

## Chapter 2

### Literature review

#### 2.1 Introduction

This study explores the transition of one group of learners from a teacher-centred to a learner-centred learning environment, and aims to identify the factors that need to be considered when making such a transition.

In the first chapter of this study, the researcher presented a framework for the study. In this chapter the issues that need to be considered will be discussed in the light of the existing literature.

Firstly, let us consider a model of learning and learner-centred learning. The different principles of learner-centred learning, as proposed by the APA, will be reviewed in the light of the literature. Finally, the researcher will review the literature that describes possible models for the application and assessment of Outcomes Based Education in South Africa.

The figure below offers a structure for the discussion of the relevant literature in this chapter. The diagram is used throughout the chapter so as to facilitate the reading of the chapter. In the first diagram, the shaded areas indicate the research question and the main parts of the chapter. In the subsequent diagrams, the highlighted areas indicate the topics under discussion.

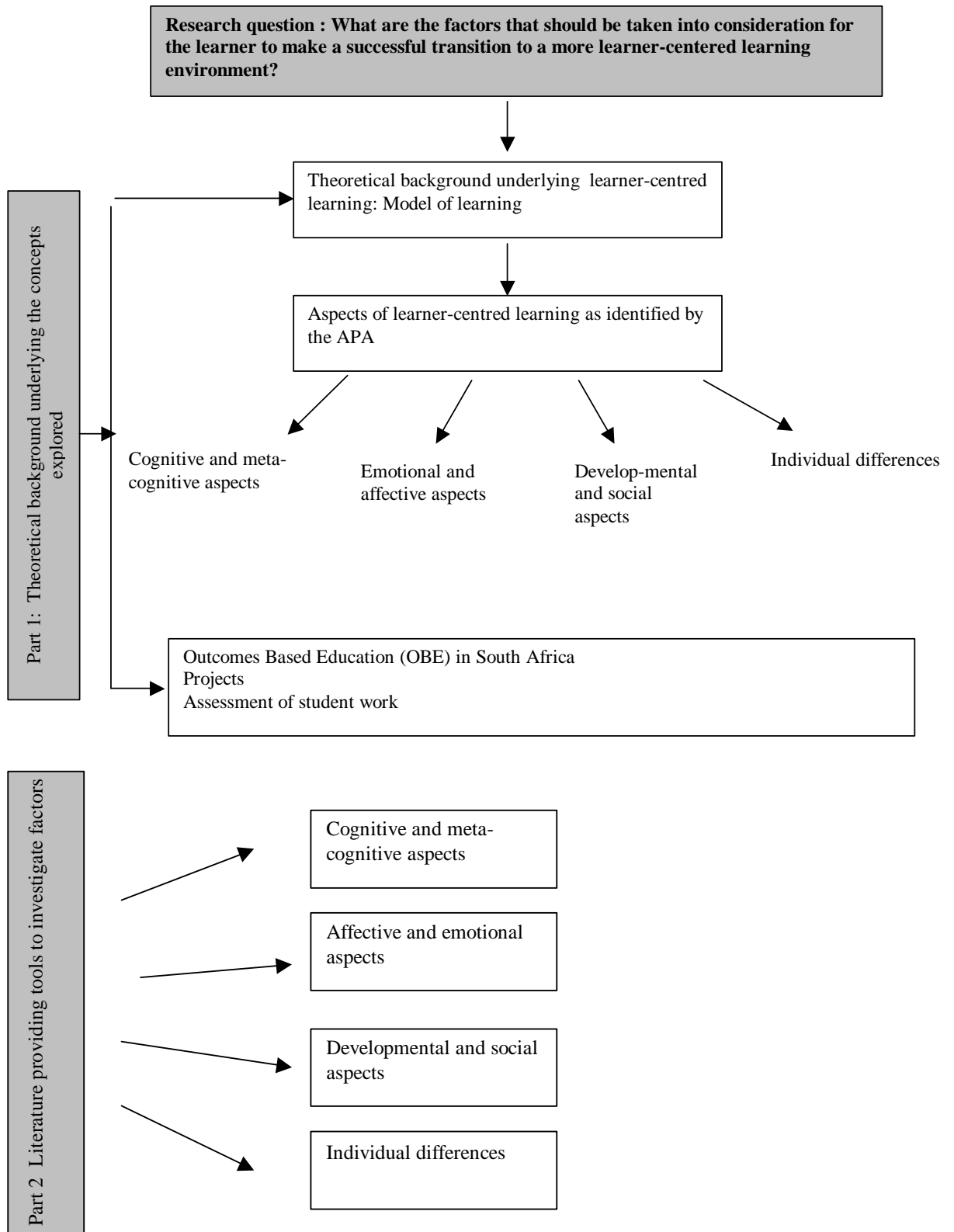


Figure 2.1: Diagram representing the structure of chapter 2

**Part 1: Exploring the theoretical background underlying the concepts**

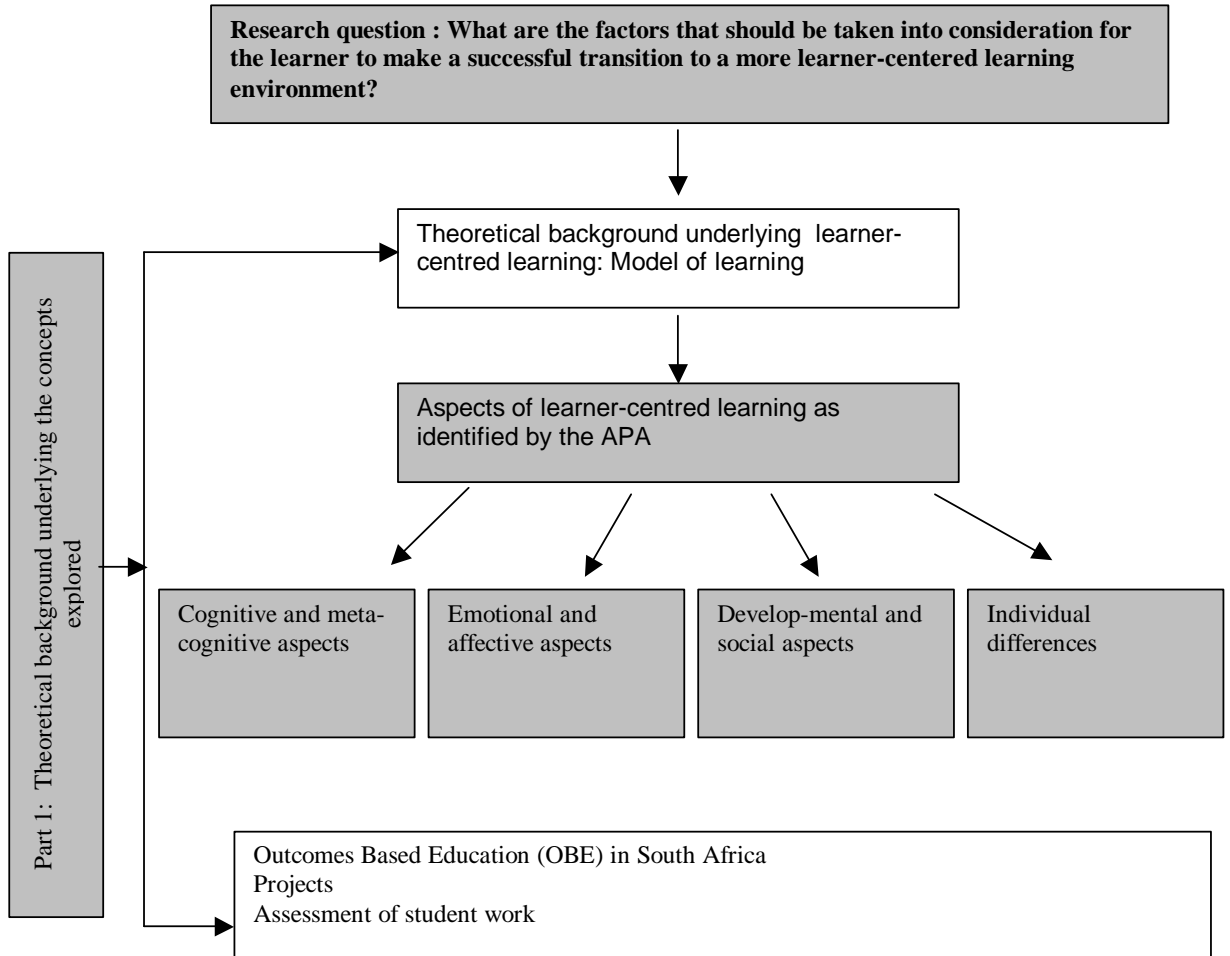


Figure 2.2: Theoretical background: the international context

**2.2 Theoretical background**

The concepts of how learners learn in a learner-centred learning environment is based on the constructivist model of learning, which defines how learners learn effectively and what the roles of the participants in the learning process should be.

**2.2.1 The constructivist model of learning**

In contrast to the objectivist tradition that holds that meanings exist “objectively” outside of the experience of the learner and need to be found and then understood (Duffy & Jonassen, 1992), the constructivist model holds that although the we experience a real world that does indeed exist “outside” of ourselves, we ourselves actually construct the meanings that we

project onto the world – however “objective” the outside world may seem. This means that many different and varied meanings can be projected onto any particular event, concept or phenomenon (Duffy & Jonassen, 1992). Learning is an active process by means of which learners construct concepts and ideas on the basis of their existing knowledge, ideations, attitudes, emotions and prejudices (Kearsly, 1998) By asking questions, interpreting events and solving problems, i.e. active involvement in exploring events and concepts, the learner constructs and develops his or her own understanding of the world and so learns new things (Marlowe & Page, 1998).

The teacher helps the learner to *construct* his or her own knowledge by giving the learner the opportunity to explore concepts and apply ideas (Slavin, in Potgieter & Cronjé, 1998) A learner understands new events in relation to his or her past experiences, and the active learning process helps the learner to develop logical thinking (Marlowe & Page, 1998).

In contrast to the constructivist model of education, the traditional approach is seen as being content-driven, with little involvement required from learners who are expected to be passive and receptive. In this kind of traditional teacher-centred learning, teachers deliver their received wisdom and certified information to passive recipients, and the main emphasis is on practising rote learning rather than acquiring any problem solving skills (Northern Province Department of Education, 2000).

### **2.2.2 Learner-centred learning**

The concept of learner-centred learning is based on the belief that people learn more effectively when they are *interested* in a topic or problem and thus are motivated actively to seek a solution to such problems (Norman & Spohrer, 1996). This idea is also central to Bruner’s constructivist learning theory in which he states that the learning process is an active one in which the learner must discover principles for himself/herself and that instruction must be offered in the context of experiences that make the learner willing and eager to learn (Kearsley, 1998).

Learner-centred learning regards the learner as the main character or protagonist in the learning process or “drama” – the one who takes the initiative and therefore learns in a socially interactive way. This model is in contrast to that of the passive recipient of information in a system where the teacher is *the* authority through whom all learning is made possible (Hansen, 2000). Because the learner is an active agent in learning, learner-centred learning places "the control of the learning process in the hands of the learner" (Open Learning Technology Corporation, 1996: 05).

Table 2.1: Summary of differences between objectivism and constructivism

<b>Objectivist model</b>	<b>Constructivist model</b>
Meaning exists outside the learner, in a real world that is independent of the learner.	Meaning is constructed by the learner – although a real world does indeed exist outside of the learner.
A learner acquires knowledge passively.	Learners are actively involved in constructing knowledge.
The teacher controls the learning situation by “giving” correct and immutable knowledge to passive and receptive learners.	The learner controls the learning process.
The emphasis is on rote learning.	The emphasis is on problem solving.

The American Psychological Association has identified the following identifying features or premises of learner-centred learning (Lambert & McCombs, 1998: 9-11):

- Learners have different frames of reference and perspectives because they come from different backgrounds and experiences and have different goals and hopes. These differences must be respected if learners are to become engaged in their own learning process and if they are to take responsibility for their own learning.

- Learners manifest unique differences in their states of mind, talents and learning styles and these must be taken into account if they are to identify the challenges and learning experiences they need for self-development.
- Learning is a constructive process. Learners construct knowledge most effectively if the content concerned is relevant and personally meaningful to the learner. The learner connects with what is being learned because of his or her prior knowledge and experience.
- A friendly and encouraging social environment in which the learner feels appreciated, respected and valued creates a situation in which learning occurs best.
- Learning is a *natural* process because learners who are respected are *naturally* curious and therefore want to learn and improve their situations.
- Although negative feelings and thoughts may interfere with the learning process, the learner should not be blamed for these. Negative feelings must somehow be dealt with and neutralised.

Based on Lambert and McCombs (1998:10), on the basis of the premises outlined above, have identified the following categories of factors that impact on learners and learning.

- cognitive and meta-cognitive factors
- motivational and affective factors
- developmental and social factors
- individual differences

Because these categories or domains together constitute a complete picture of learner-centred learning, the researcher used them as categories to scaffold the framework of this study.

#### **2.2.2.1 Cognitive and meta-cognitive aspects of learning**

As individual understanding is based on the existing knowledge and experiences of the learner, (Jonassen & Mayes, 1993), and most effective learning takes place if the knowledge is personally meaningful to the learner

(Lambert & McCombs, 1998), placing the learning experience in a context that is meaningful to the learner leads to the construction of useful knowledge that can be transferred to new situations (Jonassen & Mayes, 1993).

Shin (1998) describes the self-regulating ability of the learner as the ability of the learner to participate actively in the learning process. This ability includes:

- strategic knowledge
- self-efficacy
- ownership
- orientation towards mastery
- self-reflection

Meta-cognition is the process of thinking and understanding a person's own cognitive processes (Flavell, in the Open Learning Technology Corporation, 1996: Learning Concepts). It is the active monitoring and control of the cognitive processes, and is central to planning, problem solving and evaluation (Open Learning Technology Corporation, 1996).

Sinitisa (2000: 5) points out that some "meta-learning" activities, besides the mastering of new knowledge, are also performed during a learning task.

These are:

- determining the current status of one's knowledge in relation to a task
- setting learning objectives
- the search for appropriate information sources and tools
- selecting adequate units for learning
- arranging necessary activities wherewith to practise the application of the new knowledge
- monitoring and sequencing learning
- assessing one's own learning

The "meta-learning" that Sinitisa (2000) refers to has the same control and monitoring functions that are described by Flavell (Open Learning

Technology Corporation, 1996), and is regarded by the researcher as being synonymous with Flavell's concept.

Alexander and Murphy (1998) cite Garner who states that learners who reflect on the easiest way in which to learn and perform, and who use that reflection to change the ways in which they behave, are more likely to succeed than those who do not do this.

#### **2.2.2.2 Motivational and affective factors**

"Motivation is the concept that is intended to explain one of the most elusive questions: Why do we do what we do?" (Ginsberg & Wlodkowski, 2000: 1).

*Motivation to learn* is what underpins a student's willingness or reluctance to participate in the learning process. Thus even *unwillingness* is underpinned by various valid reasons or goals (Lumsden, 1994).

In this study, the researcher distinguishes between **intrinsic** and **extrinsic** motivation.

**Intrinsic motivation** describes motivation that comes if the task is engaged in for its own sake and not for the sake of reward (i.e. if the "reward" resides in the task itself). Learners who are intrinsically motivated tend to spend more time and effort on the learning task (Malone, 1981).

Extrinsic motivation happens when external rewards are used to motivate the learner to complete a task. Under some conditions, external motivation destroys intrinsic motivation. Performance on certain tasks is also, under some conditions, rendered inferior by extrinsic motivation (Malone, 1981).

It is desirable for learners to participate in learning activities because of the pleasure and satisfaction that they get from these activities. "Intrinsic motivation is superior and preferable to extrinsic motivation" (Mwamwenda, 1994: 183).

What is intrinsically motivating learning?



Malone (1981: 335) organises the characteristics of an intrinsically motivating learning environment into the following three categories:

- challenge
- curiosity
- fantasy

Malone (1981: 336) stresses the importance of challenge as an intrinsically motivating factor, quoting Csikszentmihalyi (1979) in saying that for an activity to qualify as challenging it needs to:

- have flexible levels of challenge so that a person can match his or her levels of performance to the actions that are required
- have a clear set of criteria for performance
- provide feedback to the learner
- have a broad range of challenges

Malone (1981) points out that a challenging environment must have goals that are personally meaningful to the learner, preferably on multiple levels. He also points out that curiosity is aroused by incongruity and complexity (Malone, 1981). Hunt and Piaget, in Malone (1981) postulate that there is an *optimal* level of complexity – and that too much or too little is not interesting.

Zimbardo (Malone, 1981) points out that the motivation to perform a task is increased if a person is given a choice or the illusion of a choice.

Keller, in Kearsly (1998) describes four components that would make a learning activity motivating. They are : "arousing interest, creating relevance, developing an expectancy of success, and producing satisfaction through intrinsic or extrinsic rewards" (Kearsly, 1998:online).

Positive attitudes, beliefs, perceptions and feelings should be motivating and should be developed in a classroom (McCombs & Whisler, 1997).

Self-esteem is an important factor in intrinsically motivating tasks because a challenging environment activates a person's self-esteem. The positive side to this is when the learner rises to the challenge and is successful, she or he

feels good about herself or himself. But the opposite is also true, and when a learner is not successful, she or he may be feel demotivated (Malone, 1981).

Ginsberg and Wlodkowski (2000) define four conditions for intrinsic motivation that emphasise the social and affective conditions of the learner:

- Inclusion: the learners and teacher should feel respected by and connected to one another.
- A positive attitude: a favourable disposition toward learning should be fostered by personal and cultural relevance and choice.
- Enhancing meaning: challenging learning is learning that confers social merit on the learner and gives him or her a sense of personal meaning.
- Engendering competence: learners should feel that they are effectively learning something of value to themselves.

The major measurable motivational outcome is *effort*. "Effort will occur on two basic requisites: the task must be valued by the student and the student must believe himself to be capable of successfully completing the task" (Small, 1997).

### **2.2.2.3 Developmental and social aspects of learner-centred learning**

The importance of learning occurring in the context of social interaction is emphasised by the statement: "Learning occurs best in an environment that contains positive interpersonal relationships" (Lambert & McCombs, 1998: 9-11). Johnson . and Johnson (1994) state that there are three ways in which learners interact while learning: in competition, individually, with no attention to others, or towards a goal shared with others.

Vygotsky supports this by stating that full cognitive development requires social interaction (Kearsly, 1998). The importance of the peer group of the learner and interactions in the classroom are thus very important for the learning process.

OBE acknowledges the importance of social interaction in the learning process by requiring learners to engage in group projects. Cooperative learning forms an important part in more learning-centred learning environments.

For cooperative learning to be successful the learners need to work towards a shared goal in a situation in which the contribution of each member is valued and necessary, and where the goal is “owned” by all the members of the group (Johnson & Johnson, 1994). All members must be held equally responsible for the outcome by all members of the group (Johnson & Johnson, 1994).

Potgieter and Cronjé (1998) conclude that when a learner is exposed to the “new” constructivist approach to learning and working in groups, many learners do not necessarily know how to cope. They have to be *taught* to learn in cooperative learning situations. They must learn to accept responsibility for the learning in the group. Equally, the success of all the learners in the group must be experienced and shared. As learners learn to work together, they become more and more ready to accept the challenges of learner-centred learning.

Salomon and Perkins (1998) point out that learners must learn how to participate in and use the social context – as, for example, in knowing when and how to ask for help. In this way, they create reciprocal situations in which help is exchanged.

#### **2.2.2.4 Individual differences as an aspect of learner-centred learning**

Learners each come to the learning situation with their own personalities, learning styles, motivation and focus. When a learner creates knowledge based on his or her previous knowledge, he or she has to imbue concepts or things with personal meaning.

Each individual has a typical way of thinking remembering and solving problems (Open Learning Technology Corporation, 1996). Learners come to the learning experience with prior knowledge that is peculiar to themselves

and with different beliefs and backgrounds that must be respected if learners are to participate actively in their learning processes (Lambert & McCombs, 1998). Differences in talents, emotional states, abilities and needs must all be taken into account if learners are to participate successfully in the learning and self-development that they need (Lambert & McCombs, 1998).

Learners also think and learn in different ways and tend to have a consistent approach to learning. (Litzinger & Osif, in Blackmore, 1996). Understanding such preferences is important if one wants to get learners involved in learning experiences. Such preferences can also influence the learning that learners achieve in a positive or negative way (Blackmore, 1996). Lambert and McCombs (1998) point out that learners need to examine and modify their learning preferences if such learning preferences do not facilitate a learner's progress towards his or her learning goals.

In general, sensitivity to individual differences in learners in the classroom and variations in learning materials is needed if one hopes to accommodate all learners and if one wants to help learners to learn effectively in a learner-centred classroom (Lambert & McCombs, 1998).

### **2.3 Conclusion**

Weinstein (1998) sums up the gist of the APA principles when he states that learning happens best when learners are challenged to link new information with existing knowledge in ways that are personally meaningful, are when they are intrinsically motivated to make an effort. Such effort, Weinstein (1998) maintains, should be supported by positive emotions, personal interest and control, and all learners should be respectfully acknowledged among their peers despite individual differences among learners.

### **2.4 The national and local context: OBE**

The next part of this chapter explores a relevant selection of the literature that deals with the implementation of OBE in South Africa and the assessment practices prescribed. The relevant section is highlighted below.

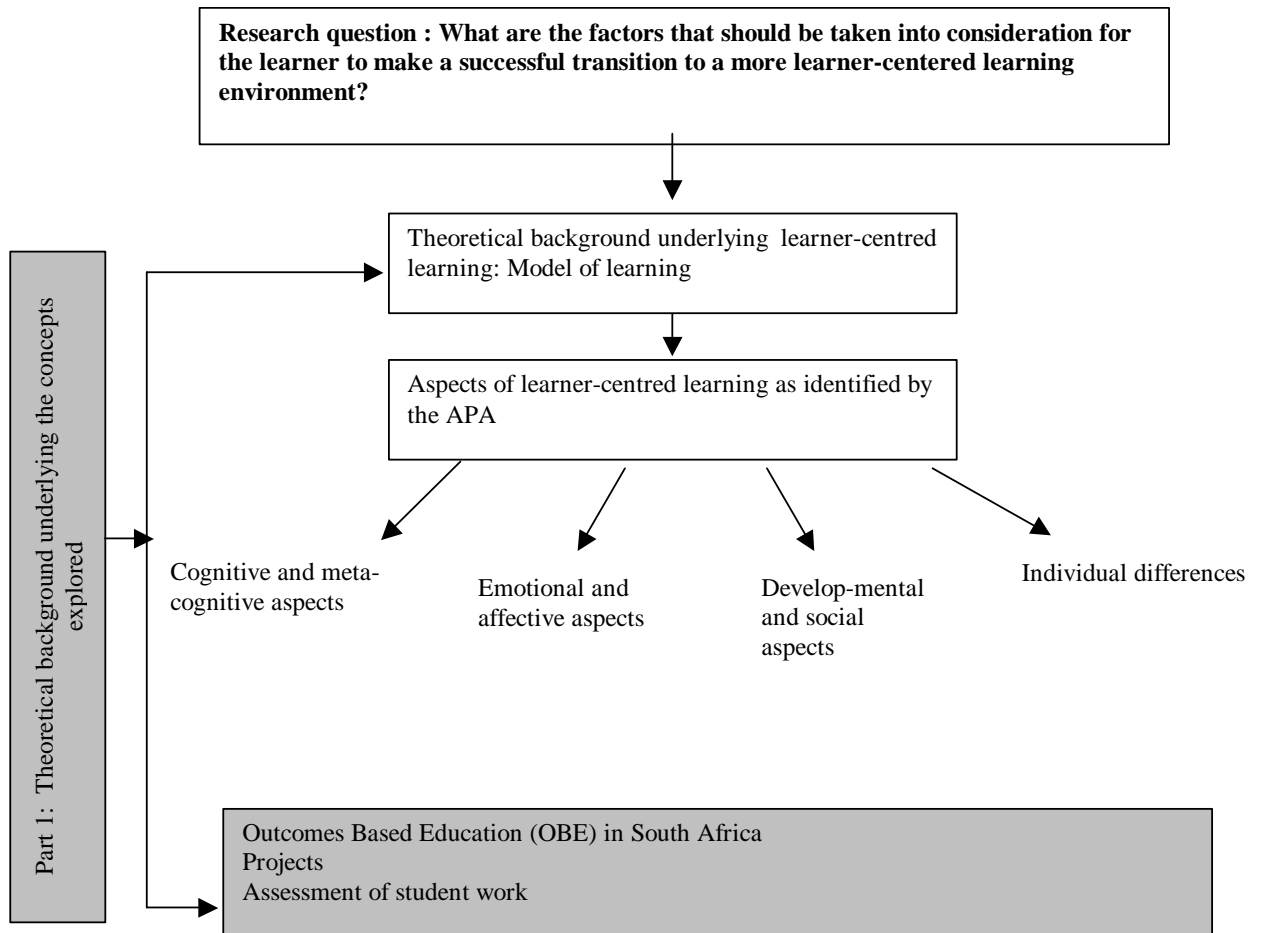


Figure 2.3: Theoretical background: the national context

Nationally the model of education used in this country has changed from the behaviourist teacher centred model to the constructivist model of learning with the introduction of Outcomes Based Learning in South Africa since 1994.

### 2.4.1 Outcomes Based Education

Outcomes Based Education (OBE) is a learner-centred approach to education because the emphasis is on what the learners wants to achieve and what the learner should be able to know, to understand, do and become – the so-called “outcomes” (Northern Province Department of Education , 2000: 5). In the OBE approach to education, all teaching and learning activities are aimed at the outcome that will be attained at the end of the process (Vermeulen, 2000).

South Africa has opted to implement transformational OBE which aims at "equipping all learners with knowledge, competence and the orientation needed for success after they leave school or have completed their training; its guiding vision is that of a thinking competent future citizen. Learners must be equipped to transfer success at school to life in a complex, challenging and transforming society" (Northern Province Department of Education , 2000: 9).

#### **2.4.2 The design of the learning experience**

In the constructivist model of learning, learning is facilitated when the learner is actively involved (Salomon & Perkins, 1998) in a learning situation that is personally meaningful to him or her (Jonassen & Mayes, 1993). Learners need to construct knowledge that is based on their existing knowledge (Open Learning Technology Corporation, 1996). When one designs projects for learning, one needs to take these factors into consideration so that one can provide the learner with a meaningful learning experience.

Norman and Spohrer (1996) point out that intrinsically motivating problems that are set in realistic situations are a major focus of learner-centred learning. The characteristics of intrinsically motivating learning experiences are discussed below.

#### **2.4.3 Project-based learning**

In terms of the constructivist learning theory that underpins Outcomes Based Education, learners construct new ideas and concepts from the basis of their existing knowledge and information, and they must be presented with information in a way that is suited to a learner's current understanding (Open Learning Technology Corporation, 1996). The locus of control over learning in a constructivist learning environment rests with the learner (Open Learning Technology Corporation, 1996), and not with the teacher.

The placement of learning experience in a context that is meaningful to the learner leads to the construction of useful knowledge that can be transferred to new situations (Jonassen & Mayes, 1993). Rogers states that learning is facilitated in a learner-centred environment in which the learner can safely

engage with and confront practical, social, personal or research problems (Kearsly, 1998).

One of the ways to achieve this context and confrontation is to give the learners a project to complete because by doing this, one confronts the learner with problems that have to be solved and provides the context within which the learner can construct useful knowledge.

Using projects to generate learning experiences is one of the ways in which OBE confronts the learner with a context that facilitates learning.

#### **2.4.4 Assessment**

Assessment is the process by means of which information about students is gathered. Different methods such as observation of the student, testing of knowledge and skills or the examination of student product, may be used (Hart, in Le Roux, 1999).

Mentowski points out that “assessment is a means to educational goals, not an end in itself” (Mentowski, 1998: 303).

Baron’s (1998) characterises learner-centred assessment as follows:

- It should help learners to function successfully in society by representing the content skills and dispositions that society values.
- Assessment tasks must also function as learning events.
- Learners must be encouraged to “self-assess” their progress. Publicly stated performance criteria must be published so that the learners can monitor their own work.

The Department of Education of South Africa emphasises the importance of a variety of methods by which information about the learner's competence should be gathered. These methods include, among others, tests and examinations, learner portfolios, self-and peer assessment, and projects (Department of Education, 1997)

Assessment criteria are adduced so that a teacher has benchmarks wherewith to determine whether or not certain outcomes have been reached. These criteria are derived from the outcomes, and form the framework for assessment (Department of Education, 1997).

Summative assessment gives information about the learner's competence at the end of a learning experience, a lesson or a phase. Summative assessment is usually applied in a formal manner in the form of a test, examinations, assignments or demonstrations (Vermeulen, 2000).

Baron (1998) states that learner-centred performance-based assessments must be phased in over a period of time, and that tasks should be:

- contextualised (i.e. authentic and based on the real world of the learner's experience)
- engaging
- non-trivial
- challenging

#### **2.4.4.1 Portfolio assessment**

A portfolio is a purposeful collection of a learner's work that will "exhibit the student's efforts, progress and achievements in one or more areas" (Paulson, Paulson & Meyer, in Van Niekerk, 1998: 82).

Portfolio assessment is regarded as a means wherewith to inform a learner about his or her actual performance level (Tillema, 1998). The portfolio focuses on the assessment of the learner's performance and development – and *not* on his or her ability to recall facts, as with traditional tests (Van Niekerk, 1998: 85). Van Niekerk points out that learners should decide on most of the content of the portfolio and that it should include elements of self-reflection (Van Niekerk, 1998). At the same time it is pointed out that learners will not know automatically how to compile a portfolio and that they will need guidance (Van Niekerk, 1998). Self-evaluations should also form part of portfolio assessment (Ascher, 1990 )



Portfolio assessment is regarded as part of summative assessment. Portfolio assessment is the assessment of a collection of work completed over a period of time. It demonstrates to what extent the learner achieved the required outcomes (Vermeulen, 2000). Tillema (1998) points out that although it provides feedback about the level and quality of the learner's performance in a concrete way, the validity of portfolio assessment as an assessment tool has not yet been established.

The content of the portfolio should not be prescribed too rigorously. The selection process, by means of which the learner decides what to put in, reflects the meta-cognitive maturity of the learner. The process of attaching meaning to the contents of the portfolio promotes meta-cognitive growth (Herbert, 1998).

According to Paris (1998), portfolio construction and assessment confer the following advantages on learners:

- The collection of work in a portfolio places the emphasis on work samples taken from the regular curriculum.
- It provides ongoing information about what and how learners are learning.
- It provides a system for collecting and monitoring students' work.
- It does not require extra work without any apparent purpose on the teacher's part.
- It can provide increased information to parents about learners' work.
- Learners learn to take responsibility for collecting evidence of their own work and to assess their own progress.
- They become more actively involved in applying criteria of learning and motivation, and in understanding the principles involved as they become engaged in self-assessment. This enhances learners' motivation and ownership of their own learning.

Paris (1998) points out that three kinds of evidence should be considered across the curriculum when compiling a portfolio:

- A portfolio should include samples of daily work, as well as the concrete artefacts related to learner performance in class.
- A portfolio should include evidence of the process of learning so that others can see their thinking in their work.
- Teachers and students should include self-reflections from time to time that describe how they perceive their abilities and progress.

Barrett (1999) agrees with Paris (1998) in the content that he requires for a portfolio, but adds that learner goals, teacher feedback, clear and appropriate criteria for the evaluation of the work, and standards and examples of good work should be included in the portfolio.

Barrett (1999) describes three approaches to assessment: portfolio; teacher-centred; learner-centred, and mixed model. In the teacher-centred model, the teacher takes responsibility for the portfolio and there is little or no self-assessment by the learner. In peer assessment, peers are involved in assessment. In the student-centred model, students are in charge of their own portfolios and they choose what to include. They also show evidence of learner self-assessment, peer-assessment and collaboration with others such as parents, teachers and fellow students.

#### **2.4.4.2 Continuous assessment**

Worthen (1993) states that the proponents of alternative assessment maintain that a learner's achievements cannot be properly assessed on the basis of the limited information obtained from an examination or test. They need to be assessed from an examination of the learner's processes and products, which would include self-assessment checklists, products such as diaries and portfolios, and performances such as typing tests. Worthen (1992) argues that alternative assessment such as portfolio assessment (which is continuous assessment), will provide more information and should become the principal assessment procedure in the classroom.

Assessment in Outcomes Based Education is designed to help learners to achieve success. It is integrated with learning and is also continuous in nature (Bertrams, in Vermeulen, 2000: 67).

Up until 2001, performance testing of grade 12 learners was based on a single written examination at the end of grade 12 (Northern Province Department of Education, 2001: 5). Although Outcomes Based Education is not fully implemented beyond grade 8 in 2001, the Department of Education decided to implement continuous assessment for grades 10 to 11 in all school subjects from 2001 (Northern Province Department of Education, 2001: 6).

Continuous assessment is assessment performed over a period of time, on an ongoing basis. It may include various assessment methods, such as tests, assignments, portfolios, projects and examinations (Northern Province Department of Education, 2001: 5).

The Department of Education (2001: 5) points out that the benefits of CASS Assessment include:

- paced learner assessment
- assessment in authentic contexts
- assessment carried out by an educator who works directly with the learner
- the promotion of formative assessment and continuous feedback about learning and teaching processes
- better informed summative content

As a general guideline, the Department of Education prescribes the following techniques for assessing the subject's skills, knowledge and attitudes (Northern Province Department of Education, 2001: 6):

- oral and practical work
- classroom work based on tests and class work
- assignments and homework
- portfolios
- projects

- site visits
- role plays
- controlled examinations including trial/mid-year exams

For the CASS assessment, the learner portfolio should include the following (Northern Province Department of Education, 2001: 7):

- summary sheet as contents page and moderation record
- tests that have been written
- assignments and projects
- practical work – planning, and how it was assessed
- classwork and homework books (wherever such counts toward the CASS mark)

Continuous assessment is seen as a high-quality strategy and a way to "account publicly for the achievement of learner outcomes" (Northern Province Department of Education, 2001: 1). For this reason, marks have to be moderated internally and externally. The principal and heads of department do internal moderation, the district carries out the management, and external moderation is done by SAFCERT and a provincial moderation panel for each region (Northern Province Department of Education, 2001).

## **Part 2: Tools suggested by the literature for the exploration of the classroom events**

To answer the main research question and identify the factors that influence the learners' performance when making a transition to a more learner-centred learning environment, not only the factors in of each aspect of learner-centred learning must be considered, but also the conditions for effective learning. The literature provides us with certain tools to approach the question. The relevant section is highlighted in the figure below.

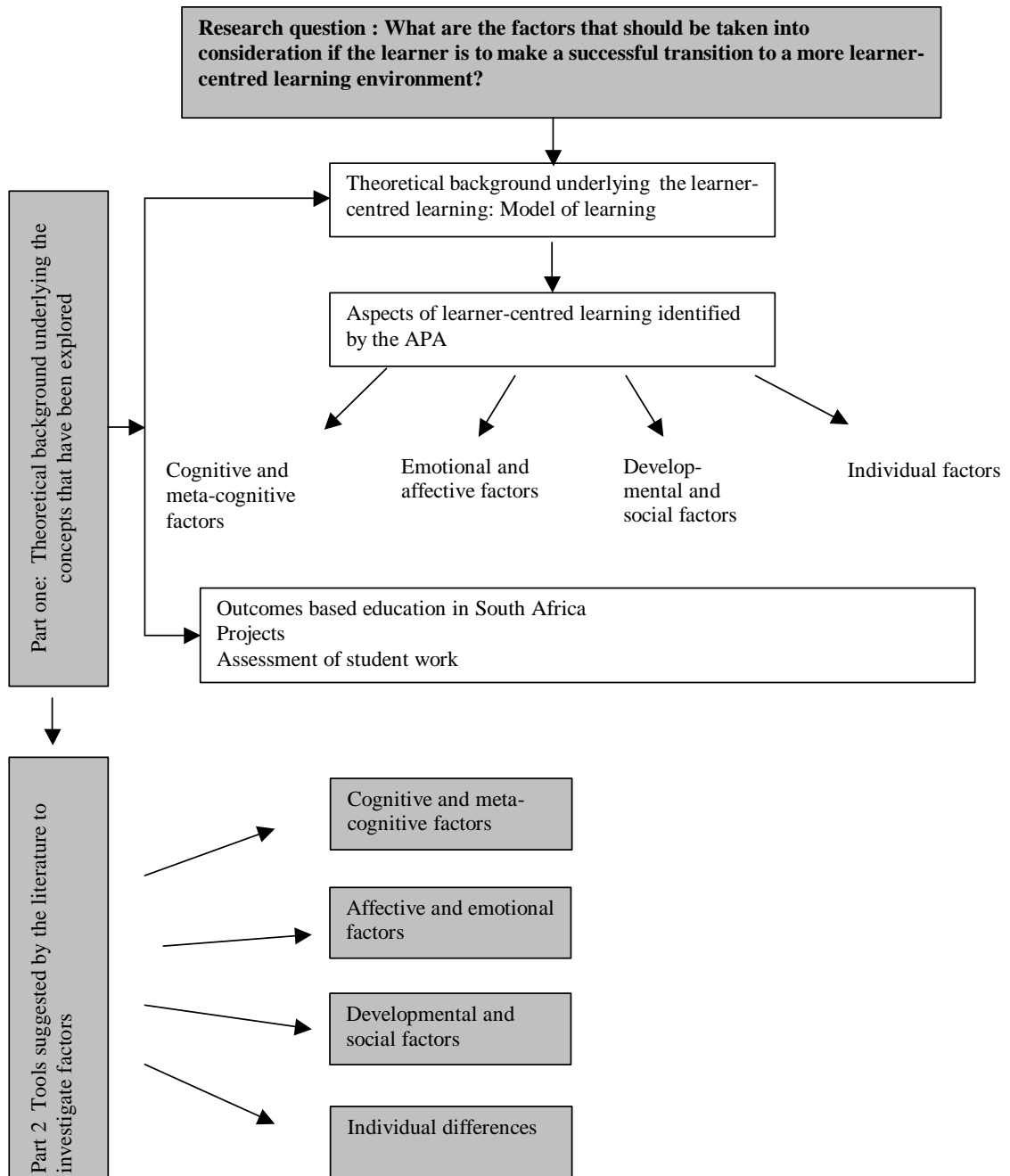


Figure 2.4: Tools suggested in the literature.

## 2.5 Effective learning

In Gagné's theory there are several types of learning, each requiring differing techniques of instruction (Kearsly, 1998). Five major types of learning are identified: verbal information, intellectual skills, cognitive strategies, motor skills and attitudes that are relevant in the classroom situation ( Kearsly, 1998; Mwamwenda, in Potgieter & Cronjé, 1998). Gagné suggests that the following sequence of instructional events satisfies the conditions necessary

for each progressive step and so facilitates effective learning (Kearsly 1998; Potgieter & Cronjé, 1998), These nine steps are:

- gaining attention
- informing learners of the objective
- stimulating recall of prior learning
- presenting the stimulus
- providing learning guidance
- eliciting performance
- providing feedback
- assessing performance
- enhancing retention and transfer

## 2.6 Cognitive and meta-cognitive aspects of learning

When learning the learner must gain new knowledge and skills. The constructivist model of learning proposes that the knowledge is constructed based on existing knowledge.(Kearsly, 1998). A part of this process of constructing knowledge is asking questions, interpreting events and solving problems (Marlowe & Page, 1998). This process includes the cognitive and meta-cognitive aspects of learner-centred learning. In order to learn, the learner must:

- **Plan** Shin (1998) points out that the learner must select and arrange the learning strategies needed to perform the task, select adequate units for learning and search for appropriate information sources and tools (Sinitsa, 2000).
- **Analyse and strategise** The learner must analyse the difficulty level of the demands of the task (Shin, 1998) in order to determine his or her own level of knowledge in relation to the task (Sinitsa, 2000). S/he must then decide on the strategies needed to solve the problem (Shin, 1998) and set learning objectives (Sinitsa, 2000). In addition the learner must analyse his or her own strengths and weaknesses, learning styles, learning strategies and motivation (Shin, 1998).

- **Monitor** Learners monitor their own progress and make sure that they are moving toward the goal (Shin, 1998; Sinitsa, 2000). They need to check the strategies they have selected and must decide if they need to adapt them (Shin, 1998). In addition, they must arrange whatever activities are necessary to practise the application of their new knowledge (Sinitsa 2000).
- **Revise** Learners must modify their strategies when problems exist (Schmitt & Newby, 1996, in Shin 1998). Learners must also evaluate their learning at the end of the project so that they can find out to what extent they have reached their learning goal (Shin, 1998). Alexander and Murphy (1998) cite Garner when he states that learners who identify the ways in which they learn and perform best and who use that reflection to change the way in which they behave, are more likely to succeed than those who do not do this. Sinitsa (2000) points out that a learner's assessment of his or her own learning is a meta-cognitive task that should accompany learning.
- **Take ownership of their work** Shin (1998) quotes Lebow (1955) who describes the learners' sense of "regulating their own learning" by building personal commitment to meaningful goals and making changes, as well as the processes of learning on their own as ownership.
- **Validate their own work** From a constructive-developmental point of view, the process of constructing meaning that has personal validity, is self-authorship (Baxter Magolda, 1999). Learners need to assess their knowledge and learning and need also to reflect on their processes so that they can give a personal value to their learning (Sinitsa, 2000).

## 2.7 Emotional and affective factors

*Motivation* refers to the learner's willingness to learn (Lumsden, 1994).

Intrinsic motivation is the motivation to do a task where the reward for doing the tasks lies in the satisfaction of doing the task, while external (or extrinsic) motivation is based on having a reward outside the task (such as marks).

Mwamwenda (1994) points out that possessing intrinsic motivation is more desirable than possessing extrinsic motivation.

Table 2.2 shows the factors of intrinsic motivation as derived from Malone (1981). It also shows other motivational factors (Kearsly, 1996).

Table 2.2: Factors of intrinsic motivation (Malone 1981 & Kearsly, 1996).

<b>Factors of intrinsic motivation</b>	<b>Component(s) of the intrinsic motivation factor</b>
<b>Challenge</b>	Flexibility
	Set criteria for performance
	Feedback
	Range of challenges
	Personally meaningful goals
<b>Curiosity</b>	Incongruity
	Complexity
<b>Fantasy</b>	Fantasy
<b>Choices</b>	Choice
<b>Relevance</b>	Relevance

Even if the task has been designed specifically to be intrinsically motivational, Ginsberg and Wlodkowski (2000) point out that there are four other conditions that are also prerequisites for intrinsic motivation:

- a feeling of mutual respect and connectedness between the teacher and the learners
- a positive attitude towards learning
- learning that has social merit and personal importance to the learner
- a feeling on the part of learners that they are effectively learning something that is of value to them



McCombs and Whisler (1997) note that positive attitudes and self-esteem also influence the motivation to learn. Malone (1981) states that when learners feel that they are up to the challenge of the task, this will enhance their motivation to perform a task. But when learners feel that they will fail in their performance of the task, their motivation is diminished.

### **2.7.1 Which factors impact negatively on the willingness to learn?**

When extrinsic rewards are given, this may undermine the learner's intrinsic motivation because extrinsic rewards makes a project less intrinsically motivating (Lumsden, 1994)

The *personal relevance* of what a person is learning as a motivational factor is noted by Keller in Open Learning Technology Corporation (1996), Ginsberg & Wlodkowski (2000) and Malone (1981). However, when a learner does not perceive his or her needs accurately, he or she may fail to attach personal relevance to what he is learning (Forcheri et.al, 2000).

When a learner does not successfully meet the challenge of a task, this may give rise to a "fall in self-esteem and a subsequent loss of motivation" (Malone 1981: 360). Learners may resist learning in an environment where they feel vulnerable or have apprehensions about control (Ginsberg & Wlodkowski, 2000).

Anxiety can decrease the motivation to learn (Open Learning Technology Corporation, 1996). The willingness to learn may further be impeded by a student's fear of failure or because of fears of participating in class discussions (Teel & DeBruin-Parecki, 2001). Extrinsic motivation may undermine intrinsic motivation (Lumsden, 1994) and this may cause learners to put in a minimum of effort to obtain a maximum reward (Lepper, in Lumsden, 1994).

Learners may resist change in the classroom because they are used to the ways of doing things that they have already developed throughout their school careers (Teel & De Bruin-Parecki, 2001). They may feel comfortable

and familiar with the old ways of doing things (Teel & DeBruin-Parecki, 2001), and so resist new ways of learning.

Learners may not want to learn in a learner-centred classroom because they see school as a place where they are *supposed* to follow orders and where decisions should be made for them (Teel & DeBruin-Parecki, 2001).

## **2.8 Social and developmental factors**

All individuals progress through stages of physical, intellectual, emotional and social development (Mid-continent regional educational laboratory, 1993, in Lambert & McCombs, 1998). The effectiveness of the learning experience is optimised when the material is presented at a level that is appropriate to the developmental level of the learners and where an awareness of the developmental stages can facilitate efforts to create optimal contexts for learning (Mid-continent regional educational laboratory, 1993, in Lambert & McCombs, 1998).

The characteristics of a particular *generation* of learners also give indications as to what is appropriate material and presentation. Don Tapscott (1999) calls the generation of learners younger than 22 “the Net generation” or N-generation. He argues that these learners grow up in a world where digital technology is part of the landscape. Most of these learners can use a computer and are connected to the Internet, or at least have some experience of that and are not afraid of technology. According to Tapscott (1999), these learners have the following characteristics in common:

They tend to be:

- exceptionally curious
- self-reliant
- “contrarian”
- focused
- able to adapt
- globally oriented
- high in self-esteem

He also points out that these children and young people are used to being active users, and so they do not want to be passive viewers of or listeners to information (Tapscott, 1999).

Learning is assisted when the learning environment provides interaction with others in a flexible and diverse setting (Mid-continent regional educational laboratory, in Lambert & McCombs, 1998).

If learning is to be effective, learners need to be respectfully and appropriately supported in their learning environments – in spite of the individual differences between them (Weinstein, 1998). They also need to be shown that their opinions are valued in the learning environment (Baxter Magolda, 1999; Lambert & McCombs: 1998). Learning not only takes place in a social context. According to the theory of Bandura, learners observe and model the behaviour of other people (Kearsly, 1998).

Where crucial social factors have been implemented in learner-centred learning, one may expect that cooperative learning will produce following advantages:

- better academic performance
- enhanced short- and long-term memory
- improved self-esteem
- improved intrinsic motivation and emotional involvement
- more pro-social behaviour and better interpersonal relationships within the peer group
- enhanced aspirations to achieve scholastically (Le Roux & Lippert, 1993)

Gohkale (1995) points out that group tasks must include both goals for the whole group and individual responsibility for the progress of the group if the group work to be effective.

Panitz (1996) distinguishes between cooperative and collaborative learning. He points out that cooperative learning is more concerned with the product of the learning process while collaborative learning is concentrates on the

interaction between the learners and the process of learning. Cooperative learning is more teacher-centred while collaborative learning is more learner-centred (Panitz, 1996). OBE requires cooperative learning as part of the learning-centred learning environment (Northern Province Department of Education, 2001).

In consideration of the factors mentioned above the following figure displays a summary of the elements of developmental and social factors according to which the events in the classroom will be discussed.

Developmental stage of self-authorship
Level at which the material is presented
Quality of the setting as far as atmosphere and diversity , respect and support is concerned
Use of the social environment – asking for and giving assistance
In cooperative learning: <ul style="list-style-type: none"><li>▪ individual accountability</li><li>▪ shared goals</li></ul> positive interdependence

Table 2.3: Summary of developmental and social factors that can be used as tools for the consideration of the classroom events

## 2.9 Individual differences in learner-centred learning

Learners not only come to the learning environment with a certain history behind them that colours their opinions, interests and goals, but also with differences in their learning styles, development, abilities, feelings of efficacy and various other needs (Lambert & McCombs, 1998). A person's learning

style also describes that person's distinct way of thinking, remembering, and problem solving (Kearsly, 1998).

Kolb's theory describes four distinctive styles of learning that permit one to classify learners as divergers, assimilators, convergers, or accommodators (Kearsly, 1998; Oughton & Reed, 2000). These learning styles are based on the way in which individuals *process* information. The individual learning style of the learners and the way in which the learning material is accommodated also suggest a variety of learning styles that need to be taken into account when considering the factors that influence successful transition to a learner-centred classroom (Blackmore, 1996).

The constructivist theory of Bruner holds that learning is the process by which an individual makes meaning of his or her experiences (Kearsly, 1998). The beliefs that a learner possesses about his or her own abilities and capabilities influence his or her behaviour and academic performance (Pajares, 2000). "Self-authorship means that the learners believe that one can construct knowledge claims, make one's own inner psychological life, and regulate relationships with others to maintain one's own identity" (Baxter Magolda, 1999: 39). The level of self-authorship is central to the way in which a learner constructs meaning and therefore to the effectiveness of his or her learning (Baxter Magolda, 1999).

According to Lambert & McCombs (1998), learners in a learner-centred classroom need to perceive that their individual diversities of background, abilities, cultures and experiences are accommodated and respected in the classroom. Sensitivity towards individual differences is required for effective learning (Lambert & McCombs 1998).

Shashaani's (1992) study concluded that girls had less self-confidence when it came to working on computers, and that girls reported fear and feelings of helplessness when confronted with computers. This significant gender difference was attributed to the socialisation process (Shashaani, 1992). Van der Voort et.al. (1998) found a difference in the use of electronic media (including computers) between the two genders in both the Netherlands and

Britain, but that when programmes offered on *television* were of a kind that girls liked, there was no differences.

Taking the elements into account, the following table combines the elements mentioned above into a table that can be used as a basis for discussing class observations of the individual factors that have to be considered.

Table 2.4: Individual factors that can be used as a basis for discussion

Topics that need to be discussed before learner-centred education can be introduced	Individual factors within topics
Sensitivity towards diversity in the classroom	Language Culture Abilities Gender
Accommodation of individual differences	Learning styles Self-efficacy and self-authorship

## 2.10 Conclusion

When considering the four factors of learner-centred learning as identified by the APA, **it becomes clear that these factors interact with each other.** Self-authorship encompasses individual, social and cognitive factors ( Baxter Magolda, 1999). Motivation and all affective factors that affect learning depend on the emotional and developmental state of an individual. The cognitive and meta-cognitive factors of learning are heavily influenced by the individual personal states and attitudes if one considers the fact that self-beliefs influence the way information is processed, how a learner is motivated, and how much effort he or she will display (Pajares, 2000).

Marzano (1998) describes the interaction between the self-system, cognitive and meta-cognitive system when a task is presented to an individual. The cognitive system processes the knowledge specific to the presenting task (Marzano, 1998) and the meta-cognitive system contains information about the plans, goals, timelines, resources and their interactions (Marzano, 1998).

When a learner is presented with a task, the self-system evaluates relevance and then any possible threat to that learner. The learner will then approach the task with negative or positive affects and high or low motivation. If a learner approaches the task with high motivation, he or she will engage in the task and the meta-cognitive and cognitive processing of the task will occur. If the learner approaches the task with low motivation, he or she will engage in compensatory activities and the meta-cognitive processing of the compensatory activity will take place – followed by the cognitive processing of the compensatory activity.

The description of this model is presented as a graphic representation of Marzano's (1998) description of the self-system.

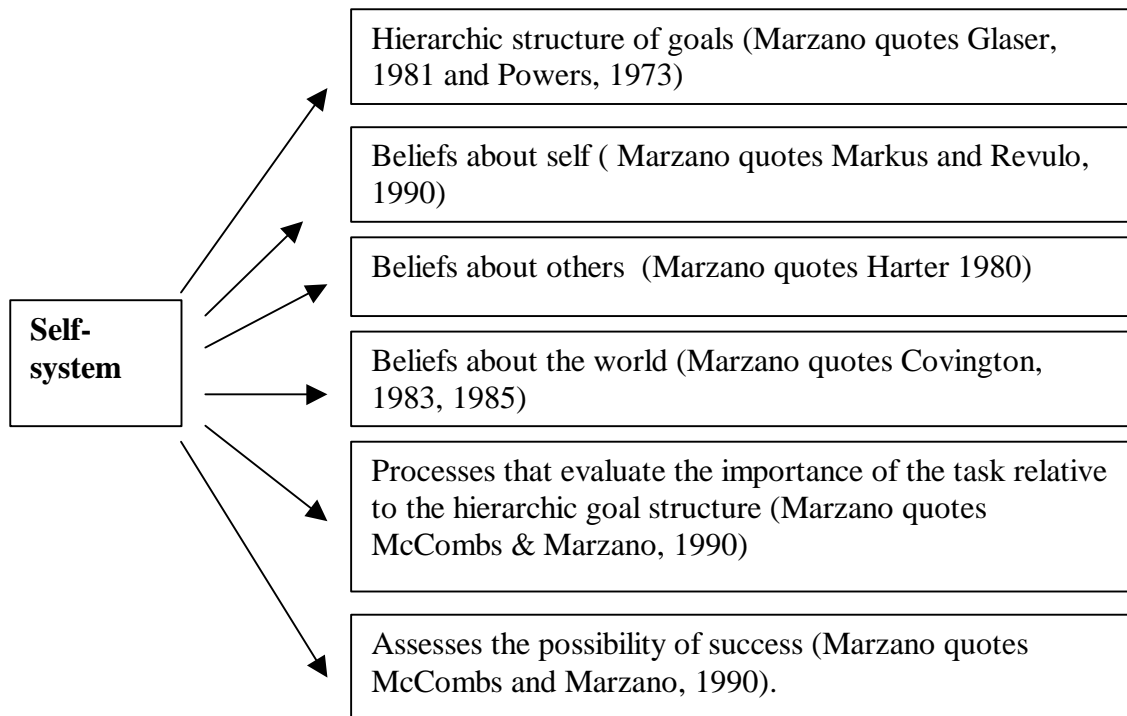


Figure 2.5: Marzano's (1998) description of the self-system