

CHAPTER 3

THE COGNITIVE TEACHING STYLE MODEL

3.1 Introduction

The following is a quote from page 22 of the *White paper on education and training* issued on 15 March 1995:

“The curriculum, teaching methods and text books at all levels and in all programmes of education and training, should encourage *independent* and *critical* thought, the capacity to question, enquire, reason, weigh evidence and form judgements, achieve understanding, recognise the provisional and incomplete nature of most human knowledge, and communicate clearly.”

In the booklet called Curriculum 2005 produced by the Media in Educational Trust in 1997 and distributed widely to promote Outcomes Based Education and the New National Curriculum the following information was provided.

A new way of looking at how learning takes place. We learn best when we:

- do things
- discover
- have fun
- communicate
- are not afraid of failing
- feel good about ourselves

A new way of looking at teachers:

- as facilitators
- assessing learners to help them improve
- nurturing and supporting
- working in a team
- guiding learning not transmitting knowledge.

In the Revised National Curriculum Statement presented in 2002 the following quotes can be found:

1. “The Revised National Curriculum Statement aims at the development of a high level of knowledge and skills. This is part of the goal to achieve social justice, equity and development. Social justice requires that those sections of the population previously disempowered by lack of knowledge and skills should be empowered by it. If social justice is to be achieved, then the curriculum needs to be structured and designed in such a way that all, and especially those with special needs and least resources and skills, are empowered by it” (2001, p.19).

2. “The critical outcomes are intended to enable school-goers to:
 - Communicate effectively using visual, mathematical and language skills.
 - Identify and solve problems by using creative and critical thinking.
 - Organise and manage activities responsibility and effectively.
 - Work effectively with others in a team, group, organization and community.
 - Collect, analyse, organise and critically evaluate information.
 - Use science and technology effectively and critically, showing responsibility towards the environment and the health of others.
 - Understand that the world is a set of related systems.”

These references imply and call for teaching and learning which will develop the thinking, cooperative and communicative ability of all students but especially those who have suffered the most disadvantage. It is also a call for competent, articulate, confident and well adjusted students as well as teachers who see their role differently from that of the past. It is the same voice which the Centre recognized back in the late 80's and which it tried explicitly to answer through the development of a cognitive and affective teaching style model. It is also an aim which I have been trying to achieve since I began teaching.

What follows is a summary of the elements which constitute the essence of my personal and the Centre's cognitive teaching style model. These individual elements were developed from my own experience, the communal experience of the Centre's staff and many developmental workshops, internal conferences and discussions held at its offices over the years. Figure 3.1 shows how I have collected and summarised these parts into an overall model. It was from this model that I have selected aspects to apply to the teaching of the street children in a school

(Harper, 1994).

The aim of those who use the model is to develop a community of competent, articulate, well adjusted and thinking learners. The size of this community will depend on how widespread its application is spread. It is my experience that the generic and flexible nature of the model allows it to be applied to the teaching of different subjects, across classes and in junior and senior primary and high schools. It has also been applied over a wide range of school districts. It is my belief that it will also be very suitable for use with the difficult task of reintegrating street children into formal education.

If the intention of the model is to create a community of confident, articulate, well adjusted and thinking learners, then it is necessary to consciously and deliberately teach to develop thinking in a way that will encourage confidence and verbal skills as well. We believe that three components are necessary to achieve this objective.

1. Implicitly teaching FOR thinking using a cognitive teaching style.
2. Explicitly teaching ABOUT thinking by including the direct teaching of cognitive skills, strategies and processes.
3. Creating a suitable teacher/child relationship and classroom atmosphere where thinking is encouraged and valued.

This thesis will concern itself with the first and third points above. .

3.2 The cognitive teaching style model

3.2.1 A definition of the model

In the Centre's *Cognitive Teaching Style: Presenter's manual* (1995, p.7) the following definition appears:

“A cognitive teaching style is an interaction between the teacher and learner whereby the teacher facilitates the thinking of the learner, the construction of understanding and knowledge, the transfer of the knowledge into the learner's life world and the development of a positive self-concept.”

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3.2.2 The emerging theory of the model

Broadly speaking the model depicted in Figure 3.1 falls into the epistemological paradigm of Constructivism. However, to the pure individualistic Piagetian perspective we have added the social aspect of interaction and cooperation and included the further dimension of peer and teacher mediation. I have labelled the paradigm of the model “mediated social constructivism.”

The model is student-centred in essence and advocates an active modification approach to cognitive development as opposed to a passive acceptance one. It acknowledges the essential role that language plays in effective learning, the crucial place that a genuine relationship between teacher and student has, and the importance that a caring and supportive environment plays.

3.2.3 How the learners are viewed by the teacher in the model

The approach adopts a positive and optimistic view of children’s potential. Children are seen as individually unique, naturally curious, resourceful, imaginative, intuitive and inwardly motivated. Children need to be respected and trusted. This view will be especially important when dealing with street children who have already expressed these characteristics during their life on the streets.

3.2.4 The role of the teacher

The teacher’s role shifts from one of an authoritarian transmitter of knowledge to more of a mediator, facilitator, establisher of an empathetic and congruent relationship with the learners and organiser of the learning environment. Here we draw on Piaget, Feuerstein, Vygotsky, Bruner and Rogers. However, this does not mean that more direct methods such as reception learning and expository teaching, informing, explaining, demonstrating or telling if the situation or nature of the material requires it, are excluded. It does mean that the teacher needs to be sensitive to the needs of the pupils, their different learning styles and the intentionality of the lesson so that cognitive growth and a positive self-concept are developed.

3.2.5 The personal qualities needed by the teacher

To allow pupils to learn, the teacher needs to communicate genuinely with them and through empathic understanding be able to comprehend what the learners are experiencing in the classroom. He needs to refrain from the temptation to teach in an authoritarian way and rather

adopt a style that is significant, interesting and meaningful for the children who are learning. He needs to risk being himself in the teaching and learning situation, ferret out the interests of the learners and unleash their curiosity and creativity.

Teachers need to recognise the significant role that the development of the self-concept and therefore self-image and self-esteem plays in successful learning and the advancement of cognitive growth. Through the use of genuine praise, encouragement, motivational incentives and success experiences, the teacher provides the affirmation to build the pupils' positive self-regard and self-concept. It is imperative for the teacher to realise that in the interactive style proposed by this model, emotional mediation which involves connecting and relating to pupils, is as important as the more clinical and technical cognitive mediation embodied in the various teaching techniques. Congruency and a sense of genuineness between who the teacher is and what he does, is vital. Real concern for the children as individuals and the appreciation of their success and progress will need to be conveyed to them in a way that is true and authentic. Lack of progress and setbacks will have to be dealt with with empathy and sensitivity. This special relationship between the teacher and student needs to be supported in general by all teachers in the school and not be limited to one classroom otherwise much good that has been achieved can be constantly undone by others. A real challenge will be to try to encourage other members of staff at the school to attempt to adopt and achieve it. It must be emphasised again that this aspect of the model is crucial and is the cornerstone and platform on which the rest of it is based. It is my opinion that with street children it is this area of the model that will be of critical importance. Again Rogers informs this part of the model.

3.2.6 The teaching methods used in the model

3.2.6.1 Cognitive questioning

The cognitive teaching style model makes use of a cognitive questioning approach whereby the teacher guides the learners through the interaction with the aim of helping students to construct predetermined intentions. The process can be done with the whole of the class, groups, pairs or on a one to one basis. This mediated questioning process has its roots in the theories of Feuerstein and Vygotsky.

At this point it is necessary to clarify the concept of intentionality as this is the guiding force that

drives and directs the teacher's questioning sequence and determines how the responses of the students are dealt with. The intentionality of the lesson represents what the teacher wants the learners to gain or know from the lesson. The intentionality may be cognitive, content, skills, affective or social in nature or could be a combination of all or some of them. Intentionality differs from the conventional aims and objectives of lessons in that it contains within it the concept of reciprocity. Reciprocity includes the need for students to share in the goals and purposes of the learning experience. To achieve this mutual motivation and to capture the interest of the students, use is often made of a 'hook-in' activity. These activities could involve a situation of dissonance of some kind, the learners' natural curiosity, their in-built inquisitiveness or purely their delightful sense of fun. The source or origin of the activity could be verbal, visual, concrete or aural.

Cognitive questioning involves not merely a random selection of questions around a chosen topic but a process which is carefully structured in two ways. On the one hand it includes the preparation of key predetermined questions to guide the process and logical flow of conceptual development and, on the other hand, the spontaneous adaption and accommodation of responses both expected and unexpected which are received from students.

Grossman's (1994) analysis and summary of this questioning style reveals the following basic framework and types of cognitive questions in its application.

Focussing questions and statements

These are used to direct the attention of the learners to specific aspects and relevant issues. Illustrations of these types of questions are: What is this? Look at this part of the sketch. What am I doing now? Focussing questions and statements are normally closed in that they have only one correct answer.

Understanding and thinking questions

These questions are aimed to develop thinking, probe for cognitive insight, allow for creative solutions and to assist in the construction of meaning by the learners. Examples of these types of questions are: What do you think about this? What is happening here? How does this compare to that? Explain why this has happened? They provide the opportunity for the students to exert

their private options and opinions, they force thinking, the use of private language and they expose understanding or the lack of it. By their nature they are in most instances open and therefore, if an accepting classroom ambience is present, encourage risk-taking by the students and therefore generate many and varied responses from them. The responses also create the opportunity for teachers to provide accurate and genuine affirmation and so encourage the development of a positive self-concept in students. If the self-concept of the learners and content integrity of the lesson is to be encouraged and maintained, then the dealing with incorrect responses to all types of questions asked, is of vital importance. The following suggestions represent some ways of handling inaccurate or wrong answers:

- Feign a lack of understanding and ask: Please explain ... I don't understand. Can you run that by me again?
- Rephrase the question or provide guiding clues, hints, cues or indications.

Summarising statements

These statements are used at various points in the lesson to summarise the intended content, capture concisely and correctly the students' thinking and make explicit the metacognitive aspects of the learning process. The summaries can be done by the teacher or the learners. Statements of this type could be: "So what we have discovered up to this point is ... So to solve this problem you had to categorize these substances. It is therefore important to spend some time thinking about a problem before we rush in and try our first idea."

Transfer questions

Questions of this type are used to check whether the learner understands the intended concepts, is able to connect ideas to a general principle and therefore is able to use and transfer the knowledge into his own life experience. Questions like the following fall into this category: "Where else do you find ...? Can you give other examples?" In most cases transfer questions are open questions.

3.2.6.2 Cooperative learning

Because of the importance that social interaction with peers and more competent individuals plays in learning and intellectual development, cooperative learning becomes an important option or tool to be used, when appropriate, in a cognitive teaching style. This approach draws heavily on the social learning ideas of Vygotsky.

A definition of cooperative learning

In the presenter's manual of the CCD (1995, Day 8, Input 8.1, p.2) cooperative learning is described as follows:

“Cooperative learning can be seen as groups of pupils collaborating to construct knowledge together. It is based on positive interdependence amongst the learners which involves the sharing of ideas, knowledge, skills, thinking, responsibility and work. It is a structured and managed process which requires: organisation of the class; the teaching of cooperative skills to pupils, the allocation of group roles, group and individual accountability and the teacher's control of the process. It does not merely mean children sitting around tables in groups doing individual tasks in silence.”

Classroom organisation for cooperative learning

There are different ways in which cooperative learning can be organised:

- After the teacher has introduced the topic to the class as a whole, all groups are given identical tasks to do simultaneously.
- After the teacher has introduced the topic to the whole class, different aspects of the subject are given to different groups to do simultaneously.
- The teacher can work with one group at a time while the remainder of the groups work independently on preparatory, reinforcement or extension tasks.

In general situations I believe that groups should be heterogeneous in terms of ability with the optimal size of around six pupils. However, these guidelines might have to be flexible in specific situations.

The skills learners need to have for successful cooperative learning

For learners to work successfully together the following are some of the personal skills that need to be in place or be taught to the learners:

- Learners should be able to listen to each other.
- Learners should trust each other and value all contributions.
- Learners should be prepared to compromise for better ideas or solutions.

- Learners should be prepared to contribute.
- Learners should be able to share.
- Learners should not dominate the group excessively.
- Learners should follow the agreed rules.

In terms of the independence, freedom and the fight for individual survival that street children have experienced many of the above skills could very well be difficult for them to accept and practice successfully. Time will have to be invested in training.

Learners' roles in cooperative learning

To ensure that all students contribute, alternating roles need to be given to individual group members. These roles could include those of leader, writer, artist, presenter, worker or materials handler. It is important that these roles do not merely become labels but that the meaning of each and the behaviour expected is understood and practised within the group.

The teacher's role in cooperative learning

While the students are working on cooperative tasks it is the role of the teacher to circulate amongst the groups and, through the use of mediative questions and suggestions, ensure that the process keeps on track, that deadlocks are broken, discipline maintained and problems solved.

Tasks for learners in cooperative learning

Crucial to the success of cooperative learning is the selection of the tasks to be completed by the groups. The tasks should be designed to contribute to the achievement of the intentionality of the lesson, they should be planned to encourage cooperation between learners and be such that they promote thinking, worthwhile learning and be cognitively challenging. Here the concept of the zone of proximal development of Vigotsky is important. They should not be merely activities to keep the pupils busy. Instructions explaining what needs to be done to complete the task correctly should be precise and clearly understood by all. Tasks should concentrate on the construction, creation or transformation of information rather than its mere reproduction. Time limits and deadlines should be set for their completion. Public feedback is useful to establish a sense of purpose for the cooperative learning, to provide meaning and worth to the exercise and to make group knowledge class or school knowledge.

3.2.6.3 The use of language for communication and understanding

If the construction of knowledge is to take place through an interactive process, whether in the form of cognitive questioning, cooperative learning or more direct methods, language competency plays a critical role. This operates from the point of view of the teacher as well as the child. McDonald and Burroughs (1991, p. 31) state that “children’s thinking develops most quickly and easily in their first language.” Having to work in an unfamiliar language places severe limits on the development of pupils’ thinking and creative skills. This can be as a result of the teacher’s lack of language competence or confidence, or the children’s limited knowledge of the language or both. On the other hand competence in the primary language allows children to risk their opinions and to talk about their interests, needs and thoughts. Once students are competent mentally in their primary language, they are capable of transferring their skills and knowledge into the second language fairly easily. McDonald and Burroughs (1991) stress that success in second language programmes seems to be dependant on success in the children’s primary language.

The serious question which arises for the South African black context, especially after standard two where English becomes the medium of instruction, is whether initial concept formation and thinking is desirable or even possible if done in a second or third language. In most cases the verbal ability of street children in English is very limited and their written ability in the language even more restrictive. It also raises difficulties for the cognitive teaching style because it relies heavily on verbal interaction. How can a teacher question students effectively or merely communicate with them if either of them do not possess enough passive or active competency, or the necessary confidence in the language of instruction to do so easily?

Putting these reservations aside, students are encouraged to talk about, write about, apply and transfer what they have learnt through the use of cognitive questioning and cooperative learning. This is done for two main reasons:

Developing the ability to communicate effectively

For pupils to learn to communicate well they need to be given the time and space to do so. Sitting passively and listening are not conducive to the development of these skills. It is

therefore necessary for teachers to create social opportunities in the form of cognitive questioning, cooperative learning tasks or other collaborative activities, where talking and writing form an integral part of what the students do. In the majority of South African black schools English after standard two, is the official medium of instruction. In most cases it is a second or even third language for both teachers and students. If an acceptable level of communication competency is to be achieved in English with these learners, it cannot be accomplished sufficiently within the English periods or left to happen outside the school. All subjects including Science lessons therefore need to become language lessons as well. A policy of “language across the curriculum” needs to be introduced into the schools and taken seriously by all teachers. Without communicative competency, cognitive development is hampered.

Language for understanding

Learners construct their understanding of concepts through language; first through an internal monologue, then verbally, and finally in writing. After doing, observing, reading or listening they build mental pictures or images of what they have experienced. By talking about these ideas to others they attempt to clarify their own understanding and in the process often help to clarify the understanding of others. This is preferably done in the form of a pair dialogue or in a group situation. Subsequent attempts at explanation or retelling help to make the concepts clearer and provide a deeper understanding for both speaker and listener. Because the written form of language is more disciplined, structured and cognitive, getting pupils to write down their understanding provides them with an even deeper insight. The language demands that the written word makes on learners is substantial, especially if the medium being used is a second or third language. This is particularly so if the subject matter is more than just narrative in nature. Expository writing such as is needed in subjects like Physical Science, Geography, History and Biology requires a different style, format and a more technical vocabulary. This makes this kind of writing even more taxing and difficult. In these instances it is often useful to scaffold or frame the writing of the pupils through the use of leading, structured and interactive worksheets which can also serve the purpose of recording the lessons for the future.

From the teacher’s point of view both verbal and written explanations, descriptions, answers and reasons provided by the students can provide valuable access into their thinking and

understanding. It can be seen from the above paragraphs that this language aspect learning, incorporates many of Vygotsky's ideas.

3.2.6.4 The development of metacognitive abilities

In terms of the CCD's model, metacognition is seen to be the ability of students to initiate, plan, monitor, control and evaluate their own thinking. By making learners aware of their and others thinking, and by providing practical ways of self-regulating it before, during and after tasks over a period of time, students hopefully will begin to apply these metacognitive abilities spontaneously and automatically.

The technique used to get learners to use this metacognitive ability is through the conscious use of "self talk" or inner speech in the form of self-directed questions and statements. It represents the private conversation we have with ourselves when we approach problems or when we cannot solve them by intuition. For example in the process of being taught how to approach the solving of Scientific or Mathematical problems, students could be taught to "talk" to themselves initially aloud and then silently, through a problem-solving process using metacognitive questions and statements such as the following:

- Before: Let me not rush into this problem.
 Let me stop and think first.
 What am I asked to do or find here?
 What information am I given?
 What other information is "behind" what I am given?
 What should I do first?
 Will a drawing or a model help me?
- During: Is this plan of mine working?
 This method is not working. Let me try another.
 This way is too difficult and is taking me too long.
 Isn't there a shorter way?
 Have I left anything out?
 Am I working systematically?
- After: Does this answer look right?
 Have I answered what I was asked?

Have I left anything out?

Would I do it the same way again?

Should I check the answer by using another method?

3.3 Conclusion

The purpose of this chapter has been to operationalise the theoretical ideas of the theorists discussed in chapter two and a number of other educational thinkers into a generic, practical and user friendly cognitive teaching style model which is flexible enough to be used across a wide range of school levels and subjects. The primary aim of the model is to develop confident, articulate, well adjusted and thinking learners in the classroom through the use of a cognitive, interactive teaching and learning style in a supportive atmosphere and environment. This teaching style promotes the conscious teaching for thinking using a combination of cognitive questioning and cooperative learning as well as the more traditional methods of demonstration and explanation. It recognises the crucial role that language plays in learning and requires a warm, encouraging and supportive environment to be effectively applied. The strengths of the model lie in its strong theoretical base, its cognitive emphasis, its flexibility of application and its high level of learner involvement. The lack of ability of the teacher to successfully mediate emotionally with the learners, the lack of language ability of the teacher and that of the learners when the model is used in a second language and the heavy demands it places on both learner and teacher participation and confidence, could be weaknesses in the context of street children. The specific aim of this thesis is to see if this model is applicable to the teaching of street children in a school context.