THE ROLE OF BRAIN DOMINANCE IN THE MAINTENANCE OF LEARNER DISCIPLINE

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Abstract

The role of brain dominance in the maintenance of learner discipline

Recent research in especially Education Law has shown that maintaining discipline in South African schools constitutes a problem for many educators. Research over the last few decades has also indicated a strong link between brain dominance and behaviour. The aim of this research was to establish to what extent the brain dominance of learners and educators influence their attitude towards and perceptions of the implementation of schools' codes of conduct and their resulting behaviour in class. Educators' response to indiscipline was studied against the backdrop of the Constitution, and more specifically the Bill of Rights, as well as other legislation pertaining to learner discipline.

The findings revealed a strong link between brain dominance and the behaviour and attitudes of learners and educators regarding school discipline. It is therefore suggested that the code of conduct should be developed with input from learners and educators from all four quadrants of the brain. Where possible, a measure of flexibility should be included in these documents in the form of incentives for good behaviour and by using discretion when implementing the code of conduct. The insight of educators and learners into the implications of brain dominance was also found to be crucial.

(Key concepts: Education Law, the Bill of Rights, school discipline, code of conduct, brain dominance, brain preference)

Die rol van breindominansie in die handhawing van leerderdissipline

Onlangse navorsing in veral die vakgebied Onderwysreg het getoon dat die handhawing van leerderdissipline in Suid-Afrikaanse skole vir baie opvoeders 'n probleem is. Navorsing oor die afgelope paar dekades het ook 'n sterk verband aangedui tussen gedrag en breindominansie. Die doel van hierdie navorsing was om vas te stel in watter mate die breindominansie van leerders en opvoeders hulle houding tot en persepsies van die implementering van die gedragskodes beïnvloed en ook hulle gevolglike gedrag in die klaskamer. Die reaksie van

opvoeders teenoor wangedrag is ondersoek teen die agtergrond van die Grondwet, meer spesifiek die Handves van Menseregte, asook ander wetgewing wat op leerdergedrag betrekking het.

Die bevindings het aangetoon dat daar 'n sterk verband bestaan tussen die breindominansie en gedrag en houding van leerders en opvoeders met betrekking tot skooldissipline. Daar word gevolglik aanbeveel dat die gedragskode ontwikkel word in samewerking met leerders en opvoeders wat al vier die kwadrante van die brein verteenwoordig. Waar moontlik, behoort 'n mate van buigsaamheid deel te vorm van dié dokumente in die vorm van aansporings vir goeie gedrag en in die implementering van die gedragskode. Daar is ook bevind dat die insig van opvoeders en leerders in die implikasies van breindominansie, van kritieke belang is.

(Sleutelbegrippe: Onderwysreg, die Handves van Menseregte, skooldissipline, gedragskode, breindominansie, breinvoorkeur)

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CHAPTER 1

Introduction, problem statement, objectives and research methodology

1.1 LITERATURE OVERVIEW

The Constitution of the Republic of South Africa (SA, 1996a) as the supreme authority of the land, ensures that everybody's rights are protected. The Bill of Rights (chapter 2 of the Constitution) places a strong emphasis on values such as equality, human dignity and freedom. It is clear that these values have a direct bearing on discipline in schools. The role of educators are crucial in protecting these rights of the learners in their care. The Bill of Rights (SA, 1996a) states pertinently (section 28 (2)): "a child's best interests are of paramount importance in every matter concerning the child". Add to this section 3.1 of the South African Council for Educators Code of Conduct, (RSA, 2000): "an educator acknowledges the uniqueness, individuality, and specific needs of each learner, guiding and encouraging each to realise his potentialities" and "uses appropriate language and behaviour in his interaction with learners." The question remains: do educators make the link between equality, dignity, uniqueness, specific needs and a child's best interest on the one hand, and on the other hand their own style of disciplining, determining their behaviour towards learners, which may be ignoring these rights as far as certain learners are concerned? Behaviour, according to whole brain researchers (Herrmann, 2002; Neethling 2004a), can be directly linked to brain dominance in most circumstances. The educator who does not understand the functioning of the whole brain will tend to favour those learners who are "more like me" and may tend to judge "different" behaviour to be "misbehaviour" in others (Docking, 1987:62).

When the Elton Commission (Department of Education and Science and the Welsh Office, 1989:67-72) finds wide consensus that discipline is improved when the educator knows his learners as individuals, this would strongly imply the understanding of the learners' brain dominance as well (Parrish, 2003). Other points of the report that support this, are that the curriculum should offer stimulating and "suitably differentiated programmes" with the emphasis on "the needs and interests of individual pupils" (Wolhuter & Oosthuizen, 2003a:3).

For many, the very rights which have to protect, have become over-emphasised, resulting in a lack of self-discipline and therefore in the erosion of discipline in schools (De Klerk & Rens, 2003:355; Rossouw, 2003:424). The recurring theme associated with this phenomenon is a lack of respect (for one another, educators, property, etc.) (De Klerk & Rens, 2003:359). There are widespread cries for action and advice on how to restore respect and discipline in our schools. Many of the answers, educators have to start grasping, lie with them. Respect flourishes where people (learners) are treated as worthwhile individuals and where their differences are acknowledged and respected.

When searching for answers to why students misbehave, more and more opinions are emerging on the behaviour of the educators and the education system as causes of indiscipline. It would be a simplification to link all the examples of educator behaviour quoted to brain dominance, but it is a link that needs further investigation. Docking (1987:7) states that indiscipline is often the reaction of learners being bored and frustrated with a system that offers them little and Jankowski (2002) believes that the different thinking styles of students need to be taken into account if schools want to see changes regarding discipline. One cause of learner misconduct according to Rossouw (2003:426) is bad relations with specific educators caused by the personality or approach of the educator. Van der Walt (2003:338) cites Humalda (1995:73) who gives acknowledgement to the fact that it is impossible to see all people "op één noemer".

It is clear from several reports after the banning of corporal punishment at schools in South Africa (Msomi, 2000) that many educators were at a loss as to how to find new ways of disciplining learners. Understanding brain preferences, and therefore knowing learners as individuals, may just open up new areas to finding these new ways (Mentz, Wolhuter & Steyn, 2003:399).

Research regarding the specific functions of the two brain hemispheres started in 1961, and later developed to investigations and experiments related to the preferences for either the left or the right brain thinking processes. This brain research has specific relevance for this study regarding some legal aspects of the interaction between learners and educators in disciplinary situations.

The findings show that some people are more analytical, logical and factual, while others are more orderly and conservative. People with right brain dominance might be either emotional, interpersonal, expressive or holistic, flexible and conceptual. These differences in personality may have an impact on the interpersonal relationships in the educational setting, seeing that the behaviour as well as the expectations from others' reactions may differ and even clash.

Herrmann (Herrmann, 2002) and Neethling (Neethling & Rutherford, 2001:123) agree that when learning activities are in alignment with the learner's brain preferences, the chances of successful learning is improved. This, according to their research, holds true for the learning environment and teaching style of the educator. Many authors refer to the frustration of learners whose brain dominance is not aligned to that of the educator and remark that certain areas of the brain are being neglected in education. Howard Gardner (Rossman, 2003) sums it up in these words: "We are not all the same; we do not all have the same kind of minds ... and education works more effectively if these differences are taken into account." More importantly is the impact of these differences on behaviour in class. Fadely and Hosler (1983:63) state that varying hemispheric

styles will produce differences in behaviour and personality. This, according to some researchers, could very well be the missing link towards restoring discipline in the classroom. The Elton Report (Department of Education and Science and the Welsh Office, 1989:13) also points out the link between content and delivery of the curriculum and the motivation and behaviour of pupils.

The Guidelines for the consideration of governing bodies in adopting a code of conduct for learners (Department of Education Notice 776 of 1998) reaffirms the democratic values of human dignity, equality and freedom which the school has to protect, promote and fulfil. Protecting these rights by ensuring that "no person may unfairly discriminate against a learner" could once again point towards taking the individuality of learners into account. Different brain preferences of learners and how these link to behaviour and attitudes towards disciplinary measures, may have to be taken into consideration when developing a code of conduct for learners. Governing bodies may have to take cognisance of the possible necessity for incorporating differences of learners' varying brain preferences in the process of drafting codes of conduct for schools.

The importance of brain dominance in teaching styles, lesson content and discipline has not been researched in depth in South Africa. According to Neethling (2004c), those schools that are applying the whole brain in their teaching, are returning positive feed-back. Unfortunately the extent of this application in South Africa is limited to a few schools, and the connection between brain preferences and discipline, has apparently not been made. None of the sources on discipline studied by the researcher has shown any indication of such research.

1.2 PROBLEM STATEMENT

The following problems have been identified and will warrant careful research:

1. Do educators fully comprehend and apply the relevant principles from the Constitution and other education law determinants in their style of discipline?

2 (a.) What are the implications of differences in the *brain dominance of learners* for the drafting and implementation of legislation pertaining to learner discipline?

2 (b.) What are the implications of differences in the *brain dominance of educators* for their approach to learner discipline in the classroom and their implementation of schools' codes of conduct?

3. What is the influence of the brain dominance of respectively learners and educators on learners' attitudes towards and perceptions of the implementation of schools' codes of conduct and their resulting behaviour in class?

1.3 RESEARCH AIMS AND OBJECTIVES

The objectives of the study is to determine

- whether educators fully comprehend and apply the relevant principles from the Constitution and other education law determinants in their style of discipline;
- the implications of differences in the *brain dominance of learners* for the drafting and implementation of legislation pertaining to learner discipline;
- the implications of differences in the *brain dominance of educators* for their approach to learner discipline in the classroom and their implementation of schools' codes of conduct;
- the influence of the brain dominance of respectively learners and educators on learners' attitudes towards and perceptions of the implementation of schools' codes of conduct and their resulting behaviour in class.

1.4 RESEARCH METHODOLOGY

The data sources which will be utilised and the empirical investigation which will be conducted, will be outlined in the following paragraphs.

1.4.1 Data sources for literature overview

Literature will be obtained by utilising primary as well as secondary literature sources. These will be analysed in the literature overview, and will include books, articles, legislation, Internet data and interviews related to brain dominance and education, more specifically related to discipline in schools. Key words for data search would include: *brain dominance, whole brain thinking, 4-hemispheric functioning, school discipline, code of conduct, educational law, behavioural problems.*

1.4.2 Empirical investigation

The brain profiling of the candidates, the data collection and analysis, the selection of the participants and the ethical strategies will be discussed here.

1.4.2.1 Pre-qualitative testing and profiling

To ensure that the focus groups and individuals that will become involved in the interview process are grouped according to their brain preferences, the Neethling Brain Instrument (NBI^{TM}) will be used to profile educators and learners.

1.4.2.2 Data collection

Data will be gathered by means of interviews with educators and learners, either individually or in focus groups. Participants will be identified according to their brain preferences in order to select whole brain groups, in other words groups which represent all quadrants of the brain. This will be purposive sampling and participants who fit the criteria, will be selected. Black as well as white participants will be selected in order to ensure that the findings will be applicable to different racial groups. A semi-structured interview schedule will be developed.

By conducting the interviews, the researcher herself will become a measurement instrument. An interview will be conducted with a legal authority regarding the findings and recommendations of the study. The Codes of Conduct of the participating schools and 4 other schools selected randomly will be studied in terms of the issues relevant to this study.

1.4.2.3 Procedure of selection of participants

- Schools located in at least three provinces will be identified as part of the research: 4 high schools, 3 primary schools (grade 7) and 1 preparatory school (grades 1 to 3). The participants will be selected through purposive sampling. In other words, they will not be selected at random, but because of who they are (educators and learners) and what they know (the school environment, disciplinary practices and the codes of conduct for example). They will also be selected because of their brain profiles in order to select a group with a variation of brain preferences. The specific schools selected will be in most part a convenience sampling and the researcher will select schools where a contact person with some knowledge or insight into brain profiling has been identified. No other specific criteria will apply.
- In the majority of schools 20 staff members will be profiled, after which 4 - 7 will become the participants in the research. As mentioned previously they will be selected according to their brain profiles in order to select a group with different brain preferences. In total 30 – 40 will act as participants.
- Similarly, 6-8 learners per school will also be the participants in the research (in total 45 - 50). Focus groups of 6–8 learners per school will be selected according to their brain profiles in order to select a group with different brain preferences.
- As part of the triangulation process, 8 of the participating educators will be selected for cross-examination interviews. The educators will be selected

according to their brain profiles in order to form a group with different brain preferences.

- A legal authority will be identified in order to test the legal implications of the findings and recommendations during an interview.

1.4.2.4 Procedure after selection of participants

- Interviews will be conducted separately with each of the selected educators. A semi-structured interview schedule will be used consisting of 10 to 12 questions regarding their attitude towards and experience of different learners and their behaviour, which transgressions they punish more, or which frustrates them more often and their attitude towards the Code of Conduct. The researcher will make notes of the observations made during these interviews. The interviews will be recorded.
- Next the groups of learners will be interviewed as focus groups. To prevent peer pressure as far as questions regarding discipline is concerned, an open-ended questionnaire will also be used to ascertain the misbehaviour they are most guilty of, their perceptions regarding discipline in general, certain types of disciplinary methods and fairness in discipline. These questions will be designed to indicate the probable link between these responses and their brain preferences. The researcher will also make notes of observations during these interviews.

1.4.2.5 Procedure after collection of data

- Interviews with educators and the focus groups will be transcribed. The data will be analysed and described by comparing the brain profiles of respectively learners and educators with their responses regarding discipline. In this phase the responses will be directly linked to their own brain profiles. A deduction will be made as to the findings.
- Interviews with the 8 selected educators will be conducted as part of the triangulation process. The interview schedule will include the findings and recommendations of the study.

- An interview will be conducted with a legal authority to test the legal implications of the findings and recommendations.

1.4.2.6 Ethical strategies

Permission for profiling and interviews with educators and learners will be obtained from principals of the identified schools during an interview. The researcher will be guided by principals regarding permission from educators and learners.

Permission to publish names of schools in the research findings will be obtained from school principals.

Permissions will be obtained from education departments for research in the selected schools.

1.5 CONCEPT CLARIFICATION

- Brain Dominance: dominant thinking preferences unique to an individual
- Brain Preferences: thinking preferences unique to an individual which are associated with the four quadrants of the brain
- Brain Profile: the brain as measured by the Neethling Brain Instrument
- Whole brain teaching: teaching designed and aimed at all four quadrant groups
- Whole brain learning: the preferred learning styles of the four different quadrant groups
- Brain based education: reform in education in the USA taking brain research into account which lead to learners actively engaging in learning and in guiding their own instruction

- Preventive discipline: disciplinary methods to deter disciplinary problems
- Remedial discipline: punishment or other corrective measures used to remediate misbehaviour

1.6 CHAPTER DIVISION

Chapter 1

The role of brain dominance in the maintenance of learner discipline

The problem statement and aims of the research. The description of the research methods and a clarification of the concepts and terms.

Chapter 2

Discipline in schools: an education law perspective

This chapter will include an analysis of the Constitution, general legislation and other education law determinants that impact on discipline in schools, e.g. the "*Guidelines for the consideration for governing bodies in adopting a code of conduct for learners"* This analysis will include definitions of discipline, the need for discipline, the causes of indiscipline, preventive methods, punitive methods and other related discussions.

Chapter 3

Brain dominance and learner behaviour management at school.

This chapter will include a brief analysis of the early and current research on the brain hemispheres, research on the four quadrant model of the brain (emphasising the findings of Herrmann and Neethling) and the impact of brain dominance on discipline style. This chapter will focus mainly on the relevant education law perspective, by a description of the implications of differences in brain dominance for schools, educators, learners and legislators.

Chapter 4

The research process

This chapter will include an analysis and description of those qualitative study methods that will be utilised to determine the influence of the brain dominance of respectively learners and educators on learners' attitudes towards and perceptions of the implementation of schools' codes of conduct and their resulting behaviour in class. The analysis will be followed by an explanation of the empirical investigation and data analysis.

Chapter 5

Findings of empirical research

A report on the findings of the research and the conclusion regarding the possible link between brain dominance and school discipline.

Chapter 6

Final recommendations

This chapter includes the recommendations regarding the implications of brain dominance for school discipline, and suggestions for further research.

1.7 CONTRIBUTION OF THE STUDY

This study should contribute to a deeper understanding of educators as to their own disciplinary styles and to the possibilities of discretion regarding learner discipline. Taking the brain dominance of learners into account when developing and implementing a code of conduct may impact favourably on the development of learner behaviour.

CHAPTER 2

Discipline in schools: an education law perspective

2.1 INTRODUCTION

In the following paragraphs discipline will be defined and the need for discipline and how to deal with indiscipline will be introduced.

2.1.1 Defining discipline

In the past, discipline in school was not a difficult term to define. It was simple: students had to respect their educators, the school and class rules. Any transgression, bad behaviour or disruptions were dealt with decisively, often severely.

A more formal definition according to The Oxford Advanced Learner's Dictionary (1995), is that discipline is mental and moral training and that it refers to a system of rules for conduct. On the other hand it is defined as punishment and to "bring under control". The first definition refers to prevention and the latter to remediation. Jones (1979:26) describes discipline as "the business of enforcing simple classroom rules that facilitate learning and minimize disruption". Discipline is therefore the rules that prevent bad behaviour and also the action of enforcing these rules in order to facilitate learning. Mabeba and Prinsloo (2000:34) describe discipline problems as "disruptive behaviour that significantly affects fundamental rights to feel safe, to be treated with respect and to learn."

2.1.2 The need for discipline

As to the need for discipline, most authors (Gottfredson, 1989 and Moles, 1989 for example) agree with Gaustad (1992) that the main goals of discipline are to ensure the safety of learners and staff and to create an environment conducive to learning.

Also, society has always demanded discipline for the child's own good and for the creation of a disciplined community. It is certainly also impossible to teach effectively without good discipline in the classroom. Even in modern times when a more psychological approach to the upbringing and education of children has gained ground, it seems that the call for discipline in schools has not diminished. The Annual Gallup Poll of the Public of America's Attitudes to the Public Schools, has identified "lack of discipline" as the most serious problem facing the nation's educational system during most of the Poll's twenty-two years of existence (Cotton, 2001). Gottfredson and others (as quoted by Gaustad, 1992) calculate that in 6 schools in Charleston students lost 7932 instructional days to in-school and out-of-school suspensions in one year. There are nearly two million suspensions per year. In that country, between 1997 and 1999, an epidemic of violence in schools has shocked the world. The following statistics reveal a sombre picture (Jankowski, 2002):

- 2 dead, 7 wounded in Pearl, Mississippi (October 1997)
- 3 dead, 5 wounded in West Paducah, Kentucky (December 1997)
- 5 dead, 11 wounded in Jonesboro, Arkansas (March 1998)
- 2 dead, 22 wounded in Springfield, Oregon (May 1998)
- 15 dead, 25 wounded in Littleton, Colorado (April 1999).

Shocking as these statistics may be, such a bleak picture is not completely alien to South Africa. In the report on The Commission on the Challenges facing Public Education (Nedlac Summit, 1999), Leboho Loate, Nedlac community convenor, raised the issue of the vulnerability of learners and educators in schools which were subjected to vandalism, drug dealing, rape and violence. In his debate in

the National Assembly on his budget vote (Anon., 2002a) Education Minister Kader Asmal criticised poor discipline of some students. He admonished those who had "damaged property, burnt buildings and looted from the poor". Asmal continued to call upon all role players to embark on a debate on discipline and accountability in education. The abysmal matric pass rate over the last decade in many South African schools has been a reflection of ill-discipline and despair in many classrooms (Pretorius, 2002). Pretorius quotes the national and provincial education departments as identifying the main reason that schools fail miserably academically, as lack of discipline of daily routine and criminal activity interrupting classes. This certainly seems to be the case, judging by the numerous success stories portraying the other side of the coin which have been shared in the popular press over the last few years. Those schools, it seems, that have taken drastic measures regarding discipline and school safety in the last few years in South Africa, have also improved their academic results. In a speech by Asmal (2001) he quotes a 52,9% improvement in matric results at a school because of the help by the community with discipline.

2.1.3 Dealing with indiscipline

The general opinions on the need for discipline in schools have certainly not changed, but the shift has been towards redefining the role of discipline in education, the application of disciplinary measures, the styles of punishment and its long-term effects and flexibility within the code of conduct. In this regard many authors (as cited by Cotton, 2001) and Rossouw (2003:426) identified components like the commitment of staff, a warm school climate, the supportive role of educators, programmes to clarify rules and close ties with the community as critical in discipline practices. Jankowski (2002) believes that the narrow perception of discipline in the past has to change and that emotional intelligence and different thinking styles of students need to be taken into account if the world wants to see changes in schools. Docking (1987:7) states that indiscipline is often the reaction of learners being bored and frustrated with a system that offers them little. Other more recent research has shown that when learners find the

curricula irrelevant or have less success, they are more prone to violence (Oosthuizen, 2005:5). It seems apparent from information from different sources analysed in the literature overview, that a better understanding of learners would assist the situation. This approach should be seriously considered. Understanding learners' backgrounds, needs, problems and certainly learning and general preferences would go a long way towards solving many problems with indiscipline.

2.2 EDUCATION LAW DETERMINANTS FOR LEARNER DISCIPLINE

To establish how the law stands on discipline in schools, it is necessary to investigate the different sources of South African Law and how some of these laws apply to education and discipline in particular.

2.2.1 The Constitution

In the paragraphs that follow some relevant provisions of the Constitution as supreme authority will be discussed. Special reference will be made to those sections in the Bill of Rights that have a direct bearing on education.

2.2.1.1 Supreme authority

The Constitution of the Republic of South Africa (Act 108 of 1996) took effect on 4 February 1997. It is considered the supreme law of the land and all other law or Acts have to be consistent with section 2 of the Constitution (SA, 1996a). The Constitution is interpreted and protected by the Constitutional Court which is more powerful than the president and cabinet and ensures that everybody's human rights are protected. This of course was not the case under the previous constitutional system. The new constitution presented the challenge of writing a new Schools Act and other legislation for education that would incorporate these principles of democracy and of human rights.

2.2.1.2 The Bill of Rights

The Bill of Rights is Chapter 2 of the Constitution (SA, 1996a). This Bill places a strong emphasis on values such as equality, human dignity and freedom. Many sections of the Bill have a direct or indirect bearing on school discipline. Some of these relevant sections are the following:

- Section 9 deals with the right to equality and guards against unfair discrimination which could very well manifest itself in discriminatory disciplinary behaviour of the educator against certain students.
- Section 10 calls for the dignity of all to be respected and protected. This right would impact directly on the behaviour of educators when reprimanding students (derogatory language, hurtful insults, sarcasm and humiliating labels for example) or the manner of punishment (undignified tasks, humiliating forms of punishment, corporal punishment for example).
- In Section 12 the right to freedom and security of the person is described. This includes no form of violence or torture or to be treated or punished in a cruel, inhuman or degrading way. The forms of punishment mentioned in the point above, would all be contrary to this right.
- Section 14 deals with the right to privacy and includes the right of everyone not to have their persons and property searched or possessions seized. Educators who search students or their lockers/suitcases for drugs, stolen property or weapons would have to weigh up this fundamental right against the rights of others. The weighing up is not against the possible limitation, but against the other person's right(s) in certain circumstances (where for example the safety of others have to be protected). Whether the security of the group weighs more than the privacy of the individual, is a thorny issue that confronts educators.
- When section 15 describes the freedom of religion, belief and opinion, it poses a challenge for the educator and his relationship towards the learner. This section can be read to imply that the learner has the right to disagree with the educator's point of view, has the freedom to voice the disagreement without being seen as misbehaving.

- This same argument can arise when studying section 16 which indicates that everyone has the right to freedom of expression which includes the "freedom to receive or impart information or ideas" (SA, 1996a). The educator may therefore be infringing on this right when a student's ideas or opinions are disregarded, ridiculed or punished. As will be explained in chapter 3, the issue of brain dominance is often at the heart of disagreements between educator and student, especially when it comes to different perceptions regarding the same situation.
- The rights of children are specifically addressed in s.28 and summarised in s.28(2) as "A child's best interests are of paramount importance in every matter concerning the child." Educators will therefore have to ask the question whether their actions regarding the child's behaviour are in the child's best interest. Issues like expulsion, corporal punishment, insults or degrading punishment measures have to be addressed.
- Section 29 on Education offers everyone the right to education. This right has a bearing on the punishment by suspension when pupils are suspended in school or out of school. This would also pose the question whether expulsions are legal, as the right to education is often permanently terminated in these cases.

Another challenge facing educators, is that there are no absolute criteria to follow when dealing with the Bill of Rights and certain rights and values can be in opposition in some situations ("privacy" vs. "security" when searching students; "equality" vs. "freedom" when using the freedom to voice opinions which may discriminate against others). Educators therefore need to understand not only the rights, but also the limitations to fundamental rights under certain circumstances.

Section 24 of the SA Constitution (SA, 1996a) states that everyone shall have the right to an environment which is not harmful to their health or well-being. Learners can therefore demand, under the supreme authority of the land, that the school environment is safe from crime, violence, abuse and any other acts which

could be described as harmful to their well-being. This speaks to, on the one hand, maintaining a disciplined culture which would eliminate this type of behaviour, and on the other hand to the type of punishment educators are allowed to mete out. De Waal, Currie and Erasmus (2000:375) refer to the burden of upholding the right to a healthy environment which it placed on individuals as much as it is placed on the state (or in this case more specifically the school). In other words, the desired balance is between the right of the learner to a safe environment and the learner's responsibility to partake in creating this safe environment with disciplined behaviour.

2.2.2 National Education Policy Act 27 of 1996

As stated in the preamble to this act (SA,1996c), is was necessary to adopt legislation to facilitate the democratic transformation of the national system of education into one which serves the needs and interests of all people of South Africa. Section 4 of this act states that every person will be "protected against unfair discrimination" and will be granted the "freedom of expression". It states further that this education system will "contribute to the full personal development of each student" and that it will recognise "the aptitudes, abilities, interests, prior knowledge and experience of students". This act goes to the heart of the link between school discipline and the unique learner as it manifests itself in brain dominance as discussed in chapter 3. The question which will have to be addressed is whether an education system which does not take into account the brain dominance and preferences of its learners can truly "contribute to the full personal development of each student".

2.2.3 The South African Schools Act 84 of 1996

The new Constitution meant rewriting the law pertaining to education to incorporate all the principles adopted in the Bill of Rights. In the paragraphs that follow, the development, purpose and contents of the SASA are briefly discussed.

The purpose of the act is to provide for a uniform system for the organisation, governance and funding of schools. Because of the history of racial inequality and segregation that formed part of the previous education system, a new act which would be in line with the new found democracy in South Africa was necessary. As stated in the preamble to the act, the new system for schools would have to redress past injustices, provide an education of progressively high quality for all learners and form the foundation for the development of all the people of South Africa (SA, 1996b). The new education system would have to combat intolerance and discrimination, contribute to the eradication of poverty and advance all cultures and languages. A fundamental element of the new act would be the upholding of the rights of all learners, parents and educators, but also their responsibility for the organisation, governance and funding of schools in partnership with the State.

The Schools Act also calls upon the governing body to adopt a code of conduct.

2.2.4 The Code of Conduct

The code of conduct, as determined in s. 8(2) of the SASA, should be aimed at "establishing a disciplined and purposeful school environment" and also one which contains provisions "of due process safeguarding the interests of the learner" in disciplinary proceedings (SA,1996b). The guidelines for this code of conduct (Department of Education Notice 776 of 1998) contains in section 4 certain principles and values regarding the rights of learners. Section 4.1 determines that those rights, as spelt out in the Bill of Rights should be protected, promoted and fulfilled by the school. Democracy, non-discrimination, dignity and freedom of expression, to name a few, are rights that should be firmly entrenched in the code of conduct of the school. In other words, schools need discipline to ensure that effective learning can take place, that the interests and rights of learners (and others) are protected and fairness is ensured.

Of specific importance to this study is the stipulation (s. 4.1) that all learners have the right to, among others, participate in decision-making about matters affecting them at the school and the right to have their views heard about these matters.

The individual learner, his/her thoughts on or attitude towards disciplinary matters, should therefore be heard and by implication be taken into account. The role of brain dominance in these attitudes and perceptions is a crucial one. In addition s. 4.2 emphasises the right of each learner not to be unfairly discriminated against. A code of conduct in which only the views of certain individuals are always considered, may be in danger of being discriminatory. The freedom of expression as stipulated in s. 5 could further strengthen the necessity for a code of conduct which is more representative of all learners at a school.

As stated in chapter 2 of the SASA (SA, 1996b), the Code of Conduct, as a standard of moral behaviour, must be a document which involves input from not only the governing body, staff and parents, but learners as well. This touches on an important issue regarding the law and discipline, namely the role of the learner.

2.2.5 Refocusing the role of the learner

The learner could easily be seen by educators only as the one who needs to obey the list of school and classroom rules, who will receive punishment for the transgression of any of these rules and who, through his negative behaviour, is responsible for discord and for the breakdown of the "disciplined and purposeful school environment". A fresh eye would reveal that the protection of the learner in the school environment is a crucial element of the Code of Conduct. Security is seen as a priority of education law by many (Oosthuizen, 1998:65; Oosthuizen, 2005:92). The role of the educator as protector of the learner (against physical and mental abuse, unfairness, disrespect, etc.) needs special attention against the backdrop of basic human rights. The educator will also have to acknowledge the role of the learner as co-creator of the rules that govern discipline in the school.

To gain perspective regarding this issue, a few points from the Guidelines for a Code of conduct (SA, 1998) are emphasised here:

- *The learner as co-creator of disciplinary rules*

  The code of Conduct does not only provide for learners to conform to the rules, but also to be involved in the formulation of school and classroom rules (5.1(b)). According to Van Dyk (as cited by Roos, 2003:511) this fosters responsibility as opposed to blind obedience.

  Learners should take part in decision-making matters and have the right to have their views heard (4.1).

- *Protection of the learner within the disciplinary rules*

  The main focus of the Code of Conduct should be positive discipline and should not be punitive and punishment oriented but facilitate constructive learning (1.4).

  The Code of Conduct should be directed towards mutual respect, tolerance and reconciliation (2.3).

  Punishment must suit the offence (3.5) .

  The victimisation of the one by the other (this warning is directed to both parties) is unacceptable (5.6).

  Learners should be protected from abuse by adults (7.2).

  The philosophy of a disciplinary system is not based on fear or assault, but on human dignity and respect (4.4.3).

As stated earlier, the Code of Conduct, as a standard of moral behaviour, must be a document which involves input from learners as well. These learners are individuals with different brain preferences (Neethling & Rutherford, 2001:79) and would therefore have different attitudes towards and perceptions of disciplinary matters. Brain dominance may therefore have to be considered as one of the determinants of Education Law as it pertains to school discipline.

The need for discipline in schools is an important aspect that will be discussed in the following section.

2.3 THE NEED FOR DISCIPLINE

The need for discipline will be discussed in the following paragraphs. The needs within society, when working in groups and the need for safety will be addressed.

2.3.1 Needs of society

As mentioned in the introduction, society demands disciplined citizens. Learners have to grasp that rules and authority are logically required by human co-operation (Wilson and Cowell, 1990:15). These authors expand on this opinion by stating that discipline is a sub-heading of the larger principle of discipline or authority. If learners do not learn to deal with this, it would be difficult to later deal with the less structured context of discipline in the world at large. This is sound logic. Laying the foundation at school for a disciplined lifestyle, for the acceptance of authority and the need for rules should be part and parcel of the task of education. Durkheim (1973:148) states it succinctly: "Discipline is not a simple device for securing superficial peace in the classroom, it is the morality of the classroom as a small society."

2.3.2 Working in groups

It is a logical assumption that any group activity needs discipline to achieve effective outcomes. Whether a group or team is building something, is playing a game or sport or is touring together, there is a need for rules and discipline. The class is by definition a group working and learning together to achieve a specific educational goal. As is true for other groups and group activities, the class needs discipline and preset rules in order to be effective. It is for instance impossible to teach when pupils are fighting, screaming, drunk or sick (Wilson & Cowell, 1990:33). As with other groups the individual belongs to, the learner has to enter

into and abide by a contract with the school regarding acceptable behaviour in this particular institution. By the same token, when the learner does not agree with these preset rules of the contract, or breaks the contract, (as would be the case with the sports team or the company which employs him), he or she would forfeit the right to be part of this institution. This then also implies the duty of the school to clearly communicate these rules, to "train" members in the rules and to test the understanding of these rules on a regular basis.

2.3.3 Safety

Although most examples of misconduct of learners do not involve violent or criminal behaviour, these incidents do occur. The rest of the class has to be protected against such acts. Not only learners, of course, but educators are often the targets during these incidents and where class control problems are increasing, so is stress amongst teachers. Kloska and Ramasut (1985:19) found that "pupils' indiscipline" ranked third out of eleven sources of stress presented to 64 teachers in one city in England. Judging by the many negative reactions by educators on learner misconduct during a study of 104 schools in South Africa (Rossouw, 2003:413-435), this seems to be the case in South Africa as well.

It appears as if serious indiscipline is a global problem and countries like Australia, Britain and the United States of America are having their fair share of problems (Mentz, Wolhuter & Steyn, 2003:392). The Elton Commission in the USA has found that one in six secondary school educators and one in ten primary school educators saw problems with discipline in their schools as serious (Department of Education and Science and the Welsh Office, 1989: 62). Fields (2000), however, states that the Gallup as well as the Langdon polls found a far larger percentage of educators, as well as the community, who indicated that learner discipline is a serious problem. Violence in South African schools is certainly great cause for concern. Several studies have borne this out (De Klerk & Rens, 2003:354). Maree (as cited by Rossouw, 2003:416) described some South African schools as resembling "war zones". Building electrified fences,

having security personnel on duty and scanning for weapons are measures that have become a necessity in hot spots in the country. This should however not be the measures sought to bring about a lasting and positive change in crime-ridden and undisciplined schools. Discipline and especially self-discipline should become a culture within all schools and educators should be equipped to foster this.

Another important element regarding the maintenance of school discipline, is the causes of indiscipline.

2.4 CAUSES OF INDISCIPLINE

The genetic factor, child-rearing practices and other family related factors, society and conditions in the class room as causes of indiscipline will be discussed in this section.

2.4.1 The genetic factor

There are some who believe that antisocial behaviour is genetically determined (Oosthuizen, Wolhuter & Du Toit, 2003:464). The behaviour, it is believed, is not necessarily directly inherited, but some children are born more susceptible to stress which might precipitate deviant behaviour. This approach needs careful analysis, because accepting a "deviant gene" would be condemning certain students to life-long misbehaviour and place an immovable limitation on the positive possibilities of the correct education and nurturing by parents, teachers and the community. As Sternberg and Grogorenko (quoted by Oosthuizen, Wolhuter & Du Toit, 2003:464) rightly state, it would be one of the worst mistakes made by educators to believe they cannot make a difference.

2.4.2 Child-rearing practices and family related factors

A study that supports the influence of child-rearing practices on indiscipline is a Cambridge longitudinal study that showed that delinquents differ from non-

delinquents in having experienced cold, harsh parents (West, 1982:129). More recent studies, according to Chaloner (2003), director of the Center for Early Intervention in the USA, has shown that 83 percent of children with impaired caregiver-child attachment have significant problems with behaviour. There is a glut of literature on self-image on the market. A few general opinions that seem to be widely accepted are that parents who criticise mistakes or the physical appearance of the child constantly, or belittle the child by comparing him/her with a 'superior' sibling or other child, are damaging the child's self-esteem. This manifests itself in many ways: in addictions, violent behaviour and general indiscipline. Children born to families in the lower socio-economic strata are generally more exposed to family stress and may therefore tend to misbehave more often (Bear, 1998). The Elton Commission also indicates that neglect by parents is often the cause of serious behavioural problems in school (Department of Education and Science and the Welsh Office, 1989:134). Respondents in a study on discipline in South African schools, reported "a total or partial lack of discipline maintained by parents at home" as one of the major reasons for misbehaviour in schools (Rossouw, 2003:426). De Wet (2003b:90) found a large percentage of respondents rated poverty, unemployment and the disintegration of family life as important causes for learner violence in her research on violence in Eastern Cape schools in South Africa.

The pivotal role of parents in influencing positive discipline, remains their example. Their respect for authority (in general and in school) will surely enhance these attitudes in their children. As stated by Wolhuter & Steyn (2003:530) parents play a crucial role in shaping the attitudes that produce good behaviour in schools.

2.4.3 Society

According to Middleton and Walsh (1995:77) the demise of modernism and the absence of alternative life-views have left a gap for many dispirited young people who often act out their hopelessness in violent ways. As mentioned before, the

incidence of misbehaviour among children from the lower socio-economic strata, is higher than among children from middle-class and upper-class families. Principals in lower socio-economic areas reported in a study on indiscipline in South African schools (Rossouw, 2003:426) that unstable homes caused by amongst others poverty and HIV/Aids, have had an "enormously destabilising effect" on school discipline.

Another cause of misbehaviour and problems with discipline could be caused by the violence, racism and other antisocial behaviour as portrayed continuously by the media (McHenry, 2000). The Elton Commission also raises concerns about the effects of television and video programmes on children's behaviour (Department of Education and Science and the Welsh Office, 1989:16).

Then there are those that see the general degeneration of society as a major factor. The combination of learners' poor discipline and violence on the one hand and the unmotivatedness and criminal behaviour of some educators on the other hand, is a sign of the disintegration of values and of a "sick society" (De Wet, 2003a).

2.4.4 Conditions in the classroom

Blaming indiscipline in the classroom purely on conditions outside the classroom, would be unrealistic. There are numerous causes of indiscipline in the classroom which range from vague classroom rules to certain behaviours by educators. In the paragraphs that follow, the most important causes that were identified in the literature are discussed.

2.4.4.1 Learning difficulties

In most classes, the culture is geared to the academically strong and those with learning difficulties often vent their frustration by misconduct. Assessment procedures continuously confront weaker learners with their own failure and a sense of not belonging. Researchers have found that a sense of belonging is

connected with the learner's expectations of success and interest in schools work (Oosthuizen (ed.), 2005). The challenge presented to the educator would therefore be to create opportunities for success for all learners and to use positive encouragement instead of criticism. Roberts (2003), director of Peak Learning Systems is of the opinion that most teachers evaluate student learning prematurely, which results in fear and poor performance.

2.4.4.2 Adjustment to school

Some children experience high stress levels when first leaving their mothers to go to school and tend to "act out". The highly active child will naturally have an adjustment to make coming into an environment where he has to sit still for several hours. Many of these children are constantly fidgeting, raising their hand, getting up, touching other students and knocking over things (Gibson, 2002). This is not a one-off adjustment. Entering high school for the first time can be a very stressful experience for many. Students have to cope with different educators, different styles of teaching and different expectations. A solution could be if longer attention to orienting students to classroom procedures, was part of school orientation. Educators are mostly uninformed regarding the reasons for misconduct under these circumstances and special training and counselling would go a long way in addressing this problem.

2.4.4.3 Vague class and school rules

Rules should be preset, clear, repeated often and enforced in a consistent and unambiguous way (Gottfredson, 1989:87; Wolhuter & Steyn, 2003:528). It is often suggested that rules be displayed in classrooms and around the school to remind everyone what they are (Munn & Mellor, 2000; Wolhuter & Steyn, 2003:532).

2.4.4.4 Ignoring the interests and needs of individuals

The Elton Report points out the link between the content and method of delivery of the school curriculum and the motivation and behaviour of pupils (as cited by Wolhuter & Steyn, 2003:529). This could be the "missing link" towards restoring

discipline in the classroom. The educator should know his learners as individuals, their interests and personalities (Mentz, Wolhuter & Steyn, 2003:399). If the needs and interests of individuals are met as far as differentiated study programmes, assessment systems, subject choices and teaching styles are concerned, disruptive behaviour could become a rare occurrence. On the other hand it will persist while students constantly feel frustrated by classroom practices that ignore their individuality. This insight could bring the breakthrough that more and stricter laws and sanctions can not accomplish.

2.4.4.5 Large numbers, absent teachers and Outcomes-based education

Research on the causes of learner misconduct in South African schools (Rossouw, 2003:425) cited these issues as some of the causes. Educators have difficulty controlling large groups of pupils, they are absent from class for numerous reasons and some pupils misuse the less formal atmosphere during group sessions which is an element of the OBE system.

2.4.4.6 Age and sex

The correlation between age and problems with discipline has been noted by numerous researchers (Mentz, Wolhuter & Steyn, 2003:398). Older pupils are generally more guilty of misconduct than those in lower grades. Several researchers (e.g. Brophy 1986:185) have noted that with older students the best results are obtained through continuously reminding them about the rules. They generally regard punishment for misbehaviour as fair, provided that the punishment fits the "crime". Smaller children tend to regard all punishment as unfair.

The gender issue also needs attention when trying to find solutions for indiscipline. Most cultures will accept certain behaviour from boys outside the classroom ("boys will be boys"), but the same behaviour in the classroom will be unacceptable. This could put boys at a disadvantage when acceptable behaviour outside the classroom is not tolerated under the stricter code of conduct in the

classroom (for example boisterous behaviour). In addition, according to Michael Gurian in his book *Boys and Girls Learn Differently* (Anon., 2003c) more boys are diagnosed with reading disabilities, with learning and behavioural disorders ADD and ADHD and are referred to special education more often. Newberger (Anon., 2003c), is of the opinion that boys' rambunctiousness or their "turning off" when bored, is often seen as ADD or a learning disability when often it is purely because they are male. Educators (often females) will miss the reasons behind such behaviour and punish boys for misbehaving more often.

2.4.4.7 The "ideal learner"

A fair amount of research suggests that teachers possess a picture of the ideal learner and would react more favourably towards learners who conform to this image. Docking (1987) cites researchers who concluded that educators get on best with learners who are helpful, neat, happy, physically attractive, socially mature and unlikely to be daydreaming. Some educators or schools also divide learners into A streamers (whose good behaviour is reinforced consistently) at the one end of the spectrum or D streamers at the other end who, because of their low academic ability, build deepening attitudes of hostility because of feelings of inferiority. Traditionally educators tend to favour students who are amongst others left-brain dominant, right handed, have strong linguistic and logical-mathematical intelligences, are quiet and academically on grade level (not too far ahead or behind) (Bluestein, 2001). Some educators may also identify strongly with those students who share their interests (Docking, 1987: 62) but reject those who don't. Those learners who are "most like me" could very well receive the best teaching, kindest remarks and most attention. Those students who are therefore seen by a particular educator as guilty of the most misconduct, could therefore purely be those that do not fit into the educator's picture of the ideal student.

2.4.4.8 Labelling

The theory of labelling and its effects was developed by Howard Becker (1963). He was of the opinion that labels become self-fulfilling prophecy, because the labelled person takes on the characteristics attributed to him. A child labelled as a "problem child" or constantly being called stupid, thick or slow in class, could therefore behave according to these expectations. Learners with low self-esteem will embrace these negative labels and accept them as completely true and will accept blame for bad outcomes (Granquist, 1994). Labels are not always as overt as these examples either. Docking (1987:68) quotes studies by Eggleton who found that some teachers will label covertly by the way they evaluate learners' comments, by the kind of learning opportunities they are given, by ignoring them or generally denying them status. The negative effect of labelling is now widely accepted. It is therefore very troubling that labelling is still very much alive and well in many classrooms. Expressions like "you are very disobedient", "why do I always have to talk to you", "you never listen", "when will you ever stop daydreaming, talking, being lazy" are as commonplace as chalk and blackboards in many classrooms.

2.4.4.9 Lack of fairness

In the classroom where an educator does not consistently enforce rules, learners may rebel against this unfairness and often lose respect for the educator. There should also be clear distinction between categories of offences, where minor infractions are treated with more flexibility and non-negotiable consequences are set for serious offences (Gaustad, 1992). The behaviour of the educator also plays an important part in controlling groups of learners and they should be role models for their students (Mentz, Wolhuter & Steyn, 2003:399). When educators are themselves the perpetrators of crime, are ill-disciplined and not committed (De Klerk & Rens, 2003:367), expecting their students to behave in appropriate ways, would be seen by most learners as grossly unfair.

A child entering a classroom with low self-esteem must certainly be at a disadvantage. Educators who are not sensitive to the differences in the psychological make-up of their students, can do great damage with remarks, treatment and general behaviour which could be experienced far more severely by these "damaged" individuals. This once again brings under the spotlight the importance of educators knowing their learners in order to treat each individual fairly .

2.4.4.10 Communication

- *Verbal communication*

Much of the resentment of learners towards educators and their subsequent indiscipline, stem from how educators use the spoken word. The educator is conscious of his superior knowledge in the class room, and may sometimes try to display this superiority by using bombastic language and words and expressions and questions that are difficult to understand. They often use this to establish their dominant position and as an example of their power over the learners (Docking, 1987:84). Sarcasm is another "power tool" used by many educators. Even when they are only trying to give direction, it may be perceived by the learner as rejection because of remarks like 'stop daydreaming', 'stop wasting time' instead of just directing learners to start with the work they have been given. On the other hand research has shown that social rewards such as smiling, praising and complimenting are very effective in increasing good behaviour. Many schools have formal praise and rewards systems in place which try to shift the emphasis from punishing bad behaviour to recognising good behaviour (Munn & Mellor, 2000).

- *Non-verbal communication*

Much has been written in recent years about body language and some specialists in this field have quite a following world-wide. The entertainment value of reading others' body language aside, it is important for educators to be aware of the significance of their body language and non-verbal cues in the classroom. Posture, gestures, eye-contact or not, all have their effect on how the learner

perceives the educator's mood, his regard for the class or individual or how helpful and approachable he is. Neill (1986) has demonstrated how certain non-verbal behaviours of educators can convey boredom, frustration, can be perceived as threatening or unhelpful to learners.

2.5 TYPES OF INDISCIPLINE

Various studies on misbehaviour divide indiscipline in schools into two major categories, viz. serious and relatively minor. Others report on three or four categories. Some of these categories will be discussed here.

2.5.1 Serious misbehaviour

According to Wenglinsky (1999) serious misbehaviour is rare in the USA according to a study from the National Center for Education Statistics. These include serious crimes like rape, robbery, fights with weapons and less serious but more common crimes like vandalism, theft and weaponless fights. Although both serious and less serious problems are increasing, violent victimisation increased by only about 1% from 1989 to 1995 while non-serious offences rose by 17% from 1991 to 1997 (Wenglinsky, 1999).

Other studies have also included violence, drug use and dealing as serious misbehaviour, but also considered truancy, intimidation, cheating and insubordination as serious and behaviour which often leads to suspensions (Harvard Education Letter as cited by Cotton, 2001). Violence, for example, in the form of physical attacks, do take place, but researchers seem to agree that this behaviour is quite rare. The Elton Report (Department of Education and Science and the Welsh Office, 1989:60) quotes the Inner London Educational Authority figures for the 1987-1988 school year which show that 187 educators reported injury due to attacks on them by learners. Although a serious offence, this number constitutes less than 1% of all educators. The fact that educators in the UK are currently receiving a danger allowance because of regular attacks on them, according to Dereck Jackson, educational psychologist (Rademeyer,

2004), may be an indication of escalating violence. Fields (2000) states that only 2% of the respondents (educators) of the Langdon-poll in the United States of America indicated that physical attacks on them, their colleagues or learners have taken place at their schools. Although the shooting incidents in schools in the United States of America have been publicised widely, criminal behaviour seems less rife than generally perceived in schools in that country. Wolhuter and Steyn (2003:525) report that in a survey of public schools in the United States of America during the 1996-1997 school year, 43% of the schools reported that they had experienced no incident of crime during this period, 37% reported one to five incidents and 20% that they had had six or more incidents of criminal behaviour.

Rossouw (2003:424) cites constant absenteeism, vandalism, theft, smoking dagga, bullying, examination dishonesty, assault, exposure to pornography, gambling, verbal assault on educators and blatant insolence as examples of serious misconduct that many educators in South African schools have to contend with.

The H. Hardcastle School Volunteer Guide (2004) also divides negative behaviour into two categories, viz minor and major violations. According to this guide, major violations include such behaviours as teacher defiance, fighting, chronic disruptive behaviour, vandalism, bullying, theft, racial or sexual comments, alcohol or drug use, smoking and leaving the school premises without permission.

It seems clear that forms of serious misconduct do exist in schools, but that most misbehaviour could be termed less serious.

2.5.2 Less serious misbehaviour

Fields for example (2000) asked 30 educators in Queensland to analyse and rank problems with learner behaviour in rank-order of importance and seriousness. The need for continual and persistent supervision was placed first,

then the refusal to listen to directives and to carry out assignments, followed by fiddling with items, the fact they had to be prodded to commence assignments, talking out of turn, whispering, laughing and giggling, attention that easily gets distracted and their need for attention.

Wenglinsky (1999) categorises absenteeism, tardiness, cheating on tests and homework, incivility and a host of other petty offences as less serious transgressions. Disobedience, tardiness, noisiness, homework not done and refusal to keep quiet were classified as less serious by educators in South African schools (Rossouw, 2003:424). The H. Hardcastle School Volunteer Guide (2004) describes minor violations as forgetting homework, unexcused absences, not prepared, spitting, inappropriate clothing, littering, writing on desks, name-calling and running in hallways.

The Burke Report of 1994 (Fields, 2000) indicated amongst others verbal disruption, physical distractions and unwelcome teasing as forms of misbehaviour in the northern suburbs of Brisbane. In the United Kingdom (Department of Education and Science and the Welsh Office, 1989:61) educators cited learners talking out of turn, hindering others, making unnecessary noise and calculated idleness as the most commonly reported forms of misbehaviour. One in four of the respondents reported that they have to deal with a lack of concern for others, unruliness while waiting and running in corridors on a daily basis.

Other forms of misbehaviour that may be described as less serious (Anon., 2002b) include sulking, being moody, talking incessantly, whining, daydreaming and being a tattletale.

2.5.3 Other categories of misbehaviour

In her research, Hopkins (2001) reported four categories of misbehaviour, viz. opposition to authority, disrespect, disturbance to the class and peers and

altercation. A report on classroom observations on discipline practices (Anon., 2004) also include four categories described as noise, out of place, physical contact and off task. The "noise" category would include any verbalisation or sound created by a child that seems designed to disrupt or avoid lessons. These may be vocal or non-vocal sounds. The "Out of place" category includes any movement beyond the defined boundaries and is not an absolute behaviour but defined by the expectations at the time of the event. "Physical contact" or destruction includes any contact with another person or person's property which is unacceptable. Lastly the category "Off task" includes any movement off a prescribed activity which does not fall into one of the three previously defined categories and would include behaviours like looking around, staring into space and doodling.

From the literature available on the subject, it certainly appears that educators are more often worn down by the less serious, but constant and annoying examples of misbehaviour.

2.6 PREVENTIVE DISCIPLINE

Kounin (1970) published results of studies from kindergarten to university levels which focused on findings from an observational study of 80 elementary classrooms. A major finding was that effective and ineffective classroom managers did not differ greatly in their methods for dealing with disruption, but that effective managers were those that were skilled at preventing disruptions occurring in the first place. Cotton (2001) cites numerous research findings conducted during the past twenty years which have underscored Kounin's findings. The old adage that prevention is better than cure, seems to hold true for discipline in the classroom as well. Methods to deter disciplinary problems fall into different categories and those which have been identified in the literature are discussed below.

2.6.1 Contracts

Written policies and codes of conduct, as well as contingency contracting are discussed here.

2.6.1.1 Written policies and codes of conduct

These documents are critical for all schools and should be developed with input from everyone who will be affected by them. Educators, other staff members, students, parents and community representatives can all assist to formulate such a policy (Roos, 2003:513). Where students can participate in developing these policies, a sense of ownership is created as well as a feeling of belonging which in itself promotes good discipline. These rules have to be clear and unambiguous and should be communicated to staff, students and parents regularly by means of newsletters, assemblies and handbooks (Gaustad, 1992).

In terms of section 8 of the South African Schools Act (SA, 1996b) such a contract (the code of conduct) has to be adopted by the governing body of a school after consultation with learners, educators and parents. This code of conduct that adheres to the necessary legal stipulations has to be seen as a valid legal document and should therefore be signed and adhered to by learners. Visser (1999:147) defines a code of conduct as a document providing legal basis for the identification and elimination of those forms of conduct that threaten the learning process. In a survey by Mabeba and Prinsloo (2000:34) it was confirmed that, as a preventive disciplinary measure, the code of conduct would be far more acceptable if learners and parents play a role in the process as well. Their research in 24 South African schools showed shared decision-making to be far more acceptable than the one-sided approach of educators as the only rule-makers. The lack of discipline in many schools may have much to do with this lack of involvement of students in the creation of rules. As Roos (2003:486) rightly states, the school rules will in practice not be redrafted each year, but learners should be given the opportunity to reconsider the rules and submit proposals for amendments.

2.6.1.2 Contingency contracting

These contracts are drawn up and accepted by both parties (school and student) and specify the punishment or consequences students will face if they disobey any of the school rules. While the code of conduct serves as a preventive measure, the contingency contracting focuses on the possible punishment for transgressions. Several researchers have found such contracts to have a positive effect on behaviour (Cotton 2001; Oosthuizen, Wolhuter & Du Toit, 2003:470). Wilson and Cowell (1990:43) warn against the lack of clarity of such contracts. Another prerequisite for the success is the sincere acceptance of these contracts by the parties concerned. It is human nature to "buy into" a situation, contract or change if you had a say in the creation thereof in the first place. Signing these contracts (as is the procedure in many South African schools) should enhance the commitment of learners to obey the rules and to submit themselves to the pre-set forms of punishment.

2.6.2 The competent teacher

The quality of teaching, knowledge of the subject matter and lively and effective presentation will most certainly have a positive effect on discipline in the classroom.

The Elton Commission (Department of Education and Science and the Welsh Office, 1989:67-72) concurred and so do numerous researchers (as cited by Cotton, 2001). But knowing the subject is only part of the educator's required competence. Knowing the learners as individuals, their personalities and interests are crucial elements of the management skills of the competent educator (Wolhuter & Steyn, 2003:527). Duke (1989:47) calls upon schools to balance the emphasis on formal procedure with the concern for students as individuals: "This concern manifests itself in a variety of ways, including efforts to involve students in school decision-making, school goals that recognize multiple forms of student achievement, and de-emphasis on homogeneous grouping."

A strong link between brain preferences or dominance and learning and teaching styles seem to be widely accepted (Herrmann, 2002; Neethling & Rutherford, 2001:79; Parrish, 2003) which would imply that the competent educator is also one who understands brain dominance and applies this knowledge in the classroom.

2.6.3 Disciplined school culture

Committed staff would be a critical element in creating a disciplined school culture. Committed staff could be described as educators who consistently strive to establish and maintain the appropriate behaviour of students because they understand that it is an essential preconditions of learning. Numerous researchers (as cited by Cotton, 2001) have stated that well-disciplined schools tend to be those in which there is a school wide emphasis on the importance of learning and an intolerance for behaviour which inhibits learning. These researchers have also concluded that well-disciplined schools regularly communicate high expectations for appropriate behaviour to their students. They also conclude that students should, however, not only know exactly what is expected of them, but these expectations should be communicated in a warm and encouraging way (Cotton, 2001).

Recommendations by the Elton Commission (Department of Education and Science and the Welsh Office, 1989:120, 122) include that lessons should allow time for movement between lessons to guard against "late lessons" which are associated with lower standards of behaviour and bottlenecks in corridors or stairs where pushing and shoving can take place which may in some cases escalate to more serious misbehaviour, should be avoided.

In a study undertaken on learner discipline in South African public schools (Rossouw, 2003:428), respondents suggested that the daily school programme or activities should be effectively structured and a strict class routine should be adhered to, especially in the lower primary classes.

2.6.4 The role of the principal

Gottfredson (1989) concluded that stable and supportive administrative leadership was the most important factor determining whether a discipline programme was effective. The principals of well-disciplined students (Cotton, 2001) are usually highly visible and involve themselves in an informal way in the everyday activities of the school. They would delegate responsibility of handling routine classroom discipline problems to educators and handle only serious infractions. They are liked and respected, they greet staff and students and they communicate caring for students as well as a willingness to impose punishment if necessary (NAESP, 1983). The Elton Commission also states the headmaster's management style as a crucial factor in encouraging a sense of collective responsibility among staff, and the sense of commitment to the school among learners and their parents (Department of Education and Science and the Welsh Office, 1989:13-14, 119).

Asmal (Anon., 2002c), the then Minister of Education, delivered a speech at a South African Principals Association meeting in which he emphasised the overwhelming evidence which exists that effective school leadership is the most common denominator in effective schools. He also called on principals who had probably been trained in a more authoritarian management style, to embrace the values of the Constitution. According to Asmal, South Africa is looking for true leadership in schools, viz a special blend of effective management and inspirational vision. This vision, he said, had to be shared with staff, parents and learners in order to become the foundation on which a successful educational enterprise can be built.

2.6.5 Classroom management

As mentioned before, Kounin's research (1970) and subsequent research have found that effective classroom managers were those that were more skilled at *preventing* disruptions from occurring. These researchers identified certain behaviours which reduced the likelihood of classroom disruption. They include

the educator communicating to the class that he/she is aware of what is going on in the class at all time, attending to different events simultaneously, without being totally diverted by another activity, smooth and brisk paced lessons, keeping all students alerted to the task at hand and stimulating seatwork activities. These behaviours also include sharing the responsibility for classroom management with the students, providing opportunities to experience academic and social success to marginal students, using humour to hold student interest and to reduce classroom tensions and removing distracting materials that encourage inattention or disruption (Mentz, Wolhuter & Steyn, 2003:399).

2.6.6 Organisational development

Several research projects have been conducted in which instructional and discipline programmes were restructured which resulted in improved behaviour (Gottfredson, 1989). These projects included the establishment of school teams to carry out improvement projects, input from all role-players (including students) to review discipline policy, school pride campaigns and counselling services. A "buddy system" where learners are paired off to take responsibility for each other or where senior learners take responsibility for younger learners with behavioural problems, have also proven to be a successful programme (Rossouw, 2003:428).

2.6.7 Increasing parent involvement

It has been found (Wolhuter & Steyn, 2003:530; Gottfredson, 1989) that increasing parent involvement is a critical element in improving discipline in troubled schools. This has been proven in more than 80 schools on the Cape Flats in South Africa. These schools which were previously classified as high-risk schools, saw dramatic changes as a result of learner and parental participation in school activities (Oosthuizen, 2005:7). The "us" and "them" culture in certain communities between parents and school can only have a negative effect on discipline. Where parents and educators form a united front to combat indiscipline and encourage effective learning, a win-win situation is created. The

Elton Commission also cite several studies which indicate a positive correlation between parental involvement in school activities and the disciplined behaviour of their children at school (Department of Education and Science and the Welsh Office, 1989:124-127).

2.6.8 Security measures

Oosthuizen, Wolhuter and Du Toit (2003:466) cite an empirical study by De Wet that revealed 73,35% of the learner sample in the study reported that they did not feel safe at school entrances, 69,44% in school cloakrooms and 79,86% on the school premises. These authors quote a survey on violence in schools in the United States of America and call for some of the preventive measures in place there (for example guards, metal detectors, restricted access) to be applied in South African schools. Section 24 of the SA constitution (SA, 1996a) states categorically that a learner has the right to an environment that is not harmful to his well being. In order to assure a safe environment for learners which would at the same time curb learner misconduct, a positive, preventative approach is suggested by Oosthuizen (2005:13). This approach would include measures like a buddy system, principals' personal contact with learners, a sense of pride in the school, a focus on the future, an advertised code of conduct which is revised yearly and the involvement of the school community.

2.6.9 Aesthetic environment

The Elton Commission (Department of Education and Science and the Welsh Office, 1989:13) found evidence that learners who were provided with a pleasant environment, respected it and where they contributed to it, treated it as their own. This had a positive effect on behaviour. Well decorated and clean classrooms and corridors and the absence of litter and graffiti are some of the suggestions to create such an environment.

2.7 REMEDIAL DISCIPLINE

Even at the best schools, preventive discipline will sometimes fail. Learners who break classroom and school rules have to be dealt with in some way. How this is done, would largely depend on the severity of the transgression. The following measures are well documented in the literature on school discipline.

2.7.1 Punishment

A general view on punishment and types of punishment will be discussed in this section.

2.7.1.1 A general view

Mabeba and Prinsloo (2000) found in their research that learners, educators and parents all supported the principle of punishment as corrective measure against misbehaviour. Punishment can be an effective method to curb and remediate misbehaviour (Cotton & Savard, 1982). According to Docking (1987:122) the punishment should focus on inherent reasonableness of the rule and not on the power of the punisher. He further states that the punishment should be enforced in such a manner that it is clear that it is the behaviour that is unacceptable, not the person. If this general rule is not adhered to, the student experiences punishment as rejection. Although punishment should not be too light, it should be delivered with support. Punishment which is excessive and delivered without support can produce negative attitudes. Public punishment and corporal punishment are both harsh and usually have more negative than positive results (Doyle, 1989).

2.7.1.2 Types of punishment

- *Deprivation*

Punishment could include depriving students of privileges, mobility or the company of friends. This is a style of punishment widely used by parents and can have positive results in the school environment if the severity and length of such punishment match the transgression.

- *In-school suspensions*

Some research has shown that in-school suspension programmes can improve discipline. However, these programmes should include guidance, support and the teaching of new behavioural skills (Cotton, 2001). Other research findings have stated success which range from "negligible" to "effective" with the most effective (according to learners) those suspensions linked to counselling (Blomberg, 2004).

- *Out-of-school suspensions*

These suspensions are the most invasive and severe disciplinary measures explicitly authorised in South Africa (SA, 1996b). The governing body may suspend a learner for a maximum of one week or can recommend that a learner be expelled. These measures are only available if a learner is found guilty of serious misconduct and after a fair hearing (Roos, 2003:494). Blomberg (2004) cites research by Costenbader and Markson (1997) who examined the responses of 252 students who had been suspended during their school career. Sixty nine percent of those surveyed felt that suspension was of little use and more than half reported a feeling of anger instead of remorse.

- *Detention*

This form of punishment is a way of causing the learner discomfort by taking away his/her free time (Oosthuizen, Wolhuter & Du Toit, 2003:473). These authors cite different forms of detention as lunch-break detention, detention while parents "baby-sit" their children, the removal of privileges like sport, matric farewell or permission to wear "civilian clothes". Sometimes learners are expected to perform menial duties during detention. As time is precious to most people, this may very well be a form of punishment that could have the desired result.

- *Corporal punishment*

Many studies have been done on the effectiveness of corporal punishment and it seems that the majority of researchers (Maree, 1999:56, 59; Doyle, 1989) have

found that the results of corporal punishment are unpredictable. Even if it inhibits the misbehaviour, it does not foster appropriate behaviour. It usually has a negative effect on relationships and often creates resentment and hostility and has been associated with dropping out of school and vandalism. In adolescence is has been found to be a major cause of negative behaviour.

In South Africa corporal punishment has become a heated subject. Section 10 of the Schools Act of 1996 made the administration of corporal punishment a criminal offence in South African schools. The Act states that "(1) No person may administer corporal punishment at a school to a learner. (2) Any person who contravenes subsection (1) is guilty of an offence and liable on conviction to a sentence which could be imposed for assault." In an article in Businessday (Mabuza, 2000) education researcher Salim Vally was quoted as saying that corporal punishment is a quick-fix solution of fear and pain and should be replaced by instilling self-discipline.

As reported by Msomi (2000) many educators in South Africa have found it difficult to find alternatives for this traditional punishment method. This prompted Asmal, Minister of Education, to launch a guide on alternatives to corporal punishment (Pretorius, 2002). The publication, *Alternatives to Corporal Punishment: The Learning Experience* was launched by Asmal in an attempt to change attitudes towards corporal punishment and to give guidelines on how to deal with different offences (Anon, 2000a).The guidelines suggest five levels of conduct and how to deal with each of these. These levels are:

- Level one offences which include misconduct in the classroom such as late-coming, bunking and not finishing homework. Class teachers are encouraged to deal with these transgressions themselves by using verbal warnings, community service, demerits, extra work and detention.
- Level two offences include breaking school rules, e.g. smoking, swearing, disrupting lessons and vandalism. The head of department in the school should handle these. The actions suggested are similar to those of level

one, but should include a talk with the learner and parents, written warnings and duties like cleaning and gardening.

- Level three include more serious offences like injuring somebody, gambling, discriminatory actions or language (racist, sexist / sexual) and cheating during examinations. The suggested actions include written warnings, possible suspension and community service.
- Level four are very serious offences and include threats to others with a dangerous weapon, sexual abuse and selling drugs. Joint action by the principal, school governing body and education department may include referral of the learner to an outside agency. Where such behaviour is seen to infringe on the rights of other learners, or the conduct endangers the safety of others, it may warrant suspension (SA, 1998:11(a)). According to Yell (1990) this type of punishment is not acceptable, as it violates a learner's right to education.
- Level five offences involve those actions that break the law and include murder, robbery and rape. A joint action by the principal, school governing body and education department can be taken to expel or transfer the learner and allow for criminal prosecution.

These guidelines were received with mixed reaction from educators (Pretorius, 2002). Educators approached by Pretorius to comment on these guidelines, agreed with the actions that can be taken, but felt that public schools raised problems with suspension and expulsion. Some were of the opinion that the benefit of corporal punishment was that it had an immediate affect. Some voiced the opinion that the alternatives provided by the minister did not provide enough practical examples.

Although corporal punishment is no longer allowed in South African schools, the *Guidelines* (SA, 1998:10) provides some disciplinary measures that may legally be imposed by educators. These include verbal warning or written reprimand, additional school work, tasks in support of an offended person, compensation

that is affordable, replacement of damaged property, suspension from certain school activities and restraint (if learners pose a threat). According to Roos (2003:496) a number of other disciplinary measures may also conform to the legal requirements, depending on the manner in which they are implemented. These include telephone calls, meetings or discussions with parents, time out for disruptive learners, limitation of classroom privileges, reassignment of seats, seizure of a prohibited items, limitation of social contact with other learners or a system of merits and demerits.

The Constitutional Court has repeatedly held that human dignity is the core value against which any actions or infringements of rights will be measured (Roos, 2003:494). With this in mind, corporal punishment in South Africa should be seen as an outdated form of correcting bad behaviour.

2.7.2 Counselling

A widely held assumption is that learners lack insight into their own negative behaviour and counselling therefore would have positive consequences. Behavioural dysfunctions (Oosthuizen, Wolhuter & Du Toit, 2003:465) necessitate professional intervention. Disciplinary problems have to be addressed and dealt with by educators and professionals in the regular and special-education classroom, which would presume the training of educators in the diagnosing and treating of these problems. Because the emphasis is on correction of behaviour, on the understanding of why the misbehaviour occurred and on future guidance, this is a far more acceptable option than many other forms of remedial discipline where the emphasis falls merely on punishing the transgressor.

2.7.3 Training programmes

Special training programmes for misbehaving students can include self-awareness training, the clarification of values, co-operation and the development of helping skills (Cotton, 2001). Peer tutoring has also been found to lower the

incidence of misbehaviour in classrooms (Greenwood, Carta & Hall, 1988; Rossouw, 2003:428).

There are also quite a number of "packaged programmes" which have been developed and which are marketed as bringing about a reduction in misconduct in schools. These include William Glasser's Reality Therapy, Teacher Effectiveness Training (TET), Transactional Analysis (TA), Lee Canter's Assertive Discipline and several others (Cotton, 2001). Research on these programmes are not plentiful or conclusive and it appears as if those schools that have effective discipline practices, do not use these packaged programmes, but have developed their own or modified commercially available programmes to suit their unique situation (Wayson et al., 1984:421).

2.8 SUMMARY

The need for discipline in schools is not reputed in the literature. What is coming under the spotlight are the causes of indiscipline and ways to deal with indiscipline. Apart from causes such as child-rearing practices and the role of society, indiscipline is seen more often as the reaction of learners being bored and frustrated with a system that offers them little. The Elton Report for example points out the link between the content and method of delivery of the school curriculum and the motivation and behaviour of pupils. More and more voices in the literature are calling for educators to know their learners as individuals, their interests and personalities in order to decrease problems with indiscipline. Some authors are of the opinion that those learners who are most like their educators could very well receive the best teaching, kindest remarks and most attention. Students who are therefore seen by a particular educator as guilty of the most misconduct, could therefore purely be those that do not fit into the educator's picture of the ideal student.

Several legal documents which have a direct or indirect bearing on school discipline, strengthen the argument for educators to see their learners not only as individuals, but individuals with certain rights which have to be protected. The Bill of Rights for example places a strong emphasis on values such as equality, human dignity and freedom. The guidelines for the code of conduct (Department of Education Notice 776 of 1998) determines in section 4.1 that those rights, as spelt out in the Bill of Rights should be protected, promoted and fulfilled by the school. The code of conduct, as determined in s. 8(2) of the SASA, should be aimed at "establishing a disciplined and purposeful school environment" and also one which contains provisions "of due process safeguarding the interests of the learner" in disciplinary proceedings (SA,1996b).

Because of the reaction to the increase in child abuse and the lack of a human-rights culture in the apartheid era, many educators in South Africa feel that the resulting overemphasis on human rights, especially children's rights, has had a negative effect on discipline in schools (Rossouw, 2003:413). Many are convinced they have lost control, their authority has been diminished and learners are generally less respectful. As more and more educators make this perception their reality, the situation seems to gain a firmer foundation until it could be solidly cemented as "the situation" in South African education today.

It is also clear from the literature that, although serious misconduct does exist in some schools, it is the less serious offences that are more prevalent in classrooms today. In the quest to break the back of a new problem thinking trend regarding this type of indiscipline, a new and creative mode of solution thinking will have to be found. While studying the literature, the researcher has come to the conclusion that the solution to indiscipline in the classroom could be found in the understanding of the learner as an individual, in understanding the differences between educator and learner and how these differences impact on teaching and learning styles, lesson content, environment and also the understanding of their effect on behaviour and more specifically on discipline.

How the code of conduct, as a document which should safeguard the interests of all learners, could be designed to reflect these differences, is an area which the researcher considers worth exploring.

When educators find the balance between the need for discipline to ensure that effective learning can take place on the one hand, while protecting the rights of learners on the other, the need for stricter laws, more control and fewer rights could very well fall away.

CHAPTER 3
Brain dominance and learner discipline at school

3.1 INTRODUCTION

Over the last few decades major discoveries in neuroscience and cognitive psychology have brought new insights into the way humans think and learn. Scientists seem to agree on the significance of many of these findings, but not always on their applicability in general or to education. It would not be possible, within the scope of this study, to give voice to all the arguments and debates. Reference will be made to specific researchers and their findings regarding the two brain hemispheres, the four quadrant model and its impact on education.

3.2 BRAIN HEMISPHERE RESEARCH

The human brain is divided into several regions each with its own function. The physical brain is made up of three major parts: the cerebrum, the cerebellum and the brain stem (Brewer, 1996:44). The cerebrum, the largest of these parts, is divided into two hemispheres. The hemispheres are linked by a bundle of nerve fibres, the corpus callosum.

In 1861 French surgeon Paul Broca published the case of his patient Tan (named after the only sound he could make), who had a superficial lesion in the left frontal lobe and had suffered severe speech loss. Broca was the first to present anatomical proof for the localisation of a particular brain function (Enersen, 2003). By 1864 he had become completely convinced that the left hemisphere controlled speech after finding lesions on the left side of the brain during post-mortems of several patients who had suffered aphasia. The concept "cerebral dominance" began to emerge within 10 years of Broca's initial findings. During a study in 1930 of 200 patients with brain damage, the findings showed

that damage to the left hemisphere resulted in poor verbal ability and that right hemisphere damage resulted in poor non-verbal ability, tasks involving spatial ability and distance relationship (Springer & Deutch, 1989:15).

Myers and Sperry started to experiment on animals about a decade later (Sperry, 1961:1749). Their research convinced them that the two hemispheres of the brain can be trained independently. Because of the success of Sperry's animal research, Vogel and Bogen, during an operation in 1961, undertook the complete sectioning of the anterior commissure and corpus callosum of the patient W.J. in an attempt to alleviate his acute epilepsy (Bogen & Vogel, 1962). Gazzaniga, who did his graduate work in Sperry's laboratory, carried out the psychological tests on these early patients (Pietsch, 2002). The main challenge which arose was to test which activities and processes were associated with the two separated hemispheres. Gazzaniga (Gazzaniga, 1998) concluded that researchers were left without a doubt that the left brain is dominant for language and speech and that the right brain excels at visual-motor tasks. When Sperry received a Nobel Prize in 1981 for his split brain work, he summed up his belief in the complexity of the brain and the need for education to take individual differences into account as follows:

> *The more we learn, the more we recognize the unique complexity of any one individual intellect, the stronger the conclusion becomes that the individuality inherent in our brain networks makes that of fingerprints or facial features gross and simple by comparison. The need for educational tests and policy measures to identify, accommodate, and serve the differentially specialized forms of individual intellectual potential becomes increasingly evident* (Parrish, 2003).

Brain research had revealed the individuality of the brain and researchers like Sperry were starting to call on education to take note of these findings. These early breakthroughs in brain research encouraged others to probe

hemispheric differences and their impact on behaviour and the implications for education.

3.3 BRAIN QUADRANT RESEARCH

Because the understanding of the two hemispheres did not provide all the answers regarding man's thinking and thinking preferences, a new era of brain research began. During his research, Herrmann's interest (Herrmann, 2002) was sparked by the triune model introduced by American neurologist Paul MacLean. MacLean believes that our brain is in fact three brains, each brain corresponding with a different stage of evolution (Scaruffi, 2000), viz the "reptilian" brain, the "mammalian" brain and the neocortex (or cerebral layer). Herrmann's first attempts to measure brain dominance were based on EEG measurements of brain waves, but he later developed a pencil and paper instrument to gather his data. This led to the development of the Herrmann Brain Dominance Instrument. This model combines Sperry's left-right brain theory and Paul MacLean's triune model to produce his quadrant model of the brain. Herrmann (Leonard, 2002) distinguishes the four quadrants as follows:

Figure 1

THE FOUR QUADRANTS	QUADRANT LABELS
• Left Cerebral (upper left)	• Theorists
• Left Limbic (lower left)	• Organisers
• Right Limbic (lower right)	• Humanitarians
• Right Cerebral (upper right).	• Innovators

Neethling's study (Torrance, 1994) of the unique human being and brain preferences had its origin in his interest in and search for the true meaning of creative behaviour. After studying creative behaviour under Torrance, Neethling pursued this area of study, but simultaneously sought the connection between

creativity, thinking styles and brain dominance. After the split-brain research of Sperry and others, it was widely accepted that the right hemisphere deals with imagination, spatial awareness, day dreaming and dimension while the left hemisphere deals with logic, words, numbers, analysis, etc. (Neethling & Rutherford, 2001:69, 70). His research of creative behaviour convinced Neethling that creativity can be developed and that an understanding of brain preferences can assist in this development. Thus building on the work of Herrmann and Torrance, Neethling (Neethling, 2003b) determined that both the left and right brain processes could be divided into two definitive categories, dividing the brain into four quadrants. (See Addendum A 2 for the quadrant summary which sums up the processes associated with each of the four quadrants of the brain.)

According to Herrmann, Neethling and other whole brain students, most people show thinking preferences associated with one or more of the four quadrants of the brain (Mifflin, 2003). These preferences, it is claimed, consequently affect behaviour in most areas of one's life. It would therefore affect relationships, career choices, parenting style, the way people communicate, do business, learn and teach (Neethling & Rutherford, 2001:79).

The Neethling Brain Profiling Instrument is the measuring tool that will be used to measure the brain dominance of educators and learners during this research. Further information on the instrument and its validity is included in the Addendum A (4). In order to illustrate the link suggested between brain preferences and behaviour further, an example of a Neethling Brain Profile report is also included in Addendum A (3). This measuring instrument is not culturally biased and participants of all race groups are regularly profiled to ascertain their brain dominance.

3.4 BRAIN DOMINANCE AND EDUCATION

Using the general brain profile as a point of departure (see Addendum A 3) Neethling has developed several other instruments, of which the teaching and learning profiling instruments will be discussed here.

3.4.1 Teaching and learning brain profiles

A strong link between brain preferences or dominance and learning and teaching styles seem to be widely accepted (Herrmann, 2002; Neethling & Rutherford, 2001:79; Parrish, 2003). Using the four quadrant model as example, Neethling (2003a) explains the teaching and learning styles of individuals as follows:

3.4.1.1 Whole brain teaching

The L1 educator (L1 = top left quadrant) usually prefers a formal lesson and the use of a text book or other teaching material. Summaries will be used and encouraged. Logical argument and opportunity to analyse content are usually elements of the lesson. Instructions are given in a precise manner. This educator tends to do research regarding the content and will encourage this in students. The content will be factually, technically and mathematically correct. This can be an authoritative educator who likes to be in control of the situation at all times. He/she can tend to be too critical and would not allow emotions to cloud the issue. This educator will use gestures and facial expressions sparingly.

The L2 educator (L2 = bottom left quadrant) usually prefers a formal lesson and the use of a text book or other teaching material. The lesson content is usually well-planned and presented in a sequential order. Putting content into practice is very important to this educator and therefore repetition and reinforcement are strong elements of the teaching style. Lesson objectives are normally explained clearly. This is an educator who would ensure that the syllabus is completed and done so within the time allocated. Thoroughness is very important and untidy and

incomplete work not tolerated. This educator could resist new teaching methods and could tend to be inflexible regarding change within the system.

The R2 educator (R2 = bottom right quadrant) is usually sensitive to the needs of the learners and will treat them as individuals rather than a group. Group work is encouraged and movement and play normally form part of the lesson. This educator uses body language, gestures and facial expression readily to enhance the lesson. He/she tends to move amongst the learners and encouragement, touch and non-verbal communication is quite natural. Showing emotion as part of the teaching comes natural and is accepted in the learners. Music often plays a part in the learning process, as well as role play and stories.

The R1 educator (R1 = top right quadrant) usually gives an holistic view of the lesson and prefers to make the link with other subjects and how it slots into 'the real world'. This educator will encourage spontaneous participation and create opportunities to experiment. Visual aids will form an important part of the lesson. Lessons could be unstructured, deciding on, for example, different content on the spur of the moment. Opportunities to speculate, to strategise and discover are often created. A fun element is often part of the lesson. Administrative duties, deadlines and thoroughness can sometimes be lacking.

3.4.1.2 Whole brain learning

The L1 learner prefers to be taught in a formal way, using a text book or notes. This learner places strong emphasis on correct facts and exact information. Information is accepted when well researched and proven. This learner enjoys doing research and being given the opportunity to analyse and investigate information. Precise and clear instructions are important. Opportunities to argue and prove points and to play leadership roles should be created for learners with strong preferences for the processes of the L1 quadrant.

The L2 learner prefers to be taught in a formal way, using a text book or notes. This learner also prefers a chronological and well planned lesson and an unstructured approach could cause insecurity and frustration. Opportunities to repeat content and to practice skills are essential to these learners. The aims of the lesson should be clear and when following a set programme or procedure, the learning experience is enhanced. Helping teacher doing little tasks and running errands, are appreciated by these learners.

R2 learner prefers group work and room for movement. When given the opportunity to communicate experiences or share opinions, the learning experience is enhanced. This is a learner who likes to tell stories and listen to stories which can be related to lesson content. Educators should create opportunities for this learner to express emotion and share experiences and feelings. Acting as teacher sometimes and using music as part of the learning environment, enhances the learning experience.

R1 learner prefers an holistic overview of the lesson content and would often not 'buy into' the lesson if he/she does not understand the larger significance of the content. Less structured approaches and spontaneous participation are appreciated. Visual aids and fun concepts are important to hold the attention of these learners. Opportunities should be created to link information being shared with past, present and future events. Experimenting with new information and opportunities for 'doing their own thing' can greatly enhance the learning experience for these learners. Projects should be challenging and out of the ordinary.

When studying the explanations of the different teaching and learning styles, it appears as if the challenges for the educator are firstly to acknowledge the existence of a diverse and whole brain group of learners in most (if not all) classrooms and secondly the acceptance of the need for whole brain teaching. Whole brain teaching would then imply a varied approach in order to

accommodate the uniqueness of learners. A varied approach by educators would subsequently imply an insight into the different types of brain dominant learners, the willingness and ability to accommodate all the learners when designing lesson content, lesson plans, tests and projects and when designing a teaching environment (Neethling & Rutherford, 2004:80). If this is ignored, teaching becomes an unfair practice favouring only certain dominance groups, causing frustration for many learners and often resulting in inappropriate behaviour.

This could probably be demonstrated best by using a case study to show how different brain preferences can manifest itself in the classroom. This case study forms part of an activity for trainees during workshops of the Neethling Brain Instruments (Neethling, 2004b).

The educator in this case has a left dominant profile with strong preferences in the L1 (85) and the L2 (90) quadrants, a low score in the R2 quadrant (60) and an average score in the R1 quadrant (65). The learner on the other hand has strong preferences in the R1 (83) and in the R2 (88) quadrants, average preferences in the L1 quadrant (67) and low preferences in the L2 quadrant (62).

A possible scenario would be when homework is presented for which the educator has supplied strict instructions, procedures for a step by step presentation, specific answers to be underlined and two separate workbooks for specific sections of the homework. Because of strong preferences for control and authority, this educator would be a strong disciplinarian. He would display a "no nonsense" attitude, would demand learners to "tow the line" at all times and would not be sympathetic to most excuses. He would also be adamant about following the correct procedure, about following a step by step approach and would insist on all the details being in place. In this particular scenario, the learner with strong preferences in the R1 quadrant (for flexibility and an holistic approach) and low preferences in the L2 quadrant (for detail, procedure and a step by step approach), would most probably leave out a few steps expected by

the educator ("as long as the answer is correct"), would question the necessity for using two books if one could work just as well and underlining a sentence in stead of a particular word would not be seen as a major mistake. Because of these "mistakes", this particular learner would be experienced by the educator as extremely lax, as not trying, as a day dreamer and one who should be constantly watched. The educator would probably see this effort as another example of somebody not willing to try, an undisciplined learner and someone with little potential for success. The learner on the other hand would experience this educator as extremely intolerant, as "picking on me" at all times, even as a tyrant and the whole learning experience would be tainted by feelings of inadequacy and of always being in trouble. The learner, because of strong preferences in the R2 quadrant, would probably make an emotional plea for leniency in this case and insist that these rules are unfair and probably unnecessary. This educator with low R2 preferences would be uncomfortable with emotional "outbursts", could in the long run revert to sarcasm and belittlement, severe punishments and even abuse because of the inability to understand and tolerate somebody so different from his idea of the ideal student. This scenario would replay itself in different guises in a classroom where this educator and learner have to interact. The learner could become completely disillusioned with the educator and the system which do not satisfy any of his expectations (no fun, no flexibility, no spontaneous participation, no encouragement to use own initiative, no sense of caring or opportunities to communicate and interact) and could adopt an attitude of not caring, of "why try if nothing is ever good enough". He may start "acting out" and causing disruptions in the classroom. Because of his strong R2 preferences, this learner would also crave personal attention, a caring attitude and the opportunity to share some personal experiences. This educator would probably never satisfy these expectations, would therefore instil a feeling of rejection, even inferiority in the learner which would encourage him to find other (inappropriate) ways to express himself.

If educators and learners alike should understand the concept of whole brain education, a greater tolerance would be developed. Educators who could adapt their teaching style, their attitude and their reaction to learner behaviour to accommodate all learners, irrespective of their brain dominance, could find inappropriate behaviour diminishing in their classrooms. Learners who have been educated on the meaning of whole brain education, would become more tolerant of other learners and of educators, because of the important insight this knowledge brings, viz. others may be different from me, but that does not necessarily make them wrong. This understanding could bring about the acceptance of differences and the uniqueness of learners in a system which has mostly stood for conformity.

3.4.2 The unique learner

As most scientists began to agree on localized areas of the brain which carry out specific functions, there has also been confirmation that everyone is an individual and that "everyone's brain is a bit different" (Rossman, 2002). Gazzaniga, one of the pioneers of the split-brain theory, put it quite simply that "all brains are not organized the same way" (Gabriel, 2000). Research on paralysed stroke victims (Rossman, 2002) showed how in time the patient could programme a computer, move a cursor and generate musical tones by activating motor neurons through thinking about movement. These researchers have discovered the flexibility of the human mind, and that each person solves problems in a unique way, suggesting that these are discoveries that could help teachers see the world as a unique learner does. The uniqueness of each learner's brain is generally based on heredity and experience (Anon., 2003a). Gardner (1999:33,34) urged educators to know their learners as individuals, to know their minds, needs, gifts and talents and to move towards individually configured education. What Sperry emphasised in his speech in 1981 (as quoted above under 3.2), has been reiterated in many forms and by many researchers and educators, since learners are individuals with unique brains, learning styles and preferences. Education systems should take cognisance of this. Towards the end of the last century,

educators in the United States of America started to heed the call for change and an education system that would take individuality into account, as well as brain research.

3.4.3 Brain based education

During the 1990's government and numerous other agencies in the USA raised public awareness about advances in brain research. This lead to the now well-known "brain-based education" which lead the way to reforms in education in that country.

The principles of brain-based education are based on neuroscientific research about how the human brain learns and at its core are enriched environments and novel experiences to promote learning, multi-modal learning which implies learning the same concepts through different methods, and the proposition that most efficient learning occurs when students are in an optimal attentional, motivational and emotional state (Solomon & Hendren, 2003). Brain-based educators support progressive education reforms and decry the "factory model" in which experts create knowledge, teachers disseminate it and students are graded on how much they can absorb and retain (Bruer, 1999). Brain-based education encourages students to be actively engaged in learning and in guiding their own instruction. Supporters of this approach agree that mental health of learners plays an important role in learning and in general behaviour in class (Solomon & Hendren, 2003). This is a crucial issue when examining the link between brain dominance and learning, which will be addressed in more detail under point 3.5.

3.4.4 Left and right brain in education

The so-called factory model of education as mentioned above has its origin in the focus of education for many decades on a narrow segment of the brain, located in the left hemisphere (Kerry, 2002). In education, the distinction was often between the "clever" and dominant left and the artistic right brain. It has often

been suggested that left-brain dominant people are most successful in most of the current educational systems which rely heavily on words and numbers (the 3 R's). School examinations are mostly designed to test left brain activity and encourage conformity in thought (Anon., 2003b).

Left brain thinkers find it easy to sift and sort information in an organised fashion while right brain thinkers prefer to absorb information in chunks. This is one reason why right brain dominated learners are often poor spellers as they tend to rely more on intuition and the "chunk" (in this case the word) than on actually studying the order in which the letters in a word occur.

Left brain dominated learners generally "do better" at school as they are more likely to respond to formal learning, are often content to study by themselves and have greater concentration. Right brain dominated learners on the other hand are less likely to perform academically as they are more responsive in informal settings and prefer to study with company (Anon, 2003b).

The uniqueness of each brain and personality, it is argued, should be acknowledged in education and, in stead of an educational system that caters mainly for the needs of left-brain dominant individuals, flexibility and the needs of all learners should be recognised (Kerry, 2002). The right brain, which excels in visual, spatial, perceptual and intuitive information, processes information quickly and in a nonlinear way, seeking spatial relationships and flourishes when dealing with ambiguity and paradox. These preferences, which are often of a non-verbal nature, are greatly neglected in most educational systems. Sperry remarked in 1973: "Our educational system, as well as science in general, tends to neglect the nonverbal form of intellect. What it comes down to is that modern society discriminates against the right hemisphere" (Gabriel, 2000). Being either right brain or left brain dominant is certainly not right or wrong, although this is a truth that education has apparently not grasped yet. According to Dixon (1997) the teaching profession seems to be dominated by left brain thinkers, as right-

brained people tend to shy away from the teaching profession because of negative experiences as students. Those who do pursue this career, often become disillusioned with the rigidity, paperwork and politics associated with education. A system which is mainly left brain dominant, designed by mainly left brain dominant educators, can have (and have certainly had in the past) negative consequences for a large proportion of students. One "deficit" of left-brained thinkers can be that they have difficulty seeing things from another's perspective and would find it difficult to comprehend that others could have a different way of processing the world (Dixon, 1997). The result is that left-brained, linear intelligence is rewarded more often.

At a conference at the University of Georgia in 2000, speakers urged educators to apply whole brain learning in their classrooms. Whole brain learning was described as a process when the physiology of the brain, the experiences of the learner, the learning environment and the individual learner are taken into account (Smith, 2000).

In a system which, it seems, favours left-brain dominant learners, which largely ignores the uniqueness of learners when it comes to curriculum development, teaching style and lesson content, the question which remains to be answered is: how is this discrepancy affecting discipline in the classroom?

3.5 BRAIN DOMINANCE AND SCHOOL DISCIPLINE

It seems apparent from information from different sources analysed in the literature overview, that behaviour is influenced by the individual's thinking preferences. That would then hold true for the behaviour of both educator and learner when the issue of discipline arises. A closer investigation of these different preferences and the consequent behaviour of educator and learner is conducted here.

3.5.1 The learner: thinking preferences and class discipline

An opinion which is expressed regularly in the context of education, is that students only truly learn material and content when it is meaningful to them (Anon., 2003a). A curriculum and lesson content designed without taking into account the different preferences of individual learners, are unlikely to be meaningful to all learners. A lack of interest can result in a lack of concentration and a resulting boredom and bad behaviour. Research has shown that when learners find the curricula irrelevant or have less success, they are more prone to violence (Oosthuizen, 2005:5). Researchers have also found that when teaching methods and techniques are in line with what learners prefer, they are more attentive and would spend more time on school work (Lewis & Lovegrove, 1987:173). Furthermore, when learner preferences are satisfied, a more productive class atmosphere is created (Wolhuter & Oosthuizen, 2003b:438-439). As mentioned before, some critics are adamant that left-brain dominant learners are most successful in current educational systems and that those that are excluded from proper stimulation in the classroom, become dull and lifeless or revert to inappropriate behaviour (Kerry, 2002). According to Torrance, this is especially true of creatively gifted learners who find school boring and purposeless. They feel frustrated, hemmed in and limited (Torrance, 1980). When many of these children enter adolescence they have become vulnerable to several negative experiences. They have learnt to manipulate others, they tend to experiment with drugs and other sensory stimulants and become rebellious against authority because over time so many of their needs have not been satisfied (Fadely & Hosler, 1983:138).

Some researchers are of the opinion that educators set students up for behaviour disorders because educational practices defy brain development and learner differences (Anon., 2003a). According to Wesson, educational consultant of neuroscience in the USA, many students have stronger social preferences and work better in more unstructured environments, but in school they are told not to talk and are set up in rows and in a static environment. Not being able to talk and

to express what they feel, many students revert to physical or even violent interactions (Anon., 2003a). Many students prefer movement, which in turn advances their memory. Restak (as cited by Rossman, 2002) points out that too much of education is passive and linked to traditional academics. He shows how learning is closely related to motor activities as seen in middle schools where it is found that many youngsters memorise better when kept on their feet, moving around. It is usually the right brain dominant learner that is constantly reprimanded for "not sitting still", who irritates the educator with fidgeting and is punished for this "bad behaviour". In a whole brain classroom opportunities for movement and physical activities would solve this so-called disciplinary problem.

Many right-brain dominant learners prefer an holistic approach. They search for the unity of everything they are taught, for an understanding of how different subjects, contents and material fit together and into the greater context of life. Most education, on the other hand, draws artificial boundaries and compartmentalises content (Rossmann, 2002). The frustration of these learners who never seem to understand the significance of material and how it relates to the world or their own life, often evolves into inappropriate behaviour. For many learners (often R1 dominant), learning is enhanced by challenge and opportunities to take risks. However, in most classrooms a system of rote learning and an environment of threat still exist which can have a negative effect on behaviour (Caine & Caine, 1997). Most education systems place a great emphasis on purely academic achievement and other (often right brain) skills are not encouraged, developed or praised, especially by more left brain educators. These learners never feel capable and never have a sense of belonging (Oosthuizen, 2005:9) which eventually may lead to irresponsible behaviour. Fadely and Hosler (1983) describe these right brain dominant children as "naturalistic". They describe them as preoccupied, impulsive and daydreamers who display behaviour which seems to go against good behavioural standards as seen by most educators. Their case studies have shown that educators label children as chaotic and hyperactive (the right brain dominant) or as compulsive

and rigid (the left brain dominant) instead of providing experiences in which both types can learn to be more complete in their general behaviour.

3.5.2 The educator: thinking preferences and class discipline

When Dixon (1997) takes an historical look at education in America (which he describes as a system in crisis), the similarities with South Africa cannot be ignored. The system, he explains was founded with the goal of creating a society of dutiful, obedient soldiers, based on the German model. The latter model had as its goal to produce meek, compliant children. This system, he continues, produced the meek, compliant adults who were so desperate for leadership that they embraced the fanaticism of Adolf Hitler. In the USA, this system has been cemented through the Christian Right movement which emphasises physical punishment, the breaking of the child's will and obedience to authority for fear that the child should not be allowed too much independent thought or control will be lost (Oosthuizen, Wolhuter & Du Toit, 2003:463). While not all American (and certainly not all South African) schools and educators are left-brained, many in the system still value above all else compliance, order and sameness. It is well documented that many great achievers through history were not well adjusted students and were seen to have serious disciplinary problems. Einstein who was described as a daydreamer and was told that his questions destroyed class discipline, was encouraged to leave the system as he would be "better off" out of school. Another achiever in later life was Thomas Edison, probably the most productive inventor, who was beaten repeatedly at school because of his insistence on asking questions and was removed from school by his mother after only three months of formal education (Anon., 2002b). In hindsight, it becomes clear that these learners who were more experimental, holistic and unstructured in their thinking (right brain dominant) did not fit the picture of the obedient and compliant learner that the educator expected .

It is therefore important to consider that the learner is not the only role-player in the classroom with specific brain preferences. The educator brings a teaching

style, preferred mode of communication and expectations to the classroom which create the atmosphere and set the scene for the teaching and learning that will take place there (as stated in 3.4.1.1). One of the greatest expectations of the educator is to have the full attention of each learner (Charles, 2004). This expectation is often not met when learners are engaging in inappropriate behaviour in class. Unfortunately the reasons for this misbehaviour are regularly not understood and therefore punished, but no long-term solution found. The reason for such misbehaviour is often because of the expectations of learners that are not met. These expectations include being engaged in worthwhile learning activities and to be motivated to learn, which would assume teaching strategies congruent with student learning styles and brain preferences (Charles, 2004).

Educators who place control above all else, will resist flexibility in the class and would not allow a fun and a relaxed environment from time to time. These educators would also tend to resist group activities and discussions for fear of unruliness or of losing control. Those educators who have strong preferences for routine, would be hard pressed to vary their presentation and lesson content to suit different students. Some educators may not see the need for self-expression and for unplanned participation by learners or for the "personal touch" by means of, for example, personal greetings and attention because of their own preferences for control, routine, reserve or authority. Glasser (as cited by Van Tassell, 1999) states that the goal in classrooms should be that the students want to learn more and feel good about what they do in the classroom. This can be achieved when students are treated with dignity and respect (Charles, 2004), which in turn implies the acceptance of differences and the creation of the whole brain classroom. To neglect this and by implication exclude certain learners from the best education for their brain dominance, can create an emotionally damaging classroom climate for some.

3.5.3 The emotional climate and brain dominance

The importance of an appropriate emotional climate for facilitating sound education is often cited in literature on education (Caine & Caine, 1997). The emotional impact of any lesson or life experience will reverberate long after the specific event that triggers it. Emotion therefore plays an important role in memory encoding and retrieval and emotionally meaningful information tends to be learned and remembered better (Solomon & Hendren, 2003). On the other hand depression, anxiety and stress can have a very negative impact on learning. In fact, CAT scans show that children process information through their emotions first, then information goes through the neocortex, or rational part of the brain. Wesson (Anon., 2003a) agrees that information that is the most emotional is what students remember best. On the other hand, fear can bring learning to a halt.

In many classrooms harshness and complete control are imposed upon learners in order to ensure discipline. Learners react differently towards this kind of environment by either not showing emotion at all and by becoming dull, lifeless and apathetic, or by anger and cruelty (Kerry, 2002). Anger grows out of frustration and aggression out of powerlessness (Smith, 1992). One way of dealing with anger in the classroom is to provide comfort and assurance and to tell the learner that everyone experiences anger (Anon., 2000b). The educators should be able to share his own experiences of anger and how he dealt with this in a positive way. The strong left brain educator who may not see any benefit in allowing learners to show or voice their emotions, are constantly giving the message that feelings are inappropriate and should be denied. Educators should understand that when children's right to have angry feelings is accepted, it does not mean accepting aggressive behaviours (Smith, 1992). Over time, the student will adapt to the rejection and pain and unconsciously lose touch with his emotions, will deny certain emotions and will also inhibit himself from experiencing heightened degrees of happiness (Kerry, 2002). The by-product of

this process is self-directed anger which results in depression or outwardly directed anger which results in cruelty, scapegoating and violence.

The more the educator denies the individuality of learners and endeavours to control the class by fear, the less learning takes place and often results in exactly the bad behaviour this is supposed to avoid. Fear and stress release the hormone cortisol in the body which is shown to be toxic to the hippocampus, a part of the brain associated with long-term memory (Solomon & Hendren, 2003). Studies also show that stress and constant fear, can circumvent the brain's normal circuits and therefore that physical and emotional well-being are closely linked to the ability to think and to learn effectively (Anon.,2000b). Behaviour is also effected by such stressful conditions, as the brain "downshifts", becomes less flexible and reverts to primitive attitudes and procedures (Caine & Caine, 1997). Because of the surge of adrenaline to the brain, the learner will go into the flight or fight mode and often behave inappropriately (Anon., 2003a). The fact that the right hemisphere is more directly associated with the expression and perception of emotions than the left, also has implications in the classroom. Right brain dominant learners would therefore show emotions more readily and react more strongly to the emotions of educators. This could be experienced as a negative trait by many educators, even punished as inappropriate behaviour. It has been shown through experiments (Restak, 2000:127) that the right hemisphere is better than the left at detecting subtle emotional nuances, such as mood-associated variations in speech and emotions shown by facial expressions. This would mean that the right brain dominant learner would be more sensitive to the educator's mood, would be more affected by this and could be seen as touchy, sensitive and as over reacting.

The traditional approach to discipline through control, often fear and threats, seem to be at the very heart of incessant misbehaviour. It shatters the security of some students (especially those who are L2 dominant), it causes emotional outbursts in some (probably the R2 dominants), it makes some learners defiant

(the R1 dominant thinkers most probably) and turns some rational L1 dominant learners into angry, even violent students. Therefore, even the highly verbal child (left brain) who would generally cope well in the traditional classroom, who has been overly disciplined, is very self-conscious and constricted in his behaviour, can start to over-control responses. This child often becomes neurotic, fearful of being hurt and constantly seeks acceptance. The result is that little effective learning occurs (Fadely & Hosler, 1983:160). The solution would be a classroom environment that promotes positive attitudes among students and teachers about their work and encouraging students to be aware of their feelings and how the emotional climate affects their learning (Caine & Caine, 1990). It seems as if conflict resolutions programmes have had noteworthy success in South African as well as schools abroad (Oosthuizen, 2005:7). Similar programmes on whole brain teaching, learning, relationships and general behaviour, could very well be the answer to stress and emotional upheaval in classrooms because of the lack of understanding of differences.

In 2000 at a conference at the University of Georgia educators were called upon to embrace whole brain teaching and learning. The essence of the discussions was voiced by Smith, public service associate of the University of Georgia, viz "not everyone learns alike" (Smith, 2000). She expanded by describing whole brain learning as taking into account the physiology of the brain, the experiences of the learner, the learning environment and the individual learner. Mengert, professor emeritus of the University of North Carolina-Greensboro, who works with schools to help create brain-compatible classrooms, maintains that this can be done through removing tension and stress, by recognising individual performance, experience and interest and recognising that learning and emotion are connected. (Smith, 2000).

The literature abound with calls for a more individualistic approach to education, but more frequently, the link between the preferences of learners and class discipline is emerging (Wolhuter & Oosthuizen, 2003b:439; Van der Walt, 2003:338; Anon.,2003a).

3.6 SUMMARY

After research on the first split-brain patients in the 1960's, Sperry urged educators to heed the need for educational tests and policy measures to identify, accommodate, and serve the differentially specialized forms of individual intellectual potential. After decades of brain research, a strong link between brain preferences or dominance and learning and teaching styles has become widely accepted. Most scientists agree that localized areas of the brain carry out specific functions and that everyone is an individual and each brain unique. The uniqueness of each brain and personality, it is argued, should be acknowledged in education.

Brain dominance researchers contend that left brain dominated learners generally "do better" at school as they are more likely to respond to formal learning while right brain dominated learners on the other hand are less likely to perform academically as they are more responsive in informal settings. It is also the right brain dominant learner who is usually reprimanded and punished for misbehaviour such as fidgeting, talking, forgetting things and untidiness. As education systems are usually designed to be structured and disciplined (left brained), many right brain dominant learners never feel they belong and start acting out as a result of frustration.

While studying the literature, the researcher came to the conclusion that if educators and learners alike should understand the differences in brain dominance and the concept of whole brain education, a greater tolerance would be developed. This would imply that educators who could adapt their teaching style, their attitude and their reaction to learner behaviour to accommodate all learners, irrespective of their brain dominance, could very well find inappropriate behaviour diminishing in their classrooms.

As mentioned in chapter 2, the Bill of Rights emphasises that "A child's best interests are of paramount importance in every matter concerning the child." After studying the literature on brain dominance, the researcher has also reached the conclusion that a system where individuality and more specifically brain uniqueness is ignored, where all learners do not have the freedom to receive or impart information, may be seen as discriminatory and not in the best interest of all children. It appears as if taking into account the brain dominance of learners and educators, may be a solution to create a positive, emotionally healthy and whole brain environment where the individual feels respected, where self-esteem will grow and as far as discipline is concerned, a win-win situation could be created.

CHAPTER 4

The research process

4.1 INTRODUCTION

At the start of this study the following problems were identified as those warranting careful research:

1. Do educators fully comprehend and apply Constitutional principles such as the best interest of the child, equality, dignity and the right to education, as well as other related legislative provisions in their style of discipline?
2. Should the differences in brain dominance of learners be taken into account in legislation pertaining to the development of the code of conduct?
3. How does brain dominance of educators influence their approach to learner discipline in the classroom?
4. What is the influence of the brain dominance of learners on their attitude towards the school's code of conduct and their resulting behaviour in class?

These problems were addressed through the qualitative research methodology. In this chapter this methodology will be discussed, as well as the research process which was followed to answer these questions. This will include the researcher as instrument, the research paradigm, strategies, methodology and analysis of the data, as well as the trustworthiness of the research.

4.2 QUANTITATIVE OR QUALITATIVE RESEARCH

Before addressing the research methodology of this study, the distinction between quantitative and qualitative research will be discussed.

4.2.1 A distinction

According to Henning (2004:3) the focus in a quantitative study will be on control of all the components in the actions and representations of the participants (the variables) and participants are usually not free to express data which cannot be captured by predetermined instruments. She continues that in a qualitative study on the other hand, the variables are not controlled and the capture of the natural development of action and representation is exactly the aim of the researcher. Mays and Pope, (as cited in Anon., 1997) explain quantitative research as a study that begins with an idea which then, through measurement, generates data and by deduction allows a conclusion to be drawn. Qualitative research, according to these authors, begins with an intention to explore a particular area, then collects data through observations and interviews and generates ideas from these data largely through inductive reasoning. Charles (1995) simply describes quantitative research as dealing with scores where as qualitative research deals with words and statements. Labuschagne (2003) makes the distinction that quantitative research is mainly concerned with the degree in which phenomena possess certain properties, states and characters and the similarities, differences and causal relations which exist within and between these. Qualitative research on the other hand is mainly concerned with the properties, the state and the character, in other words the nature of phenomena. Ratcliff (2003) adapts a comparison from Cook and Reichardt and lists a number of differences. Quoting the description of quantitative research first, some of these differences are for example positivistic vs. phenomenological, particularistic vs. holistic, attempt to control variables vs. relative lack of control, verification oriented vs. discovery oriented and confirmatory vs. explanatory. Creswell (1998 in Anon., 2003e) presents five sets of philosophical assumptions which can be used to distinguish between the two types of research, viz. ontological (the objective or subjective nature of reality), epistemological (the relationship between the researcher and the knowledge studied), methodological (the design of the research), axiological

(the role of values) and rhetorical (the style and language of reporting the findings).

There are also some voices in the literature that emphasise the similarities rather than the differences between these two types of research methodologies. Becker (2002) states that both kinds of research try to see how society works, to describe social reality and to answer specific questions about instances of social reality. The distinction, he states, lies in the fact that some researchers are interested in a very general description in the form of laws about whole classes of phenomena, while others are more interested in understanding specific cases and how general statements worked out in a particular case. Barrett and Ahmed (2000) analysed data on the research methods used by presenters at the Midwest Research to Practice Conference in education and found a strong shift from quantitative to qualitative and combined methodologies.

In this study a qualitative research design was applied and therefore a more in-depth theoretical discussion regarding this method will be conducted here.

4.3 QUALITATIVE RESEARCH

In the following paragraphs several definitions and explanations of qualitative research will be discussed.

4.3.1 Defining qualitative research

Henning (2004:5) defines qualitative research as an inquiry in which the qualities, characteristics or properties of a phenomenon are examined for better understanding and explanation. Denzin and Lincoln (2000:3) state that qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret phenomena in terms of the meaning people bring to them. It is also described as a research design that reveals a target audience's range of behaviour and the perceptions that drive it with reference to specific topics or

issues (Anon., 1997). According to Merriam (1998:5) qualitative research refers to "an umbrella concept covering several forms of inquiry that help us understand and explain the meaning of social phenomena with as little disruption of the natural setting as possible".

An important aspect of qualitative research is the role of the researcher.

4.3.2 The researcher as instrument

The definition of the role of the researcher and the researcher of this study will be addressed in the following section.

4.3.2.1 Defining the role of the researcher

In qualitative research the researcher becomes an instrument of data collection. The art of successful qualitative data collection depends on the balance between participation and neutrality of the researcher (Rossouw, 1994:179). Patton (1990:55) refers to this as an "empathic neutrality". Hoepfl (1997) refers to the researcher as the vehicle through which data will be collected and interpreted. Denzin and Lincoln (2000:5) agree and compare the qualitative researcher to a quilter who stitches, edits and puts slices of reality together.

Because the voice of the researcher forms an integral part of qualitative research, it therefore seems appropriate to inviduate the researcher of this study.

4.3.2.2 The researcher of this study

Ellis and Bochner's (in Denzin & Lincoln, 2000:740) description of a reflexive ethnography best describes the "personal experience narratives" approach of the researcher of this study. Lincoln and Guba (in Denzin & Lincoln, 2000:183) refer to reflexivity as the conscious experiencing of the self as both enquirer and participant, as teacher and learner within the research process. To clarify this research approach, a short background of the researcher seems apposite.

After teaching and lecturing for about a decade, I became interested and then wholly involved in the identification and development of creative behaviour in children as well as adults. The measurement of brain preferences and the development of a whole brain approach to creativity, has become a passion and a life's work. I have co-authored several books on the subject and am constantly in search of new insights and applications regarding this field. Books on parenting, relationships and lifestyle were the result of a keen pursuit to find solutions to problems resulting from human behaviour. I have retained a strong relationship with and affinity for education in South Africa and have over the last few years experienced a strong desire to find a solution to the problem of discipline in South African schools today. I have undertaken this study in the faith that with a better understanding of one another, this is an obtainable goal. I have also attempted it with the open-minded attitude that my personal experience in this field could enhance my insight into whether brain preferences affect attitudes towards discipline, without compromising neutrality and the openness to discover and to learn.

Although this study has several tangent points with educational psychology, what seemed to me the greater challenge was to conduct a study which would investigate whether disciplinary practices in schools entrench the rights of all children, or whether, by their very nature of 'equal treatment for all', these practices are in violation of what the law implies is in a child's best interest. Whether the codes of conduct of schools protect the rights of all children and whether learners are really co-creators of these codes, were other areas of interest which I sought to explore.

4.4 THE RESEARCH PARADIGM

The theory surrounding research paradigms and the research paradigm of this study will be examined in the following paragraphs.

4.4.1 Theoretical paradigms

Guba (1990:17) terms the researcher's epistemological, ontological and methodological premises a paradigm or interpretive framework or "basic set of beliefs that guides action". Denzin and Lincoln (2000:19) distinguish four major perspectives, viz. positivist and postpositivist, constructivist-interpretive, critical and feminist-poststructural.

The positivists and postpositivist paradigms work from within a realist and critical realist ontology and objective epistemologies and rely upon experimental, quasi-experimental, survey and rigorously defined qualitative methodologies (Denzin & Lincoln, 2000:21). The constructivist-interpretive paradigm is explained by these authors as assuming a relativist ontology (there are multiple realities), a subjectivist epistemology (knower and participant co-create understandings) and a naturalistic (in the natural world) set of methodological procedures. They continue that findings are usually presented in terms of the criteria of grounded theory or pattern theories.

In the feminist-poststructural paradigms it is assumed that the real world makes a material difference in terms of race, class and gender (Denzin & Lincoln, 2000:21). The critical paradigm includes the Marxist and emancipatory models.

4.4.2 The research paradigm of this study

Denzin and Lincoln (2000:19) maintain that all research is interpretive and is guided by a set of beliefs and feelings about the world and how it should be understood and studied. This is certainly true of this study. The paradigm of this study is in most part constructivist-interpretive. The researcher of this study combined her beliefs about the nature of human beings who differ in behaviour because of specific brain preferences (ontology), about the relationship between the researcher and the participants who are both creating insights and understanding during the process of interviewing and discussions on school

discipline (epistemology) and about gaining knowledge through procedures in the naturalistic setting of the school (methodology).

The next stage of the research process is working with a specific strategy of inquiry. The researcher moves to this next stage "paradigm and personal history in hand, focused on a concrete empirical problem to examine" (Denzin & Lincoln, 2000:21).

4.5 RESEARCH STRATEGIES

This phase of the research begins with a research design which Denzin and Lincoln (2000:22) describe as a flexible set of guidelines that connect theoretical paradigms first to strategies of inquiry and then to methods for collecting empirical material. They continue that strategies of inquiry put paradigms of interpretation into motion. These strategies include the case study, ethnography, phenomenological and ethnomethodological techniques, grounded theory, biographical, outoethnographic, historical, action and clinical methods. The researcher made an in-depth study of all these strategies in order to select the strategies which were considered to be most applicable to this study. For this reason some of the alternatives that were not selected, are also discussed here as certain tangent points can be distinguished.

4.5.1 Strategies of inquiry

Of the above-mentioned strategies, case studies, ethnography, phenomenological and ethnomethodological techniques, grounded theory, biographical and outoethnographic methods will be discussed here.

- Case studies

Yin (2002) refers to a case study as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. Henning on the other hand describes a case study as a format for design which is

characterised by the focus on a phenomenon that has identifiable boundaries. Merriam (1998:18-19) agrees with Henning and states that case studies are distinguished from other types of qualitative research in that they are intensive descriptions and analyses of a single unit or bounded system. She continues that this "bounded system" can be an individual, a program, event, group, intervention or community.

- Ethnography

According to Merriam (2002:9) ethnography is not so much defined by how data are collected but rather "by the lens through which they are interpreted". Creswell (1998 as cited in Anon., 2003e) elaborates on this view and refers to ethnography when researchers observe behaviour by immersing themselves in the daily life of the community or by conducting interviews with community leaders. They then interpret the observations to discover patterns of behaviour and the factors that underlie them. An ethnographic field collection is described (Anon., 2003d) as a unique created work brought together through the intentions and activities of the collector and may include sound recordings, drawings, photographs and correspondence.

- Phenomenological and ethnomethodological studies

A phenomenological study focuses on the essence or structure of an experience (Merriam, 2002:7) and inner experiences are compared and analysed to identify the essences of the phenomenon being studied. It is described as a qualitative method that attempts to understand participants' perspectives and views of social realities (Foster & Perkins, 2004). These authors also cite the researcher's self reflections or experiences relevant to the phenomenon as a data source. Ethnomethodology was founded by the American sociologist Harold Garfinkel in the early 1960's (Poore, 2000) and refers to the study of the ways in which people make sense of their social world. Alvesson and Sköldberg (2000:38-39) state that ethnomethodologists study the everyday knowledge, how it emerges and is shaped. The task of the ethnomethodologist, according to these authors, is to elicit actions in the everyday world which are steered by underlying expectations and implicit rules. According to Poore (2000) a favoured technique

among ethnomethodologists is to temporarily disrupt the world which people take for granted and see how they react.

- Grounded theory

Merriam (2002:7) refers to grounded theory as having as its goal the development of a theory through inductive approaches and the theory is "grounded" in the data. Myers (2004) also describes grounded theory as a research method that seeks to develop theory, but elaborates that it is grounded in data systematically gathered and analysed. He further suggests that this method differs from other methods because it implies a continuous interplay between data collection and analysis. This opinion is shared by Charmaz in Denzin and Lincoln (2000:510) when she states that strategies of grounded theory include simultaneous collection and analysis of data, a two-step data coding process, comparative methods, memo writing and theoretical sampling to refine ideas. She further concludes that although the initial research questions may be concrete and descriptive, the researcher can develop deeper analytic questions by studying her data. This interplay between the researcher and the data is also recognised by Guba and Lincoln (in Denzin & Lincoln, 2000:510) who state that constructionist grounded theory recognises the mutual creation of knowledge by the viewer and the viewed and aims towards interpretive understanding of the subjects' meanings.

- Biographical and autoethnographical methods

These methods are applied by a researcher who is a "native", an "insider" who has an intimate familiarity with the group being studied (Ellis & Bochner in Denzin & Lincoln, 2000:739). A new form of biography and autoethnography or life history is the 'testimonio' (Denzin & Lincoln, 2000:374) which is a first-person (usually political) text told by a narrator of various struggles for survival. These works are intended to produce and record social change. The author of the 'testimonio' is not a researcher, but someone who allows previously silenced persons to be heard.

4.5.2 The research strategy of this study

The basic research strategy of this study is phenomenology. The researcher attempted to understand the participants' perspectives on discipline from the perspective of the theory regarding brain preferences. A characteristic of phenomenological research and of this study, is that data sources include accounts of the phenomena as obtained from literature, the participants' oral and written descriptions of their experiences of the phenomenon and the researcher's self reflections and experiences relevant to the phenomenon (in this instance of school discipline and brain preferences). In phenomenology (as cited by Foster & Perkins, 2004), as applied in this study, the transcripts from participant interviews and self-reflections are used to identify common themes in the descriptions of experiences by participants. Furthermore the transcripts are used to identify statements that relate to the topic, to group statements into "meaning units" (here more specifically as they relate to brain preferences), to seek divergent perspectives and to construct a composite. The research report of this study follows the phenomenological research design as it presents research problems, describes methods of data collection and analysis, draws conclusions about the phenomenon (discipline and its link to brain dominance), relates the findings to the existing body of theory and research done on school discipline and brain dominance and discusses the practical implications of the findings.

The qualitative researcher has various methods for collecting empirical data. Some of these methods will be discussed in the following paragraphs.

4.6 RESEARCH METHODOLOGY

The research methodology includes the methods of collection and analysis of research data.

4.6.1 Methods of data collection

- Interviews

Interviews may be informal (conversational) interviews, semi-structured interviews or standardised (open-ended) interviews. During the informal interview, which Henning (2004:4) refers to as discursively oriented interviews, the speech or communication in itself yields information. It is therefore not only what participants say and do that is important, but also what they omit, how they say and do that become important information.

During the semi-structured interview, the researcher has an interview guide or schedule with a list of questions or general topics to explore during each interview (Hoepfl, 1997). The schedule is prepared to ensure that the same basic information is obtained from each participant, but there are no predetermined responses and the interviewer may probe and explore within the inquiry areas.

In contrast the structured interview (Fontana & Frey in Denzin & Lincoln, 2000:637) asks all participants the same series of pre-established questions with a limited set of response categories with little room for variation.

- Focus groups

Interviews can also be conducted in focus group sessions. This has been a popular method of data collection in the domain of marketing to test the perception of clients of certain products (Rossouw, 1994:117). This method has however become more widely used in education research as well. In a focus group the participants are encouraged to make contributions to the discussion beyond simply answering the questions posed by the researcher (Ratcliff, 2003). Participants are allowed to bring up related issues and the group interaction is explicitly used to generate data (Greenhalgh & Taylor, 2000). Fontana and Frey (in Denzin & Lincoln, 2000:639) see this technique as straddling the line between formal and informal interviewing and is often used when the purpose of the interview is exploratory.

- Observations

Data is collected through observation of participants in the context of a natural scene. The data would consist of detailed descriptions of participants' behaviours and human interactions (Labuschagne, 2003). Denzin (1997:19) urges researchers to be aware of class, race, gender and ethnicity and how these factors shape the process of the inquiry during observations. Patton (1990) is of the opinion that observation can lead to a deeper understanding than interviews alone as it may enable the researcher to see things that participants themselves are not aware of or are unwilling to discuss.

- Questionnaires / Interview schedules

While questionnaires for quantitative research are designed to elicit systematic, standardised and succinct responses, the questionnaire (also called an interview schedule) used for qualitative research elicits responses which are open-ended, not systematic and longer (Labuschagne, 2003). This is because questionnaires for qualitative research are designed to provide a forum for explanations, meanings and new ideas.

- Documents, records and artefacts

Documents for qualitative research may include official records, letters, newspaper accounts, diaries, reports or other published data in the literature (Hoepfl, 1997). Hansen (1995) analysed journal entries and memos written by participants in addition to interviews in his research. Hodder (in Denzin & Lincoln, 2000:703) states that many areas of experience are hidden from language and that the study of material culture is thus of importance for qualitative researchers. Henning (2004:99) is of the opinion that the collection of documents and other artefacts is often neglected in qualitative research. The task of the researcher would be to see the connection between artefacts (in a household, for example) and the research questions.

- Autoethnography

Autoethnography has been mentioned as a research strategy, but deserves mention as a method of collecting data. The autoethnography is an autobiographical genre of writing and research usually written in the first-person

and include short stories, poetry, fiction, novels, photographic essays, personal essays, journals and prose (Ellis & Bochner in Denzin & Lincoln, 2000:739).

4.6.2 Methods of data collection during this study

In qualitative research, a variety of methods and sources for data collection, referred to by some as triangulation (Henning, 2004:103), is advised. The methods used during this research to collect data were the semi-structured interview, focus group sessions, open-ended questionnaires and observation of the participants during interviews and focus group sessions. In addition the Neethling Brain Instrument (NBI^{TM}) was used in order to profile the brain preferences of the participants. The Codes of Conduct of the schools taking part in the research were also used as documents for data collection and studied by the researcher to establish whether a link existed between these documents and the behaviour of different brain dominant groups.

An important element of data collection is of course the participants from whom much of the data emanate. As in most qualitative research studies, the participants were selected through purposive sampling. In other words, they were not selected at random but because of who they are (educators and learners) and what they know (the school environment, disciplinary practices and the codes of conduct for example). They were also selected because of their brain profiles in order to select a group with a variation of brain preferences. The specific schools and the number of participants identified at each school were in most part a convenient sample. They were convenient because the researcher had identified a contact person as each of the schools who had some knowledge or insight into brain profiling.

4.6.2.1 The identification of participants

In order to include a more diverse group of participants, schools in three provinces were identified as participating schools. These schools are located in cities, large towns as well as rural areas. They range from a preparatory school

to primary and high schools. The schools that took part in the study are

A high school in Pinetown, Kwazulu Natal (larger town)

A high school in Potchefstroom, North-West Province (larger town)

A primary school in Pretoria, Gauteng (city)

A convent school, primary and high school, in Pretoria, Gauteng (city)

A high school in rural Western Cape

A primary school in Durbanville, Western Cape (larger town)

A primary school in rural Western Cape

A preparatory school in Durbanville, Western Cape (larger town).

In the participating schools, 10 – 20 educators were profiled according to the Neethling Brain Instrument. A group of 4-7 educators from each school was selected from this group according to their brain profiles in order to interview educators with a variety of brain preferences. In total 40 educators were interviewed. After completion of the data analysis, 8 of these educators were interviewed again for the purpose of cross-examination of the findings and suggestions. The interview schedule (included in Addendum B 3) covered questions on the findings and suggestions as set out in chapter 5.

Similarly the learners were profiled and then selected according to their brain profiles in order to select a focus group consisting of participants with a variety of brain preferences. In the primary schools only learners from grade 7 were selected. In total 53 learners, which included 26 high school and 27 primary school learners, were interviewed in these focus groups. In the preparatory school interviews were only conducted with the educators and not with learners. Because the Neethling Brain Profile Instrument is designed for learners from the age of 11, the researcher decided to include only learners from grade 7 and higher. On the other hand the researcher included educators from a preparatory school (grades 1 to 3) in order to ascertain whether their views regarding discipline would be markedly different from educators of higher grades.

4.6.2.2 The Neethling Brain Profiles

Participants completed the Neethling Brain Profile questionnaires, which were then processed by the researcher using the Neethling Brain Instrument software programme. Lists of the names and quadrant scores of the participants were developed.

4.6.2.3 Questionnaires

Before the start of the interviews, the learner focus groups were given short open-ended questionnaires to complete. Their responses were not shared with the rest of the group. In cases where learners may have been influenced in their answers by peer pressure during interviews, these questionnaires offered additional and informative data.

4.6.2.4 Interviews

Interviews were conducted with learners as well as educators. These interviews and the procedure followed during these interviews will be discussed here.

- Interviews with learners

Focus group sessions with learners were conducted in groups of 6-10 learners. A list of 12 questions was used to guide the session, but participants were given freedom to express their views on related issues. The interview schedule which was used during these interviews, is included in Addendum B 2. These interviews were audio taped and the researcher made additional notes. The interviews were conducted at the various schools.

- Interviews with educators

Individual interviews were conducted with educators. A semi-structured interview schedule consisting of 16 questions was used during the interviews with educators (see Addendum B 1). This schedule ensured that all the relevant issues were covered with all the participants. The questions were used only as a guide and participants were allowed to discuss issues they felt were important. These interviews were audio taped and the researcher made additional notes.

- The procedure during interviews

During the individual and group session interviews, the following procedure was followed:

1. The researcher introduces herself.
2. The researcher explains the research study and the role of the participants.
3. The confidentiality of the interviews is stressed and that names of participants will not be made public.
4. Permission is obtained to make a tape recording.
5. Participants are informed of the possible duration of the interview.
6. The interview proceeds using the interview schedule to guide the interview.

- Interview with a legal authority

The legal implications of the findings and recommendations of the study will be discussed with a legal authority during an interview at the conclusion of the study. This interview is part of the triangulation process.

- Triangulation interviews

An interview schedule will be used to interview 8 of the participating educators again to ascertain their views on the findings and recommendations of the study.

4.6.2.5 Observation

Adler and Adler (1994 as cited in Denzin & Lincoln, 2000:673) characterised observation as "the fundamental base of all research" in the social and behavioural sciences. According to Agrosino and Mays de Perez (in Denzin & Lincoln, 2000:673) studies based on direct interviews also employ observational techniques to note body language and gestures that might lend meaning to the words of the participants. During this study the body language, gestures, general appearance, the dress code as compared to school rules and positioning of the body (chair) relative to others in the group were all observed and noted and recorded as part of the data. Some learners were more willing to share

information and generally talked more than others. These observations are discussed fully in chapter 5.

4.6.3 Methods of data analysis

After the collection of empirical materials, the qualitative "writer-as-interpreter" (Denzin & Lincoln, 2000:23) has to make sense of the findings, formulate initial and finally a public text. Data can be analysed through content analysis, global analysis, grounded theory analysis, discourse, narrative and conversation analysis and computer-aided data analysis. Although not all of these methods were used in this study, a short discussion of several alternatives seems appropriate.

- Content analysis

Qualitative analysis of data involves the non-numerical organisation of data in order to discover patterns, themes, forms and qualities (Labuschagne, 2003). Content analysis would involve qualitative coding and categorising which means that the data is divided into small units of meaning which are named and grouped together in categories (Merriam, 1998). If the data is not interrogated, however, but simply becomes a report on facts, independent of intentions or circumstances, it leads to no more than a "thin description" (Holliday, 2001:79).

- Global analysis

Flick (1998:196) states that in global analysis the "aim is to obtain an overview of the thematic range of the text". Henning (2004:109) suggests that this analysis method is not just a preparation for coding, but an integrated view of the data in which themes are identified because of a holistic reading and accompanying notes.

- Grounded theory analysis

Grounded theory has already been discussed as a research strategy (see 4.5.1), but warrants a paragraph as a method of analysis. According to Charmaz (2002:675) the grounded theory analyst uses flexible strategies to convert

concrete realities to conceptual understandings of them. Through this process theories emerge which are grounded in the research reality.

- Discourse analysis

Discourse analysis is described by Myers (2004) as a form of semiotics. Semiotics is primarily concerned with the meaning of signs and symbols in language. Essentially words or signs in language would be assigned to primary conceptual categories which represent important aspects of the theory to be tested. The importance of an idea is revealed in the frequency with which it appears in the text. He further suggests that discourse analysis focuses on "language games", explained as a well-defined unit of interaction consisting of a sequence of phrases, metaphor and allegory which all play an important part.

- Narrative and conversation analysis

In narrative analysis the researcher applies characteristics of the narrative used by the participant to try to find a pattern of language action that may be significant (Cottle, 2002). Conversation analysis is a method whereby each segment of talk is labelled with a code that captures an aspect of opening or closing an interacting of turn taking, overlap, pause, forms of address, turn allocation and ways of extending talk sequences (Psathas, 1995).

- Computer-aided qualitative data analysis

Several computer software programmes exist today to assist the qualitative researcher. Weitzman (2000:805) notes an important fact regarding these programmes, viz. they can help to analyse data but cannot do the analysis for the researcher. According to Henning (2004:137) their real strength lies in ordering, structuring, retrieving and visualising tasks.

In qualitative research the sorting, explanation and verification of data are processes which occur simultaneously as the researcher works through the data (Rossouw, 1994:178).

4.6.4 Methods of data analysis during this study

The interviews with educators and the learner focus groups were transcribed. The interview questions were designed to generate certain themes regarding

discipline. Other themes emerged from these interviews and were noted by the researcher. The researcher used a code system whereby remarks by participants were categorised according to both the deductively and inductively generated themes. The responses were constantly compared to the brain profiles of the participants and any pattern or recurring insights recorded. The responses of the learners on the short semi-structured questionnaire were similarly noted under each of the themes and compared with the brain profiles of the participants. The responses of the learners were displayed in a matrix in order to more clearly analyse the results and to note recurring themes and responses. The observations by the researcher regarding body language, gestures and general appearance of participants were noted and compared to their brain profiles. The interpretive findings by the researcher of the attitudes, perceptions and ideas regarding school discipline and how these relate to the respective brain preferences of the participants, will be addressed in chapter 5. The codes of conduct of the participating schools were studied and analysed. This was done to ascertain whether these codes entrench the rights like democracy, non-discrimination, dignity and freedom of expression as outlined in the guidelines for these codes of conduct (Department of Education Notice 776 of 1998). Furthermore, the researcher sought to determine whether these codes of conduct were non-discriminatory regarding brain dominance and if not, whether not taking the different brain preferences of learners into account, could constitute a violation of this and other rights.

As mentioned earlier, the researcher worked within a constructivist-interpretive paradigm to analyse the data and to reach a conclusion regarding this research project. This paradigm or framework included the interpretation of the responses of participants, the way in which they interpreted questions, the words (for example emotional or not) they used, how much they were willing to reveal, their body language and gestures, their reactions towards the comments of others and how these elements reflected on their brain profiles. This was done through the constant comparative method. The codes of conduct of the participating schools

were also analysed to establish whether an alignment with a specific brain dominance was indicated in the document.

4.7 THE TRUSTWORTHINESS OF THE RESEARCH

In quantitative research the trustworthiness of research includes internal and external validity, reliability and generalizability (Anon., 2003e). Lincoln and Guba (as cited in Seale, 2002) have identified guidelines for the trustworthiness of qualitative research. They conclude that credibility can be established by amongst others prolonged observation in the field, persistent observation, the collection of sufficient data and triangulation. They continue that the confirmability of findings is based on the researcher's critical self-reflection.

As far as this study is concerned, the researcher has measured the trustworthiness of the research against the guidelines mentioned above. The amount of data collected was found to be sufficient as analysis of the data progressed. Although a wide variety of schools were used, it soon became clear that patterns were emerging regarding the responses of participants and that these were repeated as more and more responses were collected and analysed. At this point in the research, described in the literature as the saturation of data, the researcher found the data to be sufficient. The process of triangulation was also involved in the search for corroboration. Denzin (1978) has identified several types of triangulation. One type, the convergence of multiple data sources, was used here. Learners as well as educators participated, the Neethling Brain Profile was a data source and the codes of conduct of the participating schools were used as a text source. Denzin also describes methodological triangulation, which involves the convergence of data from multiple data sources. In this study data were collected through individual interviews, focus group sessions, short questionnaires, observations and documents in the form of the codes of conduct.

A third triangulation procedure is investigator triangulation and related to this, researcher-participant corroboration or cross-examination. In this study a

selection of the most prominent findings were presented to 8 of the 40 educators who took part in the study for cross-examination and comment on the findings and suggestions. An interview schedule was used during these interviews. The data collected during the second interviews were analysed and will be reported on in chapter 5.

Lincoln and Guba (1984:110) refer to the "generalizability" of a study as "an appealing concept" but continue that the existence of local conditions "makes it impossible to generalize". According to Strauss and Corbin (1990:17) generalization is not the aim of qualitative research. They maintain that the quantitative researcher seeks prediction and generalisation of findings, while the qualitative researcher seeks illumination, understanding and extrapolation to similar situations. The transferability of the findings of any qualitative study would therefore depend upon the degree of similarity between the original situation and the situation to which it is transferred (Lincoln & Guba, 1985:124). The researcher of this study has sought to follow the advice of Seale (2002: 97-110) in providing sufficient information to enable readers to judge the applicability of findings to other settings.

4.8 THE LIMITATIONS OF THIS STUDY

Although the researcher selected schools in different provinces, secondary and primary and one preparatory school, a private school and schools in both cities, towns and rural areas, white as well as black learners, this selection may still not be a complete representation of the attitudes and perceptions of educators and learners regarding discipline. As mentioned above, the limitations of qualitative studies regarding generalisation should also be taken into account.

It has also become clear that brain preferences are not absolute and that people may behave "out of character" in certain circumstances. While the responses of the different brain dominant groups became predictive in many instances, some

responses were unexpected and did not appear fully in line with the brain dominance of the participant.

While looking for a possible solution to the present negative perception of discipline at schools, finding the link between brain dominance and learner discipline may be an important one, but it would be an oversimplification to assume it is the only link.

4.9 SUMMARY

During this study the qualitative research methodology was applied. The research paradigm was in most part constructivist-interpretive and the research strategy was phenomenology. The methods of data collection included interviews, observation and open-ended questionnaires. A triangulations process was applied in order to test the attitudes and opinions of educators regarding the findings and recommendations as well as the legal implications of these findings and recommendations.

The interviews and focus group sessions created opportunities for active participation, for interaction, for the researcher to probe, to observe verbal as well as non-verbal communication and to gain insights during this data collection stage of the study. Myers (2004) states that the motivation for doing qualitative research comes from the observation that the one thing which distinguishes humans from the natural world, is the ability to talk. This is exactly what motivated the researcher to apply this research method. For this particular study in which brain preferences and the link to behaviour and attitudes were crucial elements, the qualitative method in which the "human element" is paramount, was a natural choice.

CHAPTER 5
Findings of empirical research

5.1 INTRODUCTION

In the previous chapter the research process of this study was discussed. In this chapter the analysis of the attitudes and perceptions of the participants regarding school and class discipline is expounded. The interviews with individuals and focus groups, the open-ended questionnaires and the brain profiles of the participants and also the observations made by the researcher during the interviews were used as sources for this analysis.

The interview schedule offers the basic structure of this discussion, but because of the semi-structured nature of these interviews, participants were free to voice their opinions and feelings on the subject of school discipline. The interview questions were designed to generate certain themes regarding discipline and other themes and subthemes emerged from these interviews and were noted by the researcher. The themes will be discussed separately during the analysis. Eight educators were interviewed again as part of a triangulation procedure to offer them the opportunity to comment on some of the findings and recommendations. Their comments will also form part of the data analysis.

The Codes of Conduct of the participating schools will also be analysed and discussed in terms of those issues which have a bearing on this study. An interview with a legal authority on the legal implications of the findings and recommendations will be included in chapter 6.

The responses of the participants were analysed by comparing them to their brain preferences as measured by the Neethling Brain Instrument.

A short summary of the four quadrants of the brain, as indicated on this instrument, will follow in the following paragraph.

5.2 THE FOUR QUADRANT SUMMARY

The following are key words that summarise the preferences of each of the four quadrants of the brain.

The L1 (top left) quadrant

Focused approach	Logic	Important to do it right	Rational
Objective/realistic	Concrete	Factual reasoning	Measuring
No nonsense approach	Mathematical	Performance-driven	Accuracy
Critical (of others/self)	Goal oriented	Analysing (digging deeper)	Precision
Diagnostic	Factual memory	Essence	Financial

The L2 (bottom left) quadrant

Planning	Tradition	Practical application	Procedures
Organisation	Routine	Rules and regulations	Promptness
Discipline	Structure	Step-by-step approach	Orthodox
Dedication	Task-driven	Following guidelines	Details
Tidiness	Operational	Safety-conscious	Result-driven
Dependable	Chronological		

The R1 (top right) quadrant

Search for alternatives	Risk	Synthesis	Idea-intuition
Comfortable with chaos	Artistic	Diversity	Integration
Doing many things at once	Change	Big picture	Association
Looking for alternatives	Fantasy	Strategy	Speculation
Experimenting	Surprise	Restless	Investigating
Unstructured	Flexible	Curious	Unorthodox

The R2 (bottom right) quadrant

Feeling orientated	Interaction	Empathy	Body language
Co-operation seeking	Ambiance	Playful	Listening focus
Atmosphere of caring	Enthusiasm	Passion	People-intuition
Music (emotional experience)	Sensitivity	Touch	Communication
Team/group orientated	Participative	Expressive	Supportive
People-environment	Social liaison		

Score categories of the NBP are the following: very high, high, average, low or very low scores. It is also important to note that candidates can have high scores for more than one quadrant in which case the preferences of each of the dominant quadrants may have an affect on the other. For example a strong L1 candidate would normally not have strong preferences for emotional and empathic processes (R2). On the other hand, if the R2 is the second dominant quadrant of this candidate, he/she may be comfortable with some of these kind of processes and may not behave in what could be seen as a typically L1 way in all circumstances.

It became clear during the analysis of the data, that some of the remarks made by both learners and educators during interviews, could be seen as not in alignment with their brain preferences. Some of these examples included strong L1 educators who showed strong insight into reasons for emotional behaviour by learners and who did not seem to insist on the teacher as the authority figure in class. L1 thinkers normally have strong preferences for control and authority and are not usually emotion-sensitive. These responses came mainly from more experienced educators which could indicate a willingness to apply lessons learnt in this regard in the past. A few strong R1 learners (who were expected to be more critical of the rules) seemed in agreement with strong discipline. These examples confirmed that brain profiles are not labels which are absolute, but that the human psyche is unique and can be unpredictable. Although some remarks

from participants could therefore be termed "out of character" for their particular brain profile, there was generally a very strong link between the responses and the brain preferences of the participants.

During the discussion of the data analysis, the researcher will refer to the quadrant summary tables and use a few key words as reference.

5.3 DATA ANALYSIS

The perceptions and attitudes towards discipline of respectively learners and educators will be analysed and reported on separately in the following paragraphs.

5.3.1 Observations during learner contact

The researcher took notes during focus group sessions with learners to document observations which seemed relevant to the study. These observations were later compared to the brain profiles of the learners to determine whether any deductions could be made regarding these observations. In each group the 'talkers' were identified. These were the learners who were comfortable sharing their views, who did not need prompting to participate and often added explanations and personal stories to elaborate on their responses. Some of these elaborations were long and emotional. These participants were, without exception, later identified as strong R2 thinkers. Their preferences for interaction and sharing ideas were obvious from their behaviour. Some of the notes which were added by the researcher about these participants, included "use of gestures", "touching friend", "sitting close to friend", "emotional words" and "sociable".

The learners that were described in the notes as "well dressed" or "neat", were later identified as both left and right brain dominant learners. On the other hand, what did seem significant, was that the few who were described in notes as "not

very neat" and "seemed dishevelled" were all R1 dominant. The participant who was observed wearing a ring at school, was also R1 dominant. These thinkers are often unconventional and not comfortable with strict rules and boundaries.
Other observations that proved to be significant, included those regarding learners who were obviously more reserved, who seemed to want to make a good impression and talked less than the rest of the group. These were mostly left brain dominant learners. One such note the researcher repeated a few times, viz. "seems careful when answering" described only left brain dominant learners.
A general observation was that participants in the rural schools were on the whole more reserved and polite.

5.3.2 Attitudes and perceptions of learners

The data collected during focus group interviews and from the short questionnaires, were analysed in order to determine the attitudes and perceptions of learners. Learners were assured of the confidentiality of the interviews and that their names would not be linked to their remarks during interviews. They spoke openly about discipline in general, about what they experienced as fair or unfair punishment, what they disliked regarding the behaviour of other learners and educators and offered opinions on how misbehaviour should be dealt with. As was mentioned in the introduction, certain themes and subthemes emerged which will be discussed here.

5.3.2.1 Punishment

The subthemes discussed here are misbehaviour that is most regularly punished and punishment that has the worse effect on learners.

- Misbehaviour most regularly punished

When asked which misbehaviour they were punished for most regularly, the most common response from learners was talking in class. Although this was a general response, most of these responses were made by those with strong R2 preferences (for interaction, expression and sharing). The learners who made remarks like "I get punished for many things", ".. for not doing homework" and

who mentioned unruly behaviour like throwing things around and shouting out were with one exception the strong R1 learners (who have preferences for unstructured thinking, flexibility and experimentation). Some learners, when asked what they were punished for most, replied that they do not really get punished, or were unable to think of anything specific and therefore implied to the researcher these were "well-behaved" learners. These learners were, with a few exceptions, those with strong left brain preferences (for discipline, rational thinking, structure and task-driven). When a learner at one school mentioned that he got into trouble regularly for forgetting to do homework, a strong left brain learner remarked, "That's why we have diaries." In the questionnaire completed by the eight educators as part of the triangulation process, the finding that left brain learners seemed more likely to obey school rules, was generally accepted by most of the educators.

- Punishment which has the worst effect

The question during the interview on what punishment made them feel the worst, was designed to elicit emotional responses from some learners. Not only did the responses of learners reveal much about their brain preferences, but also the words and phrases used by some and how much they were willing to reveal. Only the strong R2 learners (with preferences for expressing feeling for example) used phrases like "what really hurts", "human dignity", "being misjudged", "embarrassed in front of everyone" and R2 dominant learners were also the participants who embellished their remarks by telling several stories of such incidents, including their own experiences and those of others. These learners were also the participants who used the word "unfair" the most and mentioned most often how bad they felt about the reaction of other learners when they misbehaved (laughing, making fun of them, being spoken about afterwards). One R2 dominant learner repeated several times during the interview that being moved away from her friend for bad behaviour was the worst punishment for her.

Learners from all the quadrants mentioned that having their parents informed or called to school for bad behaviour would be one of the worst punishments, but it

was mainly the R2 dominant learners who also mentioned this as a means of punishment which would probably have a positive affect for future behaviour. These feeling and people oriented learners seemed to have the insight that when those you care about are informed of bad behaviour, it may help to ensure better behaviour in the future. The left brain dominant learners had far less to say during these discussions on punishment and even when prompted to respond, had to often think hard to come up with a response. Again this appeared to be because these learners were generally better behaved and did not receive punishment often.

5.3.2.2 Rules

The subthemes discussed here include those rules that were seen as unnecessary or unfair, rules learners would like to see changed, the motives for the criticism of rules and whether the opinions on rules differed in different schools.

- Unnecessary/unfair rules

When asked about the code of conduct and whether they regarded certain rules as unnecessary or whether they would like to see certain rules added, a number of participants remarked about their school's rules regarding hair and clothing specifically and some talked about other less serious offences they saw as unnecessary or unfair. The responses can be grouped into different categories, viz. those who were adamant about many of these rules that were unnecessary or too strict, those who took a more personal stance and those who did not think any of the rules should be changed. Mainly R1 and R2 dominant learners took a strong stance against certain rules. The difference between the suggestions of R2 dominant learners and others, were the use of emotional words and the emphasis on fairness. Rules regarding the use of hair gel, the length of hair, the colouring of hair and certain clothing items which were compulsory were remarked on in all the schools. Most learners, left and right brain dominant, remarked on "minor" rules like the rule regarding the colour of hair ties which should be more lenient. In the written questionnaire the question about unfair

rules was restated to include unfair punishment. Both left and right brain dominant learners saw punishing all for the transgression of one or a few as unfair.

- Changing rules

Regarding the change of rules, it became clear during the interview sessions, that most learners were in favour of changing some of the rules. Those that were adamant about changing rules to allow the colouring and gel of hair, even to be allowed to wear make-up and ordinary clothes were mostly learners with strong R1 preferences (for flexibility, being unconventional and experimental). Although some left brain learners would support the criticism of some rules, hardly any of these learners suggested changes themselves. In the short questionnaire, the majority of learners who answered the question, "What school rule do you consider unnecessary" with "none", were the left brain dominant learners. Some of the criticisms that were considered by the researcher as out of the ordinary, included "we are not allowed to draw on each other", "we should be allowed choose whether we want to write cursive or to print" and "we should be allowed to wear ordinary clothes". These remarks were made exclusively by R1 dominant learners.

- Motives for criticism

It became clear after several interviews, that the motives of certain learners for criticising certain school rules differed from the rest of the group. These learners saw themselves as being deprived of certain "rights" and talked about unfair rules and that "teachers do not care about us". These learners tested high in the R2 quadrant, showing preferences for amongst others caring, sensitivity and sharing. They remarked about not being allowed to drink water or to eat in class, about being "judged" by educators because of their dress and about the unfairness of not being allowed to talk to certain teachers and to explain their behaviour. Although they received some support from learners stronger in other quadrants, it was the R2 learners who often emotionally stated their case and spoke about unfair and uncaring treatment by educators and that educators would eat and drink in class but not allow the learners to do the same.

- Opinions in different schools

Generally the criticism of school and class rules was stronger in the urban than in the rural schools. This was obvious during focus group sessions as well as from the short questionnaire. The issues remarked on in rural schools were relatively minor in nature than those discussed in the urban schools. This supported the general opinion held by learners as well as educators in both urban and rural schools that discipline was worse in urban than in rural schools. There was no marked difference between primary and high schools, although this could be due to the fact that only grade 7 learners were interviewed at primary schools.

5.3.2.3 The behaviour of other learners

Participants were generally very forthcoming about what irritated them about the behaviour of other learners. They were asked this question in the interviews and also in the short questionnaire. The learners who mentioned disrespect or gave a description of disrespectful behaviour (for example "they are intentionally disobedient" or "swearing") were mostly R2 dominant learners (with preferences for sensitivity and being supportive). The few that mentioned others being "no fun" or boring because they told the same jokes or stories over and over, were all R1 dominant learners (with preferences for alternatives and diversity). Remarks like "no co-operation", "they don't care about others", "those that make you feel bad" and "those that are full of themselves" came mostly from R2 dominant learners, again showing their preferences for sensitivity and an environment of caring. Those who mentioned others talking making it difficult for them to concentrate, were mostly strong L2 learners. These learners are usually conscientious and dedicated. The few right brain dominant learners who also referred to others talking when they wanted to listen to the teacher as irritating, all had average to strong preferences in the left brain quadrants as well. The word "bossy" was used by two learners who were both strong L1 thinkers, to describe what they disliked in others. As L1 thinkers often like to be in control, control by others may not sit well with these learners.

5.3.2.4 Maintaining discipline

The subthemes regarding the maintenance of discipline that will be discussed here, are the code of conduct, class rules and corporal punishment.

- Code of conduct and class rules

In the schools which took part in this research, different systems and procedures are in place for dealing with misbehaviour, but all include some form of merit and demerit system. In most of the schools, learners did not seem to have much insight into the code of conduct and had little general comment in this regard. They understood the school's particular disciplinary system and how it affected them. As mentioned in paragraph 5.3.2.2 they commented mostly on hair and clothing rules and strong criticism came mostly from right brain dominant learners. In some of the schools a warning system is in place, whereby each warning is recorded and punishments occur after a set number of warnings. During the interviews, this system elicited criticism from a number of learners, with R2 learners taking a strong stance on the unfairness of some of these warnings, because they did not always, according to them, have an opportunity to explain themselves. It may therefore be argued that the problem is not necessarily in the formulation of the code of conduct, but rather in the implementation thereof. R2 learners are especially sensitive of unfair educators not abiding by the rules of natural justice, particularly the *audi alteram partem* principle. Only a few learners admitted to not knowing the school rules at all and these were all R1 dominant learners. Most participants did not know whether learners were involved in the development of a code of conduct and none of those taking part in the research had been involved in such a process. In one of the participating high schools the participants commented that a representative from each class had input in the code of conduct but were not absolutely certain about the extent of their participation in the process.

- Corporal punishment

When asked to remark on discipline in general during interview sessions, many learners were of the opinion that discipline is worse than it used to be. One of the reasons some learners gave for this was the abolishment of corporal

punishment. This was not a theme included in the interview schedule, but emerged several times. When asked directly, learners with left as well as right brain dominant quadrants expressed uncertainty about whether it should be brought back as a mode of punishment. None of the learners included in this study had any experience of corporal punishment as a legal form of punishment in schools. A few learners responded that it should be reinstated because the only way some learners would learn is "if they feel". These responses were made by L1 and L2 learners. A few remarked that they are against corporal punishment as learners should not be hurt. Most of these learners were R2 dominant. In many cases it was clear that the opinions of parents regarding corporal punishment were repeated by the learners.

5.3.2.5 General views on discipline

During interviews, most learners expressed the opinion that discipline is worse than it used to be. They blamed younger learners that were behaving in ways that they would not have done, they blamed parents who were not strict enough and allowed children "to get away with more" and the abolishment of corporal punishment. Learners who criticised educators for the increase in misbehaviour were mainly right brain dominant learners and R2 thinkers more than any of the other quadrant groups. Some of these criticisms included remarks like "they don't allow us to explain", "we are punished even if we put up our hand to ask something", "we receive warnings unnecessarily" (referring to warnings which form part of a demerit system) and "we are called barbarians when that is what they are". Criticism of educators were more prevalent in urban than in rural schools. There appeared to be no difference between primary and high school learners regarding their criticism of educators. As mentioned before, this could be due to the fact that only grade 7 learners were interviewed at primary schools.

The following matrix gives an indication of the responses made most regularly by learners during interview sessions and in the short questionnaire regarding the different themes.

5.3.2.6 Matrix of learner responses

A summary of learner responses made most regularly during interviews and in the questionnaires, is represented in the following matrix. Some of these responses have already been referred to in the previous sections.

PUNISHMENT	L1	L2	R1	R2
Most regularly	Not really punished	Not really punished	For many things; not doing homework; throwing things around; mess up; shout out	Talking; eating in class
Worst effect	None; no unfair punishment	None	Office; parents	Not allowed to explain; all punished for one; punished in front of whole school; unfair-ness; detention during break and not allowed to eat; negative comments by teacher; teachers don't care; embarrassed; misjudged; parents (hurts most); insulted; children laugh
RULES	**L1**	**L2**	**R1**	**R2**
Unnecessary/ unfair	None; not one; no rules; well addressed; a reason for all school rules	None; good; no problems	Gel; talking in rows; writing longhand or not; wearing school shoes	Drink or eat in class; judged; not allowed to explain; no rights; teachers don't care; moved away from friend
Change	None	None	Hair rules; colour of hair ties; ordinary clothes; tucking in of shirt; make-up; length of hair (boys)	Eating in class; not allowed to sit next to friend; toys to school; talk while working;
Behaviour of other learners	Talking when teacher busy with important things; bossy;	Talking and can't concentrate; bad behaviour	No fun; boring; tell same jokes, stories	Swearing; intentionally disobedient; don't care; full of themselves; no respect; making fun;

	bad behaviour; won't listen; can't hear			looking for attention; hurtful; childish; dirty language; talking about others; make you feel bad about yourself; no co-operation
MAINTAINING DISCIPLINE	**L1**	**L2**	**R1**	**R2**
Code of conduct	No problem with rules	All rules necessary; should have stricter rules on back-chat	Unnecessary rules; too strict; don't know rules	Warnings unfair; unnecessary rules; no opportunity to explain; if learner not allowed to eat etc. teacher should not be; teachers say we are barbarians – that is how they act
CORPORAL PUNISHMENT	Good for them to feel it; only way they listen	Good to feel it; good – they will learn; yes, bring it back; some ask for hidings	Maybe	Maybe; could be worse
GENERAL VIEWS ON DISCIPLINE	Worse than before; clothes better in past	Worse than before; they get away with things; they take chances	Worse	Worse; children are rude; don't care; no respect

In the following paragraphs, the attitudes and opinions of educators towards discipline will be analysed.

5.3.3 Observations during educator interviews

The researcher took notes during the individual interviews with educators of observations which appeared to be relevant to the study. Several educators were noted as 'talkers', in other words those who spoke without prompting, spoke at length at times relating personal experiences and those of their learners. These were found during analysis of the data to be mostly R2 dominant educators. One educator who spoke at length, and often lost his train of thought did not have

strong R2 preferences. He appeared to contradict himself when supporting the strict control and discipline of the past on the one hand and on the other hand supporting the notion that educators should change their attitude towards discipline. In this case his struggling to reach the point of his discussion and the apparent contradiction in attitude could be explained by the fact that he had strong scores in the L1 as well as the R1 quadrants.

An observation that was made several times was 'a very caring attitude when talking about learners and displays a softness'. These notes also described R2 dominant educators. Another observation that was repeated a few times referred to educators who portrayed a caring attitude, but researcher also added notes that indicated a possible paradox regarding this observation. These notes included comments like 'also a supporter of corporal punishment', 'strong on control' and 'control and a traditional approach to education seem to dominate caring attitude at times'. When these observations were compared to their brain profiles, it was found that these educators had strong R2 preferences but also had strong preferences in one or both of the left brain quadrants. A general observation that was documented after the interviews with educators at a preparatory school (grades one to three) was that, although all these educators appeared to have strong caring attitudes, most of them also appeared very strong on control, emphasised quietness in class, the importance of controlling the behaviour of learners, even supporting corporal punishment as the best measure to punish these young learners. These educators were all found to be R2 as well as L2 dominant. Other observations of a possible 'paradox' in the comments and attitudes of some educators, were later, during data analysis, linked to the brain profiles of the participants and more specifically to the combinations of the dominant quadrants. Some of these educators had strong L1 as well as R1 preferences (for control and authority as well as flexibility) and others had similar scores in all their quadrants which indicates a balance between the preferences represented by each of the quadrants.

5.3.4 Attitudes and perceptions of educators

Data collected during the interviews were analysed in order to determine the attitudes and perceptions of educators. Educators were, as in the case of learners, also assured of the confidentiality of the interviews and that their names would not be linked to their responses. Teachers aired their views about discipline in general and about specific areas which they perceived as problematic. The themes and subthemes which were part of the design of the interview schedule and those which emerged during the interviews will be discussed here.

5.3.4.1 Code of conduct and school rules

During the individual interviews, most educators expressed their satisfaction with the code of conduct of their respective schools. Those that called for stricter rules on issues like clothing and hair for example were all left brain dominant and in contrast those who admitted that they thought some of the rules regarding these issues mentioned, could be less strict, were, with a few exceptions, right brain dominant participants. The latter made remarks like "these rules are not relevant anymore", "I don't have an issue with these things" (Afr.: "het nie 'n saak daarmee nie") and "I am always trying to change unnecessary rules". Another criticism which was voiced a few times concerned the process of dealing with misbehaviour which was either too laborious and long (mostly R1 participants) or was not followed through (L2 participants, who have strong preferences for procedure and are result-driven).

Another response which was repeated a few times concerned the participation of parents in the code of conduct. These varied from 'the code of conduct should state that parents should believe educators regarding their children's' behaviour' (from a L1 dominant educator), 'parents can sometimes overreact (Afr. 'hulle kan erg wees') when their children break the rules' (from a R1 dominant educator), 'parents are not involved enough and don't support us enough', 'I am looking for co-operation from parents' (from R2 dominant educators).

5.3.4.2 Corporal punishment

Many of the educators interviewed were in favour of corporal punishment regaining legal status as a mode of punishing misbehaving learners. Their views varied from those who were adamant that it was the only solution, to others who hesitantly remarked that maybe there was a place for it, but then controlled and only administered by the principal. When comparing their responses to their brain profiles, the following pattern emerged: Those who admitted using corporal punishment in the past (and some individuals who admitted that they still do) and swore by the success of this method of punishment were predominantly L1 or L2 dominant educators. This is probably because of their strong preferences for control, authority and disciplined behaviour. Remarks from these educators were for example, "I feel certain boys need it and certain girls should be rapped", "I never had problems when I could hit (Afr. "foeter") them", "I am a great supporter of corporal punishment" and "it was the only way children listened". These type of remarks were made by male as well as female educators. A similar pattern of responses regarding corporal punishment emerged amongst educators of lower grade learners (grades 1 to 3). Few educators were completely against this form of punishment, but those who did express strongly that they did not want to see it return, were all R2 dominant educators. Their reasons were amongst others that it is "bad for children emotionally", "not a good thing for children", "it makes them aggressive" and "discipline should be preventative". Some of the right brain dominant educators (R1 and R2) who did support corporal punishment cited the disciplinary process in schools today with its amount of paperwork, the length of time it takes and the negative self image of learners it cultivates, as a worse choice.

5.3.4.3 The role of the educator in the classroom

Most educators accepted the fact that the role of the teacher had changed from purely the authority figure in the classroom and that learners should also have a say. Most (left and right brain dominant educators) spoke about a balance that should be created. A few strong left brain dominant educators were adamant,

though, that the educator still had the authority and could say "because I say so". They made remarks like "the old days were wonderful", "that is how it should be" and "I can't handle it when they overstep". In contrast the few who made a point of stressing that authority as previously implemented in the classroom does not work any more, were mainly right brain dominant educators and mostly R1 dominant. A few of the latter spoke about being uncomfortable with strict authority. R1 dominant thinkers are rarely comfortable with strict authority, control and a lack of flexibility.

5.3.4.4 Learner behaviour

The issues regarding learner behaviour that will be discussed here are emotional or sensitive learners, challenging learners and untidy work and bad handwriting.

- Emotional/sensitive learners

Educators were asked how they handle emotional learners in class. It was the researcher's impression that most educators saw this as a question that needed a "favourable" answer, in other words they needed to express that they could handle this behaviour in a positive way. What did emerge from the responses was the remark that "we are not all the same" which were repeated by several educators when explaining why they felt emotional learners should be handled in a sensitive way. These remarks came from right brain dominant and mainly R2 dominant educators. Only R2 dominant educators said that they often cry along or hug learners who are upset. Male educators most often said that they would ignore this behaviour at first or that they would refer them to someone else to talk to. The general perception of the researcher was that educators would not handle emotional learners in an insensitive manner.

- Challenging learners

When asked how they handle learners who challenge and question them in class, the interpretation of the question by educators was revealing. Some educators immediately interpreted the "challenging" learner as negative and went on to explain how they would handle this misbehaviour. They remarked that they demanded proof of being wrong when challenged by a learner, that they found

this behaviour difficult, that they punished defiant behaviour and still believe in saying "because I say so". These remarks were made by L1 dominant educators mostly (who have preferences for authority, a no nonsense approach and focus), by L2 dominant educators or by those who had low scores in the R1 quadrant (in other words with low preferences for flexibility, unstructured environments and unorthodox behaviour). This attitude was not only apparent when interviewing educators of senior grades but even those of grades one to three. Other educators, however, interpreted the question in a more positive light and remarked that they liked challenging learners, going so far as to say they were "mad about it" and that these challenging learners were often the bright students. These remarks were made mainly by educators with strong R1 preferences (for alternatives, speculation and investigation).

- Untidy work and bad handwriting

It was clear to the researcher that educators were for the most part, well informed about possible medical or other reasons for untidy work or bad handwriting. In most cases they implied that these reasons would first be investigated before any steps would be taken against learners. Several left and right brain dominant educators indicated that neat work is important. What became clear from the remarks of educators, was that many of the right brain dominant educators expressed concern for learners who wrote untidily on the one hand, and on the other hand made excuses for such writing. Remarks varied from more caring remarks like, "people differ; I have empathy", "bad handwriting can adversely affect their essay marks" and "I give them exercises to help them improve" to remarks like "some things you can't change", "I struggle with it myself" and "I don't write too wonderful myself".

Generally educators of lower grades in both rural and urban primary schools, were more strict about neatness than high school educators. Two left brain primary school educators remarked that they have to be strict as this would reflect on them when learners went to high school.

5.3.4.5 Maintaining discipline

Nearly all educators thought that discipline had worsened during the last number of years. The vast majority blamed this on the parents who, according to educators, are not involved with their children enough, who allow them too much and who do not support educators when children need to be punished for misbehaviour. Some blamed the OBE system and one strong left brain educator said she "absolutely refuses to do group work" as learners have to be absolutely quiet (Afr.: "tjoepstil") in her class. Educators in the schools in rural areas which took part in this research, felt the discipline in their schools was much better than in urban areas. Educators in the urban schools agreed with this sentiment.

Only two educators thought discipline had improved because of the more open and caring way indiscipline could be dealt with at present. They were both strong right brain thinkers.

5.3.4.6 Matrix of educator responses

The following matrix is an exposition of the responses made by educators most often during interviews. Some of these responses have already been referred to in the previous sections.

Code of conduct	L1	L2	R1	R2
	Strict on hair, clothes – creates a disciplined culture; like order	Not following through on procedures; our code of conduct good; department is against us; like the strict procedure; a good system; I use the system strictly; rules are good	Code of conduct is never complete; some rules are irrelevant; don't have issue with this; always trying to change rules; laborious procedures; hate paperwork; process is waste of time; not too bothered about small things; not very strict about clothes etc.	More open today – learners can talk to you; explaining better than negative record; long process bad for self image of learner; success lies in caring; best if parents involved; success through interaction; positive affirmation; I allow talking once they are working; buddy system works

Corporal punishment	Can work; I am a great supporter; some need direction; still place for it; boys need it, girls should be rapped; no problems when I could hit	Can be good	Maybe; sometimes	Only with impartial person; no – more positive results with praise; cannot do it at all; far better without; no, just makes them aggressive; long process is too negative
Role of educator	Because I say so still useful; I demand respect; unfortunately no complete authority; I am often authoritarian	Old days wonderful; don't like familiarity; I record everything; need more precise instructions	I have personally changed some rules; atmosphere should be more relaxed; both have right to talk; not comfortable with authority; strict authority can't work	A softer approach – reasons for behaviour come out; they perk up when I sit on carpet with them
Learner behaviour				
Emotional/ sensitive	Not very good; ignore completely; don't like it; firm if I think it is a form of manipulation	Let them take a walk; try to stay calm; remove child from class	We are not all the same; we are unique	Try to help; we are all unique; each child an individual; need to know reasons; try to understand; talk to them; need a hug and to be listened to; I am emotional too; have empathy; enjoy this side of teaching; understanding is most important
Challenging	First prove I am wrong; I know I am right; feel I have to be in control	Struggle to manage them; dislike when routine is disrupted; certain things not negotiable; strict; can't handle it; find it difficult	They have more confidence; creative learners; like this; they want to know more; to find out; don't pretend you know everything; understand it: they want to argue a point; like them in my class; the bright learners; love it – keeps me on my toes; use humour	Handle them with care; am comfortable; praise them a lot

Untidy/bad handwriting	They lose out; can be very strict	Very strict; have a mania about it; I like tidy work; maybe too strict	Teach them new strategies; want to break the pattern; ignore it in older learners; struggle with it myself; not an issue; as long as I can read	Struggle with it myself; feel sorry for them; it is subjective
Maintaining discipline	Worse; OBE and group work the problem; good educators leaving profession; it will become worse; don't take notice of threats; parents don't discipline	Worse; hard work to maintain; it will become worse; parents not strict enough	Worse; we should allow them to spread their wings; must be a better system; start at home	Worse; more open system can grow confidence; better – can talk and be caring; no support from parents; like the way you can walk a path with the learner; no respect from parents

The codes of conduct of the schools involved in the research were also considered as a source for this analysis.

5.3.5 The codes of conduct of the participating schools

The codes of conduct of the participating schools and 4 other schools selected at random were studied and analysed in terms of those issues which have relevance to this study. The education law determinants, the participants involved in the drawing up of these codes and the content of the codes will be discussed here.

5.3.5.1 The education law determinants

According to chapter 2 of the South African Schools Act (SA, 1996b) the code of conduct, as determined in s. 8(2) of this act, should be aimed at "establishing a disciplined and purposeful school environment" and also one which contains provisions "of due process safeguarding the interests of the learner" in disciplinary proceedings (SA,1996b). Section 4 of the guidelines for this code of conduct (Department of Education Notice 776 of 1998) spells out the rights such as democracy, non-discrimination, dignity and freedom of expression, to name a

few, which should be firmly entrenched in the code of conduct of each school. In half of the codes of conduct studied, some reference was made to the education law determinants or to the rights of learners. Only two of the documents studied quoted the laws which had a direct bearing on the code of conduct and on human rights. Most of the documents studied, stated the aim of these codes as an introduction, others proceeded directly to the rules and punishments as applied in the specific school. Generally these aims highlighted respect, social values, pride and loyalty, responsibility, discipline and sharing. Only two codes of conduct studied referred to the relevant legislation when explaining the procedures in place when dealing with certain types of transgressions and the right of learners to appeal against disciplinary decisions was mentioned in only two of the documents. This seems a serious omission when taking into account the SASA s. 8(5) which states that "A code of conduct must contain provisions of due process safeguarding the interests of the learner and any other party involved in disciplinary proceedings".

5.3.5.2 Contributors to the Code of Conduct

As stated in chapter 2 of the SASA the Code of Conduct, as a standard of moral behaviour, must be a document which involves input from not only the governing body, staff and parents, but learners as well. In all the schools that took part in this research, not one learner how participated had ever been involved in the drawing up of a code of conduct and hardly any knew who were. In some of the schools the educators informed the researcher that neither learners nor parents were involved, except for the input of the governing body which was seen as the parents' voice. In a minority of the schools the SRC had some involvement, but then only in matters such as uniforms. None of the codes of conduct studied stated who the participants of the document were. This seemed a significant hiatus in these documents when the SASA in s.8(1) states categorically that schools "must adopt a code of conduct for the learners after consultation with the learners, parents and educators of the school". In section 4 of the guidelines for the codes of conduct (Department of Education Notice 776 of 1998) it is

stipulated that all learners have the right to, among others, participate in decision-making about matters affecting them at the school and the right to have their views heard about these matters. As mentioned before, several learners, especially R2 dominant thinkers, felt they had no say regarding certain rules, felt ignored and blamed educators for not giving them the opportunity to voice their opinion. Many learners, especially R1 learners, thought certain rules regarding hair, clothes and other minor issues were too strict and out-dated. Some, mostly R1 educators, agreed with this sentiment. As stated by Roos (2003: 511), when learners are involved in the formulation of school and classroom rules, responsibility is fostered instead of blind obedience. A code of conduct in which only the views of certain individuals (in most cases only certain educators) are always considered, may be in danger of being discriminatory. As this research has revealed, learners have different attitudes towards discipline and even though they may differ radically from traditional views, they still need to be heard, their views taken into account or at least addressed in order to make learners feel that they are allowed to have opinions in the first place. This may bring the "buy in" into the code of conduct that is absent from most schools today. The participation of learners in composing the code of conduct was stated as a recommendation in the triangulation questionnaire and elicited only positive responses from left as well as right brain dominant educators. A general conclusion the researcher made regarding the codes of conduct, was that the voices of the learners were mainly silent in these documents.

5.3.5.3 The content of the codes of conduct

In most cases, the codes of conduct studied are comprehensive documents. They list detailed rules and in some cases the disciplinary steps and procedures for different categories of misbehaviour. Most of the codes of conduct include sections on clothes, punctuality, property, neatness (of self and school), serious misconduct (such as drugs, weapons, theft), disciplinary procedures and other general class and school rules. The rules are stated in a very precise and detailed manner. For example, most of the documents spell out the time of

different bells, the exact behaviour after each bell, (for example "no exuberance", "absolute silence"), they include long and descriptive lists of what is not allowed, elaborating on many issues. The rules regarding hair are generally very inflexible and include rules like "hair must be its natural colour; it may not be dyed or peroxided; no plaits, strings, bangles and dreadlocks allowed", "unusual hair styles, perms and colouring not permitted", "the fringe may not touch the eyebrows" and "only blue hair accessories may be worn". The content and style of these documents could generally be described as left brain dominant. They are inflexible, detailed, critical and authoritarian. A measure of flexibility, encouragement to achieve the goals of the code, awards and incentives which would be representative of a right brain dominant style, are in most part absent from these documents.

It may be argued that flexibility and encouragement are not part and parcel of such documents which have to set hard and fast rules and should leave no room for argument or doubt. The fact that two of the documents studied incorporated categories of commendation for good behaviour and that the Code of Conduct of one of the participating schools contain excellent examples of flexibility, contradict such an unyielding attitude towards the style of such documents. It is interesting to note that the school found to have a flexible Code of Conduct, is a rural high school. Examples of this flexible approach to rules are "hair accessories may be dark blue, white, silver or brown", "if hair is permed, it has to be combed out neatly and fastened", "Africa plaits are allowed if they are fastened in one ponytail", "hair may not be coloured in an unnatural way", "newly coloured hair may not be more than one shade lighter or darker than the natural hair colour" and "belly rings may not be visible and must be removed or covered when taking part in physical activities". At this particular school the researcher conducted interviews with the principal as well as 7 other educators at the school. One educator also took part in the follow-up cross-examination interview. It was obvious that all educators saw discipline at their school as generally excellent. Although most educators and learners participating in this research study were of the opinion that discipline was better at rural than at urban schools,

it was clear that this flexible approach to rules had more of a positive effect than a negative one. The merit system of one of the schools which was incorporated in their Code of Conduct involves a pride card (Afr. "spogkaart") earned by learners who consistently behave well that enables them to buy at discount at certain businesses in their town. This was another rural school where the general opinion of educators was that the discipline at their school was excellent. On the other hand, the fact that most educators in the participating schools remarked on the deterioration of discipline in schools today, must imply that having a well-documented code of conduct and one which spells out the rules and procedures for dealing with misconduct in detail is not enough.

Taking into account the responses of learners as well as educators regarding school discipline in general, the codes of conduct of the schools and the attitudes of participants to these codes of conduct, the following conclusion was reached.

5.4 SUMMARY

The participants for this research were chosen mainly on the ground of their varied brain profiles. This was essential in determining whether specific brain preferences would influence attitudes towards and perceptions of discipline.

5.4.1 Learners

It appeared that the more unruly learners and those that had most criticism for certain school rules, were strong right brain dominant learners. They are less comfortable with strict rules, they are more unstructured, take risks more readily and are less likely to conform. Traditional school rules and inflexible school environments are less likely to suit them. They were also the most challenging, not accepting everything they are told. The conclusions regarding challenging learners, attitudes towards rules regarding hair and clothes, the R2 dominant learners, learners with left and right brain dominant quadrants and some general remarks will be discussed in the following paragraphs.

- Challenging learners

The finding that right brain dominant learners were generally more challenging than other learners were included in the interview schedule for cross-examination. All educators (left and right brain dominant) who responded to this questionnaire, agreed with these findings. The attitudes of educators towards these learners were revealing. They were mostly seen as difficult and this behaviour as misbehaviour by left brain dominant educators, while a number of right brain dominant educators saw this as a positive, as a sign of "cleverness" and even as something they enjoyed very much. The researcher saw this as an example of how positive educator attitudes towards these learners could lead to tolerance and better behaviour.

A few points regarding the Bill of Rights (SA, 1996a) discussed in chapter 2, need closer attention here. Section 15 of the Bill describes the freedom of opinion and section 16 states that everyone has the right to freedom of expression which includes the "freedom to receive or impart information or ideas". It is the impression of the researcher that because of differing brain preferences, some educators are infringing on these rights of learners, because of a "say as I say and do as I do" attitude. Learners expressing an opinion and imparting ideas are in other words seen as disrespectful by these educators. The researcher is by no means advocating disrespect and that learners have a right to say what they like at all times. Good manners, respect and values should always be paramount and in all communication the human dignity of others should be respected and protected, as stated in s. 10 of the Constitution (SA, 1996). But when a learner's ideas and opinions are constantly disregarded, ridiculed and punished because they do not agree with the educator's point of view, the learner's right to freedom of opinion may be in danger of being violated. This situation is exacerbated when educators are willing to entertain opinions of learners who agree with their own. Section 9 of the Bill of Rights is also called into question when these situations could be seen as examples of unfair discrimination. In the National Education Policy Act 27 of 1996 s. 4(i) it is stated

that the national education policy shall be directed towards encouraging independent and critical thought. It seems that in many instances the "independent and critical" thoughts of learners are seen as misbehaviour and punished in stead of encouraged.

- Attitudes towards rules regarding clothes and hair

The right brain dominant learners also had the most negative remarks about rules regarding clothes and hair. Some left brain dominant learners agreed, but seldom took the initiative to criticise these rules. This seemed to strengthen the conclusion that these learners are more comfortable and accepting of traditional rules and more likely to abide by these rules. These were also the learners who rarely mentioned being punished for any of these type of transgressions.

- R2 dominant learners

The strong R2 learners appeared to be mostly in trouble for talking. Many of them were very critical of educators who did not seem to care or who did not treat them fairly. They often spoke of being hurt, embarrassed and not given the opportunity to explain themselves. Section 10 of the Bill of Rights calls for the dignity of all to be respected and protected. If educators deal with these students by using hurtful insults, sarcasm and humiliating labels, this could be seen as an infringement on this right.

- Learners with left and right brain dominant quadrants

As was mentioned in 5.2, it is possible to have more than one dominant quadrant. What was also clear, was that participants who had a strong right brain quadrant as well as a strong left brain quadrant, were far less likely to criticise rules and modes of punishment. These left brain preferences (for discipline and structure possibly) seemed to balance many of the right brain preferences when it came to discipline.

- General conclusions

Their perception that the rules and the school environment are too inflexible, appeared to be the major problems for right brain dominant learners. They generally expressed criticism towards educators who did not listen to their side or did not allow them to state their case. Educators "who did not care" about them,

was a sentiment stated several times. Some seemed truly hurt about what they perceived to be disinterest or lack of understanding of educators. It was obvious that these right brain dominant learners were generally those that got into trouble most regularly for misbehaving. It is the researcher's deduction that this is as much a result of the learners' brain dominance as the educators' lack of insight into the reasons for some of the behaviour of these right brain dominant learners. The National Education Policy act 27 of 1996 states that the new education system will "contribute to the full personal development of each student" and that it will recognise "the aptitudes, abilities, interests, prior knowledge and experience of students". A system where these brain preferences are not taken into account can not fully contribute to the personal development of its learners.

Left brain dominant learners were generally far more acceptable of rules and processes in place in their schools. They often agreed with other learners on minor issues (colour of hair ties or not being allowed to play ball in the quadrangle for example), but seldom brought these up themselves. They also appeared to be the more well-behaved learners who did not get into trouble often. The more structured environment and set rules and procedures in place in schools, seem to suit these learners better than their right brain dominant peers. This was one of the findings included in the interview schedule of the 8 educators selected for cross-examination. A comment by one educator (strongly right brain dominant) that upbringing and therefore values and good manners would play an important role here, was a valid remark. In other words, a poor upbringing would most probably affect the behaviour of even strong left brain dominant learners in a negative way. Another comment regarding this finding stated that left brain dominant learners do react well to discipline on the understanding that it is applied in a structured and consistent manner. Misbehaviour by other learners was also met with disapproval mostly by left brain dominant learners.

5.4.2 Educators

Educators were mostly in agreement that discipline is worsening in schools today. They most often blamed parents and the abolishment of corporal punishment. What became apparent to the researcher was that it was mostly right brain dominant educators who remarked that "we are not all the same" and that they had empathy with emotional learners, with those that did not write very neatly or did not mind or even enjoyed those learners that challenged the status quo. On the other hand many did not tolerate such behaviour or expressed no flexibility when dealing with it. It was clear that many educators, mostly left brain dominant, preferred the traditional role of the educator as authority figure and that they longed for the days when stricter punishment measures were in place. As mentioned in the introduction, some responses were surprising considering the brain preferences of the specific participants, and seemed "out of character". On the other hand the varied attitudes of educators towards disciplinary issues were proven to be closely linked to their brain preferences, and their brain dominance therefore has a strong influence on their approach to learner behaviour in their classrooms.

The impact that these differences in attitude of educators have on the application of Constitutional principles such as the best interest of the child, equality and dignity, need to be addressed. The research showed that educators had less tolerance for learners who were "not like them" as far as brain dominance was concerned. This is a phenomenon that is not uncommon in interpersonal relationships. People generally have less tolerance for those that act differently, have different views, are more or less emotional or enthusiastic than themselves in a specific situation. When some educators indicated that they "ignored" learners who became emotional, that they "struggled to handle" challenging learners or called learners "barbarians" (as one R2 learner emotionally remarked) when they talk in class, these Constitutional issues come under fire. This lack of tolerance of those that are different from the self, or at the least a more positive attitude towards those that are similar, was not found exclusively amongst left

brain dominant educators during this study. Some of the remarks by right brain dominant educators which were indicative of this attitude when discussing their appreciation for challenging learners, included "I like to think wider and find it difficult if others don't" (referring to left brain dominant learners), "I see them as the brighter children", "I like a challenge", "I like this in people" and " I find them stimulating".

5.4.3 The Code of Conduct

The main conclusion derived from this research regarding the codes of conduct of schools, is that learner input should become a reality and not just theory as provided for in the SASA. Some measures should be in place in order to ensure that schools adopt a Code of Conduct only "after consultation with the learners, parents and educators of the school" (SASA s. 8(1)). Many learners (mostly right brain dominant) complained that they do not have a voice, that educators do not listen to them. This could very well be at the core of why there is little buy in from some learners into the code of conduct. When learners feel they have no say or input into the code of conduct, they may also feel less inclined to abide by the rules as stated in this document.

Another issue voiced by some educators as well as learners, was the negative style of many codes of conduct. In other words, what is not allowed is stressed, but hardly any encouragement, awards or incentives are included in these documents. Although some schools have a merit/demerit system for good or bad behaviour in place, this is not entrenched in the codes of conduct. In this regard, making sure that learners with left as well as learners with right brain preferences give input may ensure that the elements mentioned above (which are associated mainly with right brain preferences) are also included in the codes of conduct. The codes of conduct studied were, as mentioned before, inflexible, detailed and authoritative and could therefore be described as left brain dominant documents. As shown in the example quoted in 5.3.5.3 this is not necessarily a prerequisite for these documents. Without causing confusion or uncertainty, a measure of

flexibility, of give and take and of insight into different brain preferences could be incorporated into a school's Code of Conduct.

In chapter 6 final recommendations are made regarding the findings and conclusions of this study.

CHAPTER 6
Final Recommendations

6.1 INTRODUCTION

The purpose of this chapter is to summarise the findings of the research study, to make recommendations regarding the implications of brain dominance for school discipline and to make suggestions for further research. An interview with a legal authority regarding the findings and recommendations of the study will also be discussed here. This interview formed part of the triangulation process and was conducted after the formulation of the findings of the study in order to test the legal implications of the findings and suggestions.

Before making final recommendations, a summary of the research findings will be presented in the following paragraphs.

6.2 SUMMARY OF RESEARCH FINDINGS

In chapter 5 a comprehensive discussion of the qualitative research findings and conclusions were expounded. In the following paragraphs a concise summary of these qualitative findings and conclusions will be presented as well as a summary of the general research findings of this study.

6.2.1 An education law perspective on school discipline

Many educators are convinced they have lost control and that their authority in the classroom has been diminished. The negative perception of educators regarding school discipline at present seems to be the result, on the one hand of a perceived diminishing of respect by learners and on the other hand a diminishing of their control over learners. The overemphasis on the rights of learners are considered a major reason for indiscipline. Educators are obligated

to consider the implications of several legal documents which have a direct or indirect bearing on school discipline. The Bill of Rights for example places a strong emphasis on values such as equality, human dignity and freedom. The guidelines for the code of conduct (Department of Education Notice 776 of 1998) determines in section 4.1 that those rights, as spelt out in the Bill of Rights should be protected, promoted and fulfilled by the school.

The challenge for educators in South Africa today is therefore to find the balance between safeguarding the rights of their learners on the one hand and maintaining discipline on the other. Considering the differences (more specifically regarding brain dominance) between learners may be one answer to this problem and may diminish the need for stricter laws or fewer rights.

6.2.2 Brain dominance and learner discipline at school

The crux of the problem with discipline in South African schools today may very well be that educators have failed to understand the essence of the child-centred approach to education. Many have allowed this to work against them and have blamed indiscipline in schools on the fact that children have too many rights. Taking into account the brain dominance of learners and educators may be a solution to create a positive, emotionally healthy and whole brain environment where different types of thinkers are accommodated. When taking section 28 part (2) of the Bill of Rights into consideration, this approach may be essential in the classroom in order to establish an environment where "A child's best interests are of paramount importance in every matter concerning the child."

6.2.3 Qualitative research

A brief summary of the qualitative findings of this study will follow in the next paragraphs. The research paradigm was in most part constructivist-interpretive and the research strategy was phenomenology. The methods of data collection included interviews, observation and open-ended questionnaires.

6.2.3.1 Learners

It appeared that the more unruly learners and those that had most criticism for certain school rules, were strong right brain dominant learners. The traditional school rules and inflexible school environments are less likely to suit them, but are more suitable to left brain dominant learners who prefer structure and can be comfortable with authority. Right brain dominant learners are those generally punished more often for transgressions.

R2 dominant learners criticised educators the most for not allowing them to explain their behaviour and were generally more verbal than the other quadrant groups, expressing their emotions regarding unfairness of rules and treatment most often.

Right brain dominant learners, especially R1 dominant thinkers, complained most often about rules regarding hair and clothes.

6.2.3.2 Educators

Most educators were of the opinion that discipline is worsening in schools at present. It was mostly the left brain dominant educators who expressed preferences for the educator as authority figure and who longed for the days when stricter punishment (for example corporal punishment) could still be administered. It was mostly left brain dominant educators who indicated that they found it difficult to manage challenging learners. On the other hand it was mostly right brain dominant educators who found these learners interesting, even preferring them to those who "cannot think wider" (as one educator expressed this attitude during the cross-examination interview).

Some right brain dominant educators felt that some rules were too strict or out-dated. Both right and left brain dominant educators generally showed less tolerance for those learners that were not like them.

6.2.3.3 The Code of Conduct

The codes of conduct studied can be described as left brain dominant documents. They are authoritative, inflexible and detailed. They lack the flexibility

that would appeal to more right brain dominant learners and most do not include any form of encouragement or incentives that would lend a more right brain character to these documents.

Although stated in chapter 2 of the SASA that the Code of Conduct should involve the input from learners as well, this was not the case in most of the schools involved in this study. The conclusion made by the researcher was that the voices of the learners were mainly silent in these documents.

Taking these findings and conclusions into consideration, several recommendations are made in the following paragraphs. The recommendations will be formulated to address the problems identified in chapter 1 as those warranting research, viz.

- whether educators comprehend and apply Constitutional principles and other related legislation in their style of discipline,
- whether brain dominance of learners should be taken into account in legislation pertaining to the development of the code of conduct,
- how brain dominance of educators influence their approach to learner discipline in the classroom and
- how the brain dominance of learners affect their attitude towards the school's code of conduct and their resulting behaviour in class.

6.3 RECOMMENDATIONS

One aspect of the study focused on the possible insight of educators into Constitutional principles and legislation when dealing with indiscipline. The following are recommendations in this regard.

6.3.1 Legal determinants and discipline style

In chapter 1 the following problem was identified, viz "Do educators fully comprehend and apply the relevant principles from the Constitution and other education law determinants in their style of discipline?"

As mentioned in chapter 5 some educators may be in violation of several principles from the Constitution and of provisions in other legislation pertaining to education. These include section 9 of the Bill of Rights when they discriminate against certain learners that are not like them and section 16 of the Bill when they are infringing on the "freedom to receive or impart information or ideas" when not allowing learners to challenge or question information. Furthermore section 4(i) of the National Education Policy Act 27 of 1996 may be violated when they discourage independent and critical thought in stead of encouraging it. In chapter 2 of this study (2.2.1.2) many sections of the Bill of Rights were quoted which have a direct or indirect bearing on school discipline. These rights are summarised in s.28(2) as "A child's best interests are of paramount importance in every matter concerning the child."

It is therefore recommended that educators are fully informed of the principles of the Constitution and other relevant legislation and their relevance to styles of discipline. Educators need to comprehend the full impact of the National Education Policy Act 27 of 1996 when it states that the new education system will "contribute to the full personal development of each student" and that it will recognise "the aptitudes, abilities, interests, prior knowledge and experience of students". Education law determinants therefore acknowledge the fact that learners are unique individuals. Educators should follow suit and be made fully aware of the differences between learners and should take the different brain profiles of learners into account when judging behaviour and applying disciplinary measures. As discussed in chapter 3 (3.4.2) many researchers are convinced of the uniqueness of each learner's brain. Brain profiling is one tool at the disposal of educators to gain insight into this uniqueness of each learner. This insight could enable them to educate and to discipline in the spirit of all legislation pertaining to education which embraces the principle of "the best interest of the child".

6.3.2 Legislation and the brain dominance of learners

A second problem that was identified in chapter 1 is "What are the implications of differences in the *brain dominance of learners* for the drafting and implementation of legislation pertaining to learner discipline?"

The code of conduct as a legal document would normally not take differences into account and this very fact would be seen to support the notion of non-discrimination. As this research has shown though, a sector of the school (usually the left brain dominant learner and educator) accepts the document, the rules and processes. Another sector (usually the right brain dominant learner and some right brain dominant educators) questions some of the rules and the implementation of the code of conduct. It may therefore be said that such a document could be seen as discriminatory as it favours the thinking preferences of only certain individuals.

As demonstrated in chapter 5, it is possible to include a measure of flexibility in these documents and in the process develop a document that is more suitable to all the different brain dominant groups. It is therefore recommended that schools be encouraged to investigate the possibilities of balancing rigid and unbending rules with those where an element of flexibility exists. The contrast between these two types of rules was clearly demonstrated in the codes of conduct of the schools studied. "No jewellery may be worn. Tongue, nose or belly rings are strictly forbidden" was included in one of the codes while another school stated that "belly rings may not be visible and should be removed or covered during physical activities". The hair rules of most schools were unbending and forbade any colouring of hair while one school permitted colouring of hair on the understanding that the colour was one only one shade lighter or darker than the natural hair colour. Similar differences occurred with regard to hair accessories, hair styles, the use of cell phones and whether shoes were compulsory in summer.

It was also found that most of the codes of conduct did not include any form of encouragement or incentives for good behaviour. The researcher saw this as a major hiatus in these documents. Such incentives should gain the approval of all learners, but would especially appeal to right brain learners (notably R2 dominant) who thrive on acknowledgement and on "feeling good" about situations.

There are certainly areas of the content of these codes where differences cannot be taken into account and where flexibility would be impossible in the drafting of the document. Examples of these rules would be those regarding punctuality, serious transgressions such as drugs and weapons and certain clothes rules. On the other hand it should be quite possible to take differences into account in the implementation of many of these rules. This would call upon educators and principals to use their discretion and to differentiate without discrimination. The researcher sought answers to the legal implications of this discretion during an interview with a legal authority.

In an interview with Willem Esterhuizen (2005), an attorney, the researcher posed the question of whether discretion regarding the implementation of the code of conduct would be legal. His opinion was that the rules as noted in the document were legally binding and non-negotiable. He used the example of late-comers and explained that you can only be either late or not late. Once you arrive at school after a certain time, you have broken the rule. But, as with most legislation, the discretion lies within the consequences of the transgression and the punishment decided upon. Courts of law, according to Esterhuizen, take mitigating circumstances into account which would influence the resulting punishment. Many factors are taken into account before judgment is passed. Brain dominance, which has a strong influence on the behaviour of learners, could, in his opinion, be such a factor which should be considered. If it is consistently ignored, it could be discriminatory and not in the best interest of the child. The suggestion that brain preferences should be taken into account when

implementing the code of conduct was included in the interview schedule conducted with eight of the educators as part of the triangulation phase of the research. All eight thought it was a viable suggestion. Some additional comments included that educators should still be consistent even when taking differences into account and that they should be in possession of each learner's brain profile to be able to deal with each in the most effective way. This attitude of educators was encouraging.

Examples of how the brain dominance of learners can be taken into account when implementing the Code of Conduct, are more verbal warnings, incentives or counselling in stead of punishment for forgetting a book, for late arrivals or daydreaming in class (which would be transgressions committed more regularly by right brain dominant learners).

As was mentioned earlier, learners in most of the schools studied did not have any input in the codes of conduct of their schools. As mentioned in chapter 2 of this study (2.2.4) all learners have the right to participate in decision-making about matters affecting them at the school and the right to have their views heard about these matters. To ensure that the code of conduct reflects the input of all learners, it is recommended that learners from the whole brain (in other words learners representing all the quadrants of the brain) are involved in drawing up this document. The research showed a strong desire by especially right brain dominant learners to be heard and not to be ignored. Being involved in the process of drawing up the code of conduct of their school, may go a long way to making them feel an important part of the system and ensure buy in regarding the rules. As stated in chapter 2 (2.2.5) of this study, research on school discipline has shown that participation in the drafting of rules fosters responsibility, as opposed to blind obedience.

It has been stated that left as well as right brain dominant learners (and educators) should be involved in this process in order to gain a balance between

on the one hand the non-negotiable rules and processes and on the other hand the rules where flexibility can apply and the incentives and modes of encouragement that should form part of these documents. Selecting representatives from all four quadrants of the brain to be involved in the process of developing these documents, could achieve effective results. This recommendation was also included in the triangulation interview schedule and was once again met with the approval of the participating educators.

Recommendations regarding legislation and brain dominance can be summarised as follows:

- The Code of Conduct should be developed with input from learners and educators from all four quadrants of the brain.
- The Code of Conduct, as a legal document over which different role-players connected with the school have some influence, should take into account the different brain preferences of learners.
- This could be done by introducing a measure of flexibility where possible, by including incentives for good behaviour and by using discretion when implementing the code of conduct.

6.3.3 Learner discipline and educator brain dominance

A further problem stated in chapter 1 was "What are the implications of differences in the *brain dominance of educators* for their approach to learner discipline in the classroom and their implementation of schools' codes of conduct".

According to this study, it appears to be mainly right brain dominant learners who are struggling with certain elements of the code of conduct and class rules. Educators, especially those that are left brain dominant, generally do not have insight into why these learners act differently or appear to be disobedient. Should educators understand their own brain dominance and how this affects their behaviour and their attitude towards discipline and the behaviour of learners,

deeper understanding and a greater tolerance could very well be the result. As demonstrated in chapter 3 (3.4.1.1) the brain dominance of educators and therefore their behaviour and attitude towards the behaviour of learners can be vastly dissimilar. It is therefore recommended that educators gain insight into their own brain dominance and how this impacts on their disciplinary style. Learners should also understand the implications of differences in brain dominance. Knowing and applying this knowledge would also ensure that certain learners are not prejudiced by the attitude of educators towards matters of discipline. This knowledge would be crucial with regards to their attitude towards and how they deal with certain types of behaviour, for example challenging learners, emotional learners, learners who insist on stating their case and more talkative learners. The recommendation that educators should know their learners' brain profiles and apply this knowledge with regard to discipline was met with approval by left as well as right brain dominant educators during the cross-examination interviews.

6.3.4 Brain dominance and attitudes regarding discipline

The last problem identified in chapter 1 as warranting careful research was "What is the influence of the brain dominance of respectively learners and educators on learners' attitudes towards and perceptions of the implementation of schools' codes of conduct and their resulting behaviour in class?"

This problem has been dealt with in part in the previous sections. What is important to note is that this study has shown that many of the problems regarding discipline arise from the lack of understanding of different brain preferences and the resulting intolerance and unnecessary conflict between many educators and learners. Educators as well as learners could be more tolerant of other learners and educators when understanding the effect of their own brain preferences on their behaviour, on their attitude towards certain rules and on other role players in school. Armed with this knowledge educators would be aware that positive and caring encouragement would go a long way to

satisfying especially the R2 dominant learners. These learners mentioned numerous times that educators do not care about them which appeared to be an important reason why many of them start acting out. Educators with an insight into the influence of brain dominance on behaviour, will also be aware that R2 dominant individuals react positively to verbal and non-verbal cues of encouragement. They are sensitive to body language and facial expressions. Educators would also be able to use their understanding that L1 dominant learners have strong preferences to perform well and L2 learners have strong preferences to see an end-result, to encourage them in different ways. Furthermore, understanding these differences would equip educators to deal more effectively with challenging learners (mostly R1) and not encourage indiscipline by ignoring, insulting or belittling learners who have a questioning nature. The same could be said for learners who are more prone to react in emotional ways (usually R2), those that are less likely to experiment with new methods and could resist trying (usually L2) and those learners who can be obstinate when it comes to knowing the right answer and could try to control others (often L1).

One insight that the researcher has gained from this research study on brain dominance and discipline is that education psychology and education law need to join hands in order to make effective breakthroughs in this regard. This became especially clear when the researcher formulated recommendations on how educators could minimise indiscipline in the classroom when armed with the knowledge of brain dominance. A possible solution that came to mind, was that educators who understood their learners well as far as brain dominance is concerned, would expect certain behaviour from learners and could therefore pre-empt possible undisciplined behaviour. Examples of how this could be done are the following.

- Instead of consistently giving learners tasks that take a long time to complete, a variety of activities are given in class to prevent boredom

(especially by R1 learners), without causing chaos and a lack of structure (in order to accommodate the left brain dominant learners).

- When learners are working in groups, an educator would allow a certain amount of talking (for R2 learners to "get it out of their system"), ensuring that feedback of the results of the discussions are given (so that left brain dominant learners feel they are working towards a result).
- An educator would regularly create opportunities for role-play and for acting as teacher instead of only asking questions to test knowledge (preferred by especially right brain dominant learners).
- To accommodate challenging and questioning learners, opportunities for debate, for constructive arguments and for comments on the work discussed should be created on a regular basis.

Another recommendation concerns principals who are important role-players in the implementation of the Code of Conduct. Principals would have to be aware of why certain learners are always in trouble and whether it is the result of a conflict between the brain dominance of the learner and that of the educator. Before a course of punishment is followed, it would be more effective to interview both parties, explaining how these differences can result in conflict and how the understanding of the brain dominance of others can lead to tolerance and therefore to respect and to greater discipline. A learner with very strong R1 preferences and an educator with very strong L1 preferences for example could very well have a very strained relationship. A case study in this regard was discussed in chapter 3 (3.4.1.2). A well informed principal would be able to identify the differences in brain dominance as a main cause of the problem and through counselling create a better understanding between the two parties. Although it appeared as if discipline was generally better (or that educators had more control) in primary schools than in secondary schools, it was clear in especially the primary schools in cities that indiscipline was a cause of great concern. As the brain profiles of learners as young as 11 years of age can be plotted, this approach could be effective for especially grades six and seven.

These are the groups that primary school educators complained about the most regarding indiscipline.

The recommendation that a greater tolerance can be established in the classroom which could result in better discipline if educators and learners know each other's brain profile, was included for comment in the cross-examination interview schedule. One participant remarked that since she has become aware of these differences, she has changed her attitude (Afr. "is ek anders ingestel teenoor") towards her learners and has experienced a positive affect. The recommended activities to pre-empt indiscipline in class as mentioned above, was also seen in a positive light by these educators. One right brain dominant educator added that educators would have to be taught more strategies to enable them to do this and another that it should be seen to that certain individuals do not "get lost" in the class environment but that a whole-brain environment should be created. A left brain dominant educator who also agreed that these pre-emptive activities could work, remarked that educators should still maintain discipline (Afr. "hulle moet nie agteroor sit nie"). These comments are very encouraging and show an openness on the part of educators to try a new approach to the problem of indiscipline.

6.4 RECOMMENDATIONS FOR FURTHER RESEARCH

Because of the results of this research which showed a very strong link between brain dominance and attitudes and perceptions regarding discipline, further research into how a whole brain approach can be encouraged and implemented in schools in order to improve discipline and ensure non-discrimination in the treatment of and attitude towards all learners, is recommended.

Although several possible research themes have been mentioned in the study, the following are further suggestions for research:

- What are the implications of brain dominance of educators, learners and law makers on existing and future legislation pertaining to learner behaviour?
- What are the implications of differences in the brain dominance of learners when establishing a safe learning environment?
- What are the implications of differences between the brain dominance of educators and learners as it pertains to the *in loco parentis* role of the educator?

"Laws and institutions must go hand in hand with the progress of the human mind".

Thomas Jefferson (1743-1826)

ADDENDA

ADDENDUM A. THE NEETHLING BRAIN INSTRUMENT

1. General information

For this research the Neethling Brain Preference Profile (referred to henceforth as the NBPP) has been used as the assessment instrument to determine the brain dominance of the respondents. The NBPP was developed after extensive international research since 1980 on left/right brain functions. Neethling (Neethling, 2003b) under the research guidance of Torrance, first developed the NBPP and then a number of other whole brain instruments.

The NBPP identifies the thinking preferences of the individual. This instrument is a descriptive, objective analysis of the individual's thinking choices, with no profile being better or worse than another. It is therefore non-judgemental, giving a description of an individual's thought preferences and making recommendations based on those. The profile indicates the dominant preference areas, as well as the average and low preference quadrants. The total score of every profile is 300 and an individual's profile is evaluated in categories and not according to exact scores. These categories are as follows:

95+ Very high preference
80-94 High preference
65-79 Average preference
50-64 Low preference
-50 Very low preference

2. The quadrant summary

The following is a summary of the key thinking processes associated with each of the four quadrants:

Top left quadrant (L1)	
Focused approach	Concrete
Essence	Mathematical
Precision	Financial
Accuracy	Performance-driven
Factual reasoning	Measuring
Logic	Important to do it right
Objective/realistic	Critical (of others/self)
Diagnostic	Rational
Analysing (digging deeper)	Factual memory
No nonsense approach	Goal oriented
Bottom left quadrant (L2)	
Planning	Tradition
Practical application	Procedures
Organisation	Routine
Promptness	Rules and regulations
Discipline	Structure
Dedication	Orthodox
Step-by-step approach	Following guidelines
Details	Task-driven
Operational	Result-driven
Tidiness	Safety-conscious
Dependable	Chronological

Top right quadrant (R1)	
Search for alternatives	Big picture
Idea-intuition	Strategy
Synthesis	Integration
Risk	Restless
Experimenting	Diversity
Comfortable with chaos	Unstructured
Fantasy	Surprise
Association	Curious
Flexible	Doing many things at once
Change	Speculation
Artistic	Experimentation
Looking for alternatives	Investigating
Bottom right (R2)	
Feeling orientated	Empathy
Social liaison	People-environment
Interaction	People-intuition
Co-operation seeking	Atmosphere of caring
Body language	Touch
Passion	Communication
Listening focus	Ambiance
Sensitivity	Playful
Participative	Supportive
Expressive	Enthusiasm
Team/group orientated	Music (emotional experience)

3. Example of a NBP report

The following is an example of the computer print-out of a NBPP report. The consultant could make further deductions and recommendations.

The candidate's quadrant scores are as follows:

R1 = 114

R2 = 81

L1 = 58

L2 = 47

Quadrant: R1 – 114 = Very high preference

Candidate shows a very strong preference for holistic, conceptual, original, spatial and metaphoric thinking processes.

Candidate prefers working in an environment that is free from routine, where she is able to strategise and act independently. She is constantly looking for alternatives and is likely to challenge the status quo, eager to experiment with new ideas and concepts. Being big-picture oriented, candidate prefers not to get caught up in detail and repetitive tasks, which she sees as boring and senseless. She likes diversity and flexibility, and enjoys doing more than one thing at a time. She will often function comfortably in an environment which others might describe as chaotic. Candidate will often fantasise, is risk-prone and restless, and prefers a frequently changing environment that brings constant challenges and surprise. She often takes the initiative and prefers becoming actively involved. She is constantly looking for hidden possibilities and is quite future oriented. Candidate may be able to put ideas and information together to come up with something new.

Quadrant: R2 – 81 = High Preference Candidate's brain profile shows a strong preference for people orientation. She also has a high preference for processes such as co-operation, diplomacy and communication. She enjoys frequent contact with others, enthusiastically sharing ideas and concepts. Her communication style will tend to be informal and friendly, making use of body language, stories and imagery. Candidate will be comfortable communication, advising, showing empathy, assisting and liaising.
Quadrant: L1 – 58 = Low preference It is unlikely that candidate will enjoy activities that call for objective analysis, precision and logical diagnosis on an ongoing basis. She will most probably not be comfortable in an environment that requires factual memorisation, quantification and objectivity in decision-making.
Quadrant: L2 – 47 – Very low preference Candidate is likely to avoid activities that call for ongoing step-by-step planning and implementation. She will most probably be uncomfortable in an environment that requires attention to detail, working strictly within set procedures and implementing controls and regulations. In order for her to stay passionate about her job, such environments should be avoided as far as possible.

Neethling (2003a) makes it clear that the Neethling Brain Instrument does not measure skills or abilities necessary to execute the preferences indicated. Somebody may therefore have strong preferences for planning and organisation, but have not had the opportunity to develop these skills. On the other hand somebody may have excellent skills to be a banker for example, but because the

preferences for these processes and activities are low, it may be difficult to maintain passion for such a career.

4. Validity and reliability of the Neethling Brain Instrument

As the NBPP is critical in the assessment of subjects and their thinking preferences, a brief overview of the validity study seems appropriate. The study was undertaken by dr. Liezel Korf, registered research psychologist and psychometrist during 2003 and will be updated at regular intervals (Neethling, 2003a). The ipsative nature of the NBPP (the fact that all scores add up to the same total) makes it unsuitable for some traditional measures of reliability and validity, such as internal consistency measures of the total scale or exploratory factor analysis. However, the following analyses can be done to investigate the psychometric integrity of the scale.

- Test-retest reliability of the subscales.
- Criterion related validity: if the scale correlates in the theoretically expected directions with proven measures of similar attributes.
- Internal consistency of the four subscales (i.e. the 4-point ordinal scale is treated as a small continuous scale in order to calculate item-total correlations and Alpha coefficients.) This cannot be done for the whole scale, since there is not variance in the total score.
- Discriminant validity: if the scale discriminated between groups it is theoretically and intuitively expected to discriminate between, this serves as support for the construct validity of the scale.

The results of this analyses are described in the following paragraphs.

4.1 Test-retest reliability

The reliability coefficients for the scales were as follows:

L1 0,851

L2 0,840

R1 0,867

R2 0,918

These are well within acceptable limits for this type of measure.

4.2 Criterion-related validity

Theoretically, the scores of the NBPP (referred to here as NBI, the registered trade name of the Neethling instruments) and the MBTI are expected to correlate in the following ways:

			MBTI Scales					
NBI	**E**	**I**	**S**	**N**	**T**	**F**	**J**	**P**
L1	Slightly negative	Slightly positive	Positive	Negative	Positive	Negative	Positive	Negative
L2	---	---	Strong Positive	Strong Negative	Positive	Negative	Positive	Negative
R2	---	---	---	---	Strong Negative	Strong Positive	Slightly Negative	Slightly Positive
R1	Slightly positive	Slightly negative	Negative	Positive	---	---	Negative	Positive

The theoretical expectations were all fulfilled in the predicted directions and with statistically significant correlations.

4.3 Internal consistency

The majority of options showed clear positive correlations within an acceptable range (.0,20) with the scale total with which it is associated. The values (L1: 0,6812; L2: 0,7459; R1: 0,8209; R2: 0,7734) are within acceptable limits, especially given the small range of the scale from which they were computed.

4.4 Discriminability

4.4.1 Gender

Significant differences were found between males and females on all four scales. The differences seem to support the traditional and somewhat stereotypical brain profile of males and females respectively. Males score significantly higher

on L1 and R1, which are the quadrants associated with more conceptual, analytical and strategic thinking. Females scored higher on the more perceptual quadrants, namely R2 and L2, representing more meticulous attention to detail and a greater emotional sensitivity.

4.4.2 Occupation

Respondents indicated their occupation with varying degrees of accuracy of description.

Occupational categories were merged on the basis of similarity in the core skills it involves as well as in accordance with theoretical expectations of occupations which would require similar thinking styles. The seven groupings considered were administrative/control; analytical/scientific; human contact; management/strategic; art/writing; marketing; practical.

The results showed that the theoretical and intuitive expectations one might have about the occupational categories were supported.

In conclusion, the researcher found that the results presented seem to give fairly strong support for both the validity and reliability of the NBI.

ADDENDUM B: THE INTERVIEW SCHEDULES

Educators and learners were interviewed using an open-ended interview schedule. These schedules are provided here.

1. The interview schedule used for educators

1. Which transgression irritates you most?
2. Which type of behaviour of learners causes you most frustration?
3. What style of punishment do you find most comfortable?
4. Do you know the Code of Conduct?
5. Which element of the Code of Conduct/ school rules would you most like to change?
6. Which rule would you like to add to the school rules?
7. Which school rules do you think should be abolished?
8. What is your opinion regarding the educator as the authoritative person in the class?
9. What is your opinion on punishment for untidy work and bad handwriting?
10. Do you punish learners for books, homework etc. which is forgotten?
11. How do you handle learners who show emotion regarding lesson content or other aspects in class?
12. How do you handle learners who always seem to want to do things differently/ question the status quo/challenge?
13. Do you agree that learners and parents should be involved in drawing up school rules?
14. What is your opinion on corporal punishment?
15. What is your general view on discipline in schools today?
16. What saying do you subscribe to:
    - Save the rod and spoil the child
    - A kind word goes a long way
    - Children should be seen and not heard
    - It takes all kinds to make the world

2. The interview schedule used for learners

Learners were interviewed in focus groups using the following interview schedule.

1. What do you get punished for most in class?
2. What type of punishment do you dislike most?
3. If you could choose, what type of punishment would you prefer?
4. If you could, which school/class rule would you like to change most?
5. Which teacher's style of punishment do you like best and why?
6. Which school/class rule would you like to add to the list?
7. What do you consider unfair punishment/ discipline?
8. What behaviour of other learners do you dislike most?
9. What punishment/discipline do you think works best and why?
10. If you were a teacher, how would you make sure your pupils behaved?
11. What element of punishment in class makes you feel worst?
12. What do you think of discipline in schools today?
13. Which of the following punishments would you prefer:
    - Writing out a few pages
    - Going to detention
    - Cleaning up the school grounds
    - Delivering a speech/ Performing in front of the class

3. The triangulation interview schedule

THE ROLE OF BRAIN DOMINANCE IN THE MAINTANANCE OF CLASS DISCIPLINE

What are your comments on the following findings of this study?:

1. Learners with left brain dominant preferences are more likely to obey school and class rules.

2. R2 dominant learners are the most critical of educators and many feel educators do not care about them and do not listen to them.

3. Many right brain dominant learners (R1 especially) feel certain rules (regarding clothes, hair etc.) are unnecessary or too strict.

4. Learners and educators generally thought discipline is worse than it was in the past.

What are your comments on the following recommendations of this study?:

5. If educator and learners know their own and each other's brain profile, a greater tolerance will be established in the classroom.

6. When an educator knows the different brain dominance in the classroom, he/she can pre-empt indiscipline by a variety of activities (R1), role play, act as teacher (R1, R2), group work where they are allowed to talk.

7. Learners should have an input into the development of the code of conduct and air their views (a greater buy-in as a result)

8. Educators and learners (probably representatives from each of the brain dominant groups) should regularly discuss the code of conduct, examples of indiscipline and how to deal with these in a whole brain way

9. The implementation of the code of conduct should take brain differences into account (in other words how to deal with indiscipline)

10. It should be investigated how existing legislation can be adapted to include differences regarding brain preferences and therefore behaviour.

11 Principals should be informed about differences between educator & learner regarding brain preferences and use this knowledge when dealing with indiscipline (indiscipline may be the result of differing perceptions and preferences).

ADDENDUM C: THE OPEN-ENDED QUESTIONNAIRE

Learners were given the following short questionnaire to fill in.

Answer the following questions honestly and express your personal opinion:

1. What behaviour of other learners irritate you the most?
2. If you were teacher, which punishment would you hand out most?
3. What school rule(s) do you consider unnecessary?
4. What would you describe as unfair punishment at school?

ADDENDUM D: AN EXAMPLE OF A LETTER OF PERMISSION TO CONDUCT THIS RESEARCH

Mrs Rachè Rutherford
32 Berghshoop
DURBANVILLE
7550

Dear Mrs R. Rutherford

RESEARCH PROPOSAL: THE ROLE OF BRAIN DOMINANCE IN SCHOOL DISCIPLINE.

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **23rd February 2005 to 31st May 2005.**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December 2005).
7. Should you wish to extend the period of your survey, please contact Dr R. Cornelissen at the contact numbers above quoting the reference number.
8. A photocopy of this letter is submitted to the Principal where the intended research is to be conducted.
9. Your research will be limited to the following schools: **Durbanville Preparatory, Porterville High, Worcester Primary and Eversdal Primary**.
10. A brief summary of the content, findings and recommendations is provided to the Director: Education Research.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

The Director: Education Research
Western Cape Education Department
Private Bag X9114
CAPE TOWN
8000

We wish you success in your research.

Kind regards.

Signed: Ronald S. Cornelissen
for: **HEAD: EDUCATION**
DATE: 23rd February 2005

ADDENDUM E: PARTICIPATING SCHOOLS

The researcher would like to thank the following schools for their participation in this research:

Werda Hoërskool

Porterville Hoërskool

Ferdinand Postma Hoërskool

Menlo Park Laerskool

Loreto Convent School

Eversdal Primary School

Worcester-Noord Laerskool

Durbanville Preparatory School

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