to use formal cooperative learning on a daily basis, teachers of large classes are advised to *weave informal cooperative activities*—on a daily basis—into otherwise traditional lessons, to prevent learners from getting bored and inattentive. These activities provide a break from the lecture format for a brief time. For example, if the teacher chooses to use whole-group instruction, learners can be involved *actively* by now and then using brief learner interaction techniques that require them to respond to what the teacher has said. These activities should form *an integral part* of teaching in large classes. Not only do they encourage learners to become active participants instead of passive listeners, but they also take less time to prepare than formal cooperative activities. Furthermore, by using a variety of instructional methods and modifying instruction within the traditional whole-group model, the teacher makes provision for learners with differing learning needs. Given the diverse learning needs and styles in the large class, teachers *should* use a variety of strategies for teaching and learning, not only on different days but also within any single class period (Frederick 1987:46). An understanding of learning needs and styles may enhance teaching effectiveness: learners may be more satisfied and more productive if their specific needs are addressed (Davis 1993:185).

Some of these informal cooperative techniques are described below (Slavin 1995:131–132; Abrami et al 1995:57; George, Lawrence & Bushnell 1998:499–500).

- Think-Pair-Share

This simple method is very useful for obtaining learners' opinions on a specific topic, or to find out what they know about a certain topic. It offers *all* learners an opportunity to express their responses to a question. While presenting a lesson to the class, the teacher asks a question that involves many opinions. Learners are instructed to think of an answer on their own, and then pair with their partners to share responses and reach consensus on an answer. Alternatively, they can be required to make some brief notes on their ideas before sharing them with their partners. Finally, learners are invited to share their thoughts with the rest of the class. While the sharing is in progress, the teacher notes down important ideas on the chalkboard.

- Spontaneous group discussion

This method works best when learners are permanently seated in groups. At various times during whole group instruction, learners can be required to discuss what something means, how a problem might be solved, to generate test questions on the topic under discussion, *et cetera*. This activity can vary from a few minutes in length to a whole period.

- Group brainstorming

Any task or problem that has many possible solutions is suitable for group brainstorming. As the idea is to keep this activity short (ten to fifteen minutes) and use it to *supplement* a traditional lesson or to prepare for whole class discussion, it works best when learners are already seated in groups. The instructions are simply that group members put their heads together and rapidly generate ideas *without discussion or evaluation*, or come up with as many creative solutions for a given problem as possible. The team facilitator lists *all* ideas, in abbreviated form, on a piece of paper, whereafter ideas are assessed against criteria developed by the whole class prior to the brainstorming session. The selected ideas are then shared with the rest of the class, and used as basis for whole class discussion, with the teacher acting as facilitator.

- Numbered heads together

This method is suitable for reviewing and checking comprehension during lesson closure, and an excellent way to add individual accountability to a group discussion.

Learners are organised in groups of four, with each member of the group given a number from one to four. A problem is posed or a few questions related to the content presented are written on the chalkboard, and team members are required to put their heads together and make sure everyone knows the answers. The teacher then randomly calls on a number; learners with that number all raise their hands, and the one called on by the teacher must explain the group's answers to the rest of the class.

- Team word webs

Team word webs (also called mind maps) are very useful for generating new ideas, elaborating on the ideas, illustrating relationships between concepts, and helping learners to relate new knowledge to prior knowledge. *Team word webs* start with a central idea placed in the centre of a 'web'. The branches of the web, containing related ideas and specific details, are being developed by group members cooperatively. Team members can be required to do word webs at the beginning of a lesson as a way to assess prior knowledge, or at the end of a lesson to summarise what has been learned.

- Three step interview

This method is suitable for sharing information, impressions, reactions or conclusions. Learners form groups of four, then divide into pairs, in which each member of the pair takes a turn interviewing the other to find out more about his responses with regard to a topic or problem specified by the teacher. (Thus each learner is interviewed once and is also the interviewer once.) Then each learner shares with the group of four what was learned from the activity.

5.3.4.4 Assessment in cooperative learning

In cooperative learning, as in other types of instruction, assessment is often a very complex issue. Decisions have to be made concerning why assessment is done, what will be assessed, who will assess, and how will the assessment be done. Having learners reflect upon their learning is an important aspect of cooperative learning. In the next few paragraphs, these questions will be addressed.

- Why assess?

Assessment in cooperative learning is done mainly to gather information about group members' understanding of the content, to motivate group members to work together towards the group goal, or to provide direction for both learners and the teacher on how well the group members are working together (Abrami *et al* 1995:104).

- What will be assessed?

Before the start of group work, the teacher should clearly state the outcomes learners have to achieve by the end of an instructional unit, as well as the criteria for meeting those outcomes. Frequently, outcomes are defined solely in terms of academic skills or content to be acquired. However, if teachers also want to find out how well learners are working together as a group, outcomes should also include interpersonal and group work skills.

- Who will assess and how?

Generally, assessment is a partnership between teachers and learners. Firstly, *teachers* are involved in assessment of learners on a daily basis, and they are expected to collect and keep evidence of learner progress and achievement to back up their judgement. The learning progress of individual learners can be assessed by building a portfolio of their test scores, assignments, homework, projects, *et cetera*. Their learning processes can be assessed by observing them as they work in groups. However, it is important to keep in mind that not every cooperative activity needs to be graded.

Secondly, *learners assess through self-assessment*. The latter is an important skill for all life long learners: learners need to be helped to reflect on their progress and performance and to decide what they need to do to improve performance and, thus, where to focus their efforts. The more they develop these skills, the less dependent they will be on the teacher. As increasingly independent learners, they will be well placed to access learning opportunities throughout their lives.

Thirdly, *learners assess through peer assessment*. Learners should be helped to develop peer assessment skills through the assessment of each other in pairs or in

groups. Initially this should be done in an informal way by ticking answers and counting the marks, or by giving each other help and advice. A more advanced method involves the teacher displaying every group's work in turn, and then asking learners to evaluate certain parts of it according to the different assessment criteria. It is important to stress that negative remarks are unacceptable, and that the idea is to explain why certain items are better than others (Gauteng Department of Education 1999:11–12).

5.3.4.5 Next steps

In cases where teachers plan to implement cooperative learning for the *first time*, the most logical first step is to find a classroom in which cooperative learning could be implemented. In such cases it is suggested that one start with a class that is as a rule well-behaved and cooperative. Furthermore, it is recommended that teachers think big, but start small, by choosing some of the *informal* cooperative learning methods first. The classroom climate should then be worked on until it is ready for more advanced cooperative learning. Teachers should begin with an attitude of experimentation, and not expect everything to run smoothly at first—problems with implementation are natural, especially if a teacher's specific teaching style does not naturally fit, at first, with cooperative learning (George, Lawrence & Bushnell 1998:527). New teaching skills are not acquired overnight, but involve a *process* that develops and grows throughout a teacher's career. Once teachers have had some experience with cooperative learning, it is recommended that they adapt both formal and informal cooperative learning methods to suit their own situation, style, needs and teaching goals. Finally, teachers should find supportive colleagues who are also using cooperative learning, to help them survive the implementation stages of cooperative learning and prevent them from giving it all up if it doesn't succeed at first.

In this section on cooperative learning, the importance of individualising learning by varying instructional methods in the large class and providing opportunities for all learners to be successful during group work, was emphasised. Apart from cooperative learning, there are also other useful strategies that teachers of large classes—who cannot attend to every individual learner that needs help—can use to accomplish these goals. These strategies will be discussed next.

5.3.5 Individualisation in the large class

Although providing opportunities for individual learners in large classes to engage in a range of different activities that suit their specific level and needs is a particularly demanding challenge, this diversity can be managed through careful planning of suitable activities such as seatwork and peer tutoring. In this paragraph the focus will therefore be on the *individualising of learning tasks* through independent seatwork and peer tutoring.

5.3.5.1 Independent seatwork

Independent seatwork or practice *follows a lesson programme presentation* and is never the main mode of instruction. During this phase learners practice skills or concepts introduced earlier on their own, developing both automaticity and transfer (Eggen & Kauchak 1996:196), while the teacher circulates around the room, monitoring learners and providing individual feedback.

Although worksheets are the most popular kind of activities to use, other alternatives include silent reading, brainteasers, simple experiments, making up problems and solving them, doing puzzles, summarising the lesson in their own words, *et cetera*. Teachers should take care to develop activities that are *meaningful extensions* of lesson programmes, and not just busywork. Therefore, before any seatwork is assigned, teachers should ask themselves, '*Does doing this work help learners achieve lesson programme outcomes?*'

Sometimes one, or several, learners will finish their seatwork before the end of the period. In such cases learners can either be allowed to do silent reading, work on assignments from other classes or do enrichment activities. For this purpose, the teacher will need to develop a file of alternative activities and exercises on *different difficulty levels* that can be used for enrichment work.

To benefit from seatwork, learners must *stay involved* and *do the work*. One way to ensure their sustained involvement is to make sure they see the connection between the seatwork and the lesson programme. The outcomes of the activity should be clear, the reasons why they are doing it should be explained, all the materials that might be

needed should be available, and the work should be easy enough that learners can succeed on their own (Woolfolk 1995:463).

Particularly in the large class, the teacher will need clear rules with regard to seatwork to ensure that it does not get out of hand. For example, the teacher needs to establish rules as far as 'no talking' or 'quiet talking' is concerned, as well as about what learners should do when they need help. In the latter case, it is suggested that teachers spend time at the beginning of the year explaining to learners how to help each other, how to ask questions and how to explain. Another useful rule is to let learners *first* consult a peer, before they are allowed to raise their hands to obtain the teacher's help.

5.3.5.2 Peer tutoring

Peer tutoring is a strategy that provides opportunities for one or more learners to receive one-on-one attention as well as regular feedback on the correctness of their efforts. Because they work one-on-one, learners are able to find out whether their peers have, for example, mastered a certain concept, or need additional explanation. Peer tutoring can be done during class by pairing learners at similar levels to help each other, or by asking a learner who has achieved a certain level or mastered a certain concept, to work with another learner who has not. The learner who receives assistance—the tutee—benefits from individualised instruction, while the peer tutor benefits from providing instruction (Emmer 1997:175; Topping 1988:4). According to Slavin (1987a:9), learners who explain to one another *learn* by doing so. When learners have to organise their thoughts to explain ideas to peers, they must engage in 'cognitive elaboration'¹² that greatly enhances their own understanding.' Ellis and Feldman (1994:159) affirm this by saying that

[t]he expectation that one will have to summarize, explain, and perhaps teach what one is learning requires higher levels of cognitive organization and elaboration than simply learning the material for one's own use.

¹² Cognitive elaboration refers to the process of forming links between ideas that are stored in memory. It is one of the most effective ways of promoting learning and long-term retention (Eggen & Kauchak 1996:282).

Having learners work with their peers in pairs can be motivating, offers a certain amount of individualisation (Valerien 1991:41) and more variety in methods. All of this helps satisfy individual differences and preferences, as well as resulting in more on task behaviour (Price & Nelson 1999:122). The idea that peer tutoring increases the amount of time that learners work on a task, was reiterated by Azmitia (1988:88), who remarks that the presence of a partner can prevent learners from giving up in a difficult situation and motivate them to persevere.

Properly handled, peer tutoring can ease the strain of dealing with large classes by freeing the teacher from routine tasks, 'making it possible to concentrate on strategy—planning the curriculum, pacing the pupils' progress through it, managing all the educational resources, and evaluating the outcome of instruction' (Goodlad & Hirst 1989:20). According to Topping (1988:9) teachers must increasingly function as managers of effective learning, rather than the source of all available wisdom. Discipline problems can also be reduced. It is a common experience of teachers that learners often create trouble to get attention. Since peer tutoring gives learners a great deal of attention—whether as tutors or tutees—it offers the possibility of reducing discipline problems (Goodlad & Hirst 1989:67).

- Organising peer tutoring

Research evidence indicates that peer tutoring *can* work. However, it also shows that peer tutoring can fail to work if it is not carefully planned (Topping 1988:27). Effective peer tutoring requires that certain management issues be addressed. The golden rule is, however, to keep it as small and simple as possible. It should be seen by the teacher as one of many instructional techniques, and is intended to build on teacher instruction and not replace it. The following issues should be addressed:

What will be tutored

Peer tutoring is not appropriate for all content areas, and decisions on what will be tutored will have to be preceded by a careful examination of different content areas and the possibilities they offer for peer tutoring. It is suggested that one start with a straightforward area adaptable to the approach, and as the competence of learners increases, that one experiment with more unusual

areas. The same applies to skills: peer tutoring should start off with simple skills, for example rote learning, and then gradually move on to the teaching of thinking skills and problem solving strategies. Depending on the type of content being taught, learners can work as tutors to drill¹³ each other on, for example, spelling, vocabulary, punctuation, capitalisation, reading skills, oral practice—for example foreign languages or English as a second language—mathematical facts, computations, *et cetera*. Peer tutoring might also include helping each other review for tests, checking and correcting homework, and explaining answers to questions or solutions to problems.

Where will tutoring occur?

As far as peer tutoring in the large class is concerned, the logistics should be kept as simple as possible. Seating arrangements should be such, that moving into peer groups doesn't consume too much time or cause too many disruptions. Also, noise generated by twenty or more pairs of enthusiastic learners too may well be a problem. It is therefore worth experimenting with different ways of *scheduling* peer tutoring to minimise noise levels that may be distracting for other learners. For example, if tutoring is to occur entirely in class time, the best arrangement may well be to stagger the various tutoring sessions so that not all pairs in the classroom are involved in peer tutoring at the same time. For example, while a third of the class is involved in working side by side—and as quietly as possible—at their desks, the rest can be busy doing seatwork.

Training of tutors

If the intention is to use peer tutoring often during teaching, it is advisable to train tutors with regard to the behaviours their role requires. Potential peer tutors should be shown how to model desired behaviours (for example demonstrate a skill, explain a concept, listen to each other), instructed in how to ask questions to assess the other learner's understanding, and counselled on interpersonal behaviours (Emmer *et al* 1997:175). It is also important that the teacher should be assured that potential peer tutors have sufficiently mastered

¹³ To ensure that routine drill doesn't become boring for both tutor and tutee, the session should not last for more than fifteen minutes at the most.

certain concepts or skills to be able to provide assistance, before they are appointed to help others.

5.4 CONCLUSION

In this chapter extensive guidelines and strategies for large class teaching have been provided, based on the problems identified in previous chapters. An awareness of such guidelines and strategies as well as a willingness to experiment with these innovative teaching strategies, will hopefully result in more effective teaching and learning in the large class. In Chapter 6, final conclusions, recommendations for teaching practice and teacher education and training, and suggestions for future research are dealt with.

CHAPTER SIX

FINAL CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This dissertation has focused on identifying the problems associated with large class teaching in South African secondary schools (see Chapters 3 and 4), and has aimed at suggesting effective teaching and learning strategies to overcome these problems (see Chapter 5), thus improving the educational experience for both teacher and learners. In this chapter the final conclusions to the preceding study are drawn in the light of the research problem stated in Chapter 1. Furthermore, recommendations for teaching practice and teacher education and training are made and finally, areas which require further research in the South African context of large class teaching are indicated.

6.2 FINAL CONCLUSIONS

The final conclusions to this study are formulated on the basis of the following sub-problems derived from the broad research problem as set out in Chapter 1, paragraph 1.4.2:

- *How is teaching in the South African context affected by the recent changes to the education system?*

Recent educational changes with regard to curriculum and human resources management, as well as the reconstruction of the South African education system, were discussed in Chapter 2. It was concluded that due to government's redeployment of the teaching force which necessarily led to a rise in learner:teacher ratios—thus, *more* large classes—together with the extra demands

of implementing the new outcomes-based approach to teaching, South African teachers are faced with an enormous challenge in their quest to teach effectively in large classes.

- *Which specific instructional and learning problems are caused by teaching large numbers of learners in a classroom?*

Relevant literature sources on the effects of class size on teaching and learning were analysed in Chapter 3, to indicate the variety of instructional and learning problems that are present in the dynamics of teaching and learning in large classes. It was concluded that the answer to the class size conundrum lies with the characteristics of teachers, and the opportunities they are willing *and able* to create for teacher-learner interaction and learner participation in the large class. It was pointed out that the instructional repertoire of most teachers the world over is very narrow, and that they will teach no better in smaller classes than in larger ones, if they are not well educated themselves with regard to the use of innovative teaching strategies. This highlights the need to address classroom management and teaching methods as variables in the class size dilemma, instead of focussing on the *numbers* issue.

- *Which specific instructional and learning problems are caused by teaching large numbers of learners in South African schools?*

Data on teaching and learning in large classes were gathered during observation and informal talks with teachers. Fieldwork data were analysed to identify common problems with regard to large class teaching, and on the basis of this data it was concluded that most teachers need information and training as far as specific instructional and classroom management strategies to handle large classes effectively are concerned (compare Chapter 4). These strategies include large class management and classroom teaching in large classes (see the next paragraph for a more comprehensive listing of strategies).

- *Which specific guidelines could be suggested to implement the strategies identified previously, to ensure the effective teaching of large numbers of learners in the classroom?*

Comprehensive guidelines with regard to large class management and classroom teaching in large classes were given in Chapter 5. Aspects of large class management that were addressed include the proper organisation of the classroom space, and the importance of rules and procedures in creating a productive working environment. As far as classroom teaching in large classes is concerned, the focus was on aspects such as planning for effective teaching, questioning strategies to ensure learner involvement, whole group instruction as a strategy for large class teaching, cooperative learning, and individualisation in the large class.

6.3 RECOMMENDATIONS FOR TEACHING PRACTICE AND TEACHER EDUCATION AND TRAINING

In the light of the above findings, the following recommendations can be made:

6.3.1 Teaching practice

Teachers are the key figures in providing learners in large classes with optimal opportunities to learn successfully. Hence teachers should be empowered to *teach more learners* effectively by providing teachers with strategies for large class teaching. (These strategies will include aspects of classroom management and classroom teaching as mentioned above.) Furthermore, teachers should be encouraged to assume a *positive attitude* with regard to the large class phenomenon: these are *critical* aspects of change. The possible reluctance of teachers to experiment with innovative and nontraditional teaching methods so as to cope with forty or more learners in a classroom—perhaps due to entrenched assumptions about what constitutes good teaching or negative attitudes with regard to large class teaching—should be investigated and rectified. In this regard, in-service training courses and regular workshops should be implemented on both national and provincial level, where the focus is on the challenges of teaching large classes, and where teachers can share their problems, experiences *and* solutions with colleagues in a *positive* way.

The process of changing attitudes and teaching styles in order to teach effectively in a new and changing context, calls for a different kind of relationship with colleagues than is presently found in many schools, and is not likely to be addressed successfully unless teachers see themselves as a *team* working together to provide excellent education for their learners. This could involve evaluating one another's teaching, coaching and teaching one another about appropriate skills, and solving problems unique to their situation. Teachers should be encouraged, through cooperative vision and action, to establish a school climate that will be supportive of excellent education. Such a spirit might counter frustration and low morale in addition to dealing with the problems of large class teaching.

Lastly, in-service training courses and workshops should motivate teachers to deepen their *reflective capabilities*, thus becoming open and flexible with regard to new practices, and sufficiently confident to adapt to changing circumstances. Since teachers develop specific teaching styles, routines and procedures that suit their personalities and with which they feel comfortable, a change of approach might represent a major undertaking for most teachers. This requires commitment on the part of teachers, and, more important, *continued support from within the school and from the educational authorities*. Lasting effects can only be brought about if they are given official sanction and followed up by support from the central authority. It will not be enough to provide schools with all the necessary strategies to teach large classes effectively and hope that they will succeed. Ongoing support to schools by the national and provincial departments is going to be crucial. Support can be provided through education departments at universities, teacher organisations, NGO's, the private sector and development officers (subject advisers), and can involve encouragement of in-service activities, as well as the provision of facilities and resources, both financial and human.

6.3.2 Teacher education and training

Given our current situation, which is characterised by a massive demand for access to the education system and a severe lack of financial resources, a major task of teacher education and training institutions—*both pre-service and in-service institutions*—should be to inspire would-be teachers to change the deeply embedded assumptions

most people hold about teaching, viz that *quality* teaching can only take place in a situation where there is one teacher face-to-face with a small number of learners, and that classes of forty or more learners constitute a problematic and imperfect teaching situation. Furthermore, teacher education and training institutions need to discover effective *strategies* in which educational goals can be achieved in our *new* context—larger numbers of learners—and encourage would-be teachers to embrace these new practices. Courses could focus on managing the large class, using cooperative learning and whole group instruction effectively, involving learners in the teaching learning situation through effective questioning, assessment in the large class situation, and individualisation in the large class.

Lastly, institutions focusing on pre-service training should avoid being over ambitious with regard to the effectiveness of initial teacher education and training on the competences of aspirant teachers, and rather explore the possibilities of *in-service training* to create better practitioners. To this end, educational authorities should consider creating nationwide support centres for teachers where in-service training and teacher support could be offered. According to Hartshorne (1987:13), teacher participation in the control and management of such centres is essential to their success, and '[u]ntil this is done teachers will continue to regard in-service education largely in terms of passively receiving solutions rather than of actively solving problems.' Furthermore, since a whole corps of skilled and experienced ex-college educators will soon be without jobs due to the incorporation of colleges of education into higher education, the education department need not look any further for suitable educators to offer in-service courses and support to teachers.

Alternatively, the use of professional practice schools (Levine 1996:634) could be considered. Professional practice schools are meant to be the equivalent of a trade apprenticeship, or more accurately, an apprenticeship cum internship cum mentorship. The point is that in such a school, an already qualified educator applies his or her theoretical knowledge in a simulated real life setting under the supervision and guidance of expert tutors, who in such a situation function as mentors. According to Levine (1996:634), '[p]rofessional practice schools are meant to become *the* clinical settings for all student teaching, internship, and practicum experiences'.

6.4 FURTHER RESEARCH

In general, very little research has so far been done on the phenomenon of large class teaching in South African schools. Thus, this field lies fallow and offers almost unlimited opportunities for research.

In particular, the recommendations for further research are as follows:

- While this dissertation has centred on *suggesting strategies* for effective teaching and learning in large classes, research is needed to determine the *appropriateness* of such strategies in the large class.
- Research is needed on the long-continued effect of teaching under adverse conditions—large classes without the necessary resources *and* support—on the morale of teachers in South African schools.
- The redesign of the traditional classroom to ensure the more imaginative use of space and facilities could be investigated.
- A comparative study could be done to investigate the experiences of countries like South Korea and Japan. Despite classes of forty or more learners being the norm in these countries, learners outperform their Western counterparts as far as Mathematics and Science are concerned (compare the results of the Third International Mathematics and Science Survey—TIMSS).
- Research on *subject specific strategies* for large class teaching could be undertaken. Most of the literature investigated strategies for teaching English, but research is also needed on strategies focusing on other subjects for example Mathematics and Science.
- The use of skilled volunteers from universities as well as parent and community volunteers to reduce the workload of teachers of large classes could be investigated.

6.5 IN CONCLUSION

The present situation in most South African secondary schools is one of rising learner numbers and not enough teachers to teach these learners. Reductions in the numbers of learners in classes will require additional teachers, and, as indicated in Chapter 1 this is beyond the resources of the country. Thus, realism suggests that large classes will be a feature of the South African teaching context for many years to come, and that a solution other than a monetary solution should be sought. This study has attempted to indicate that the problem of large class teaching is not insurmountable, provided that both teachers and educational planners adopt a spirit of exploring and implementing coping strategies in stead of becoming demoralised by the situation. The researcher is of the opinion that the most cost effective solutions are those which have to do with helping teachers to become more effective teachers of large classes, rather than with reducing class size.

ANNEXURE A

806 Church Street East
ARCADIA
0083
23 February 1999

The Principal

Dear Sir/Madam

RESEARCH REGARDING LARGE CLASS TEACHING

I am a lecturer at the South African College for Teacher Education (SACTE) and am involved with general teaching method. At present I am conducting research in my private capacity on problems associated with large class teaching as well as strategies to deal with these problems, and I would like to involve your school in my research project.

The following gives an overview of the problem of large class teaching as seen by me:

As a result of my involvement in the in-service training of teachers, I have become aware of the reality of large classes—up to forty or more learners. Handling large classes effectively poses a major problem for teachers and causes demoralisation and despair amongst them. However, the phenomenon of large classes need not be regarded as a major obstacle, but should rather be seen as a challenge. Teaching large classes well will be problematic if teachers, administrators and educators continue to view traditional teaching methods as the only means of transferring knowledge. It is time we started to think innovatively and creatively about teaching large classes. The purpose of this study is to develop clear guidelines to empower teachers to teach effectively in classes of about 40 or more, with a view of improving the educational experience for both learner and teacher.

The strategies I intend to use to gather information in the course of my fieldwork, will include mainly classroom observation (Grades 8, 9 and 10), and if necessary at a later stage, probably focus group discussions with teachers as well.

I would be grateful if you could let me know as soon as possible whether you are interested in involving your school in this research project. This research project could solve many of the problems currently experienced in large class teaching.

I hope my request will be considered favourably.

Yours sincerely

Mrs Susan van den Heever
Senior Lecturer: Department of Education, SACTE.

ANNEXURE B

CHECKLIST CUM OBSERVATION SCHEDULE

PHYSICAL SETTING CHECKLIST

1. Subject: _____
2. Teacher qualifications & teaching experience: _____
3. Date & class period: _____
4. Number of learners: _____
5. Is classroom size suitable for the number of learners?

6. Is the classroom design flexible enough to allow for the reorganisation of furniture for activities such as group work?

7. Does the teacher have enough space to move around? (*e g* between rows, in front of the chalkboard.)

8. Are there enough desks and chairs for the number of learners?

9. Do learners have enough space to work, read or write comfortably?

10. Is there a power point? _____

11. Is the writing on the chalkboard visible from the back of the classroom?

OBSERVATION SCHEDULE**TEACHER ACTIONS**

1. Interaction with learners (*e g* authoritarian/dogmatic/democratic/impersonal).

2. Teaching style (*e g* variety of innovative strategies, mostly direct or whole group instruction, cooperative learning, groupwork, peer teaching, individualisation).

3. Does the teacher make use of the opportunities that a variety of opinions, abilities, backgrounds and attitudes in a large class offer?

4. Does the teacher adopt his/her teaching methods to cater for a large group?

5. What types of teaching and learning aids does the teacher use?

6. How does the teacher handle learner reactions to questions? (*e g* praise/encouragement/using learners' ideas to stimulate discussion, *et cetera*)

7. What does the teacher do to control learner behaviour?

8. What is the nature of the teacher's administrative and organisational tasks? (*e g* discipline, reprimanding learners, approving/disapproving verbalisations, keeping records, making announcements, distributing materials, collecting homework, marking, *et cetera*).

9. How does the teacher handle these tasks?

LEARNERS

10. Learner participation (*e g* are learners actively involved in the teaching-learning situation/apathetic/unresponsive/enthusiastic/motivated/daydreaming/note-passing/joking/listening attentively/answering questions, *et cetera*).

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