

## CHAPTER THREE

### CONCEPTUAL FRAMEWORK

This chapter will describe the development of the conceptual framework upon which the Portfolio Assessment Package is based. The Portfolio Assessment Package is designed based on several of the concepts that underpinned the cases of portfolio assessment implemented in various settings, examined in the previous chapter. The concepts that will determine the conceptual framework for the Portfolio Assessment Package are metacognition, cognitive apprenticeship, and collaboration.

#### 3.1 Metacognition

*A major aim of the Portfolio Assessment Package is to develop the thinking student. The thinking student is one who knows what s/he knows and what s/he does not know about the assessment task that s/he has in front of him/her, what s/he needs to know and how s/he is going to get what s/he needs to know, so that s/he can complete the task successfully using his/her strengths to the optimum. In other words, the Portfolio Assessment Package hopes to develop the metacognitive abilities of learners.*

Metacognition, according to Flavell (1976), is a process where one is aware of and in control of one's own knowledge and thinking and therefore in a position to determine one's learning. Paris and Winograd (1990), however view metacognition from a wider perspective, in that they include an individual's affective and motivational characteristics of thinking as part of the individual's cognitive state. Accordingly, they refer to metacognition as the knowledge an individual has about his/her cognitive,

affective and motivational aspect of thinking as well as his/her abilities that the individual can share with others. The central tenet, drawn from the above definitions of metacognition, is that students can be made aware of their own thinking processes as they read, write and solve problems in schools. Through this awareness they can then regulate their own learning.

Paris and Winograd (1990) and Shuell (1986) summarised metacognition as having two essential features. They are cognitive self-appraisal and cognitive self-management. Cognitive self-appraisal includes reflections about one's abilities and knowledge situation (Paris and Winograd, 1990) as well as what one knows or does not know about the task and processes and strategy involved in handling the task effectively (Shuell, 1986). Flavell (1978) describes cognitive self-appraisal as judgements made about one's personal cognitive abilities, task, and strategies selected to tackle the task. These judgements can be regarded as static because they are people's assessment of their knowledge or abilities based on one's hypothetical situation. Wilen and Phillips (1995, p.135) also commented on this metacognitive feature but referred to it as "awareness". Their elaboration of this feature is essentially the same as Flavell's. They elaborated that a student's awareness of his/her cognitive behaviour during a task includes the student's awareness of what he/she is going to achieve from the task, his/her prior knowledge about the task, what else needs to be known, and what skills and strategies would be needed to successfully undertake the task. Studies have shown that children have difficulty in performing cognitive self-appraisal and that it is possibly an age related activity (Paris and Winograd, 1990).

In contrast, cognitive self-management is how metacognition can help to arrange and regulate various activities so that learning and problem solving can take place successfully. It is, as Paris and Winograd (p.18) put it, “metacognition in action”. It includes activities like identifying the problem to be solved, planning and selecting the strategy to be used, monitoring and supervising the plans and evaluating the effectiveness of the strategies used (Duell, 1986). Wilen and Phillips (1995, p.135) referred to this feature as “action”. This feature involves students’ ability to self-regulate and monitor their progress by checking the outcomes of their action, to ensure the successful completion of the task. Paris and Lindauer (1982) summarised these actions as evaluating, planning and regulating. Cognitive self-management as opposed to cognitive self-appraisal can directly affect a student’s performance as well as instruction. The Portfolio Assessment Package hopes to cultivate cognitive self-management in students through problem solving, self-assessment and peer-assessment.

From the discussion so far, it can be implied that metacognition can be regulated and monitored to influence a student’s learning. How can metacognition monitor students’ learning? This can occur through the actions and interactions of four classes of phenomena namely metacognitive knowledge, metacognitive experiences, goals (tasks), and actions (or strategies). Metacognitive knowledge is the knowledge of how the three categories of factors which are, person, task and strategy act and interact to influence thinking and learning (Flavell, 1979). The person category is taken to mean our beliefs about others and ourselves as cognitive processors. Flavell and Wellman (1977), elaborate by saying that metacognitive knowledge in this category is one’s knowledge about one’s strengths, weaknesses and skills. The task category covers information

available to us during a cognitive activity. It could be abundant or scanty, useful or inapplicable, delivered in a particular manner or pace. The metacognitive knowledge about tasks refers to how these variations in information will be related to the cognitive activity at hand and how successfully this information available will be used to achieve the goal or tasks. Another aspect of task concerns the demands of the task. For example, given the same amount of information, some tasks are more demanding than others. Metacognitive knowledge about strategy concerns the selection of strategy that is likely to be effective in achieving the task. Flavell and Wellman (1977) also emphasise the knowledge of the value of alternative strategies that can effectively enhance performance. Metacognitive knowledge can affect the thinking and learning of students by influencing the way they choose, evaluate, change, or abandon cognitive tasks and strategies. In portfolio assessment using the Portfolio Assessment Package, students will need to use their metacognitive knowledge to assess the requirements of the assessment task in relation to their prior knowledge, skills, interest and abilities. Students will note the information and skills needed in the task and select a strategy that best suits the task, taking into account their strengths and limitations so that the task can be completed successfully.

Metacognitive experiences can be described as metacognitive knowledge that has entered consciousness. Another way of looking at metacognitive experiences is, as the emotional component of cognitive self-appraisal (Flavell (1985). It adds emotional 'colour' to the student's self-appraisal of themselves as learners to include feeling such as doubt and helplessness or confidence and self-assuredness. Metacognitive experience affects cognitive tasks, metacognitive knowledge, and cognitive strategies in the

following ways. First it influences the students to establish new goals or to revise or abandon old ones. Second, metacognitive experience adds, deletes or revises the metacognitive knowledge base. Finally, metacognitive experiences activate strategies aimed at cognitive or metacognitive goals. An example of the former is when a student feels (metacognitive experience) that s/he does not understand a chapter, s/he decides to read through it again (cognitive strategy). An example of the latter however, is when the student feels (metacognitive experience) that s/he does not understand the chapter s/he reads, s/he decides to ask himself/herself questions about it and noting how well s/he can answer them (metacognitive strategy). Flavell (1979) says that cognitive strategies are used to make cognitive progress whereas metacognitive strategies are used to monitor progress. In portfolio assessment metacognitive experiences will be practised by students when students perform self-assessment and peer-assessment and based on these feedback make revisions to their task responses.

Studies have shown that the direct instruction of metacognitive strategies can increase learning (Scruggs, Mastropieri, Monson and Jorgenson, 1985, & Palincsar, 1986). Palincsar reiterated that studies suggested that when students knew the value of what they were learning, the applicability of the skills learned, and how to monitor the use of the skills learned, they not only acquired the skills more easily but were also able to retain them and use them appropriately whenever necessary. Although students' metacognitive knowledge and metacognitive experiences about the tasks and strategies can influence their thinking and learning, students however rarely question themselves about their learning strategies or their performances. It is therefore necessary to

investigate how metacognition can be developed in students, so that students will manifest such behaviour through their work.

*An important practice in developing metacognition in students is to get students to plan their work prior to starting their work. Teachers can help this process by deliberately pointing out to students the strategies, steps, rules and directions needed to tackle an assessment task. If teachers spelt out the guidelines or drew parameters within which the students are supposed to work, it can help students when they are working on their problems as well as in evaluating their work upon completion (Costa, 1984). Students should also learn to plan their tasks by estimating the time required to complete the task, organising the material available, and sequencing the necessary procedures (Blakey and Spence, 1990).*

Teachers could help students develop metacognition by encouraging them to ask themselves questions before they begin their work or while they are doing their assignment. When students generate their own questions, it can help them comprehend better what they are reading or doing. It also makes students pause to think about whether they understand a concept, or if they can link what they are learning to their prior knowledge, or if they can contribute their own examples. By questioning themselves, students become more self-regulated and take conscious control of their own learning (Sanacore, 1984).

Costa (1984) also suggested that teachers could help promote metacognition by letting students discuss the consequences of their decisions. Students will also get to see a problem from different perspectives if teachers provided non-judgemental comments. Besides that, teachers could also get students to assess their decisions using multiple

criteria. This means that students could be encouraged to state what they liked about their choice in addition to what they did not like about their choice, or what they thought was good about their selection of strategy besides the weaknesses of the strategy selected. This could be complemented with feedback from peers to reaffirm their self-assessment. In this way students will get to see the worth of their decision from multiple perspectives. Peer- and self-assessment are powerful tools that can be used to develop metacognition in students.

Another way to promote metacognition is for teachers to provide support to students so that they can shed away feeling of helplessness. Students should learn to abandon the notion of “I don’t know” or “I don’t understand” the moment they see a task that is different or unfamiliar. The students, with the guidance of the teacher can break down the task into smaller components. This will enable them to see clearly what information and skills are required to complete the task. The students will then be aware of the information and skill that they do not have or are lacking in. In this way, students will be able to identify their limitations. They can then either work within these limitations or take measures to overcome them.

Paraphrasing one another’s ideas can also help develop metacognition (Costa, 1984). This can be cultivated through group work where students can paraphrase what their peers have said in order to become not only better listeners of others’ thinking but also clarify their own thinking. In relation to this, Blakey and Spence (1990) recommended *paired problem solving*. In *paired problem solving* one student describes the thinking processes while he/she is solving the problem. The other student listens and asks questions in order to clarify what is unclear. *Reciprocal teaching* similarly can be

used to vocalise thinking (Palincsar, 1986). In reciprocal teaching students work in small groups, each taking turns to play teacher, ask questions, clarify and summarise the material being studied.

Teachers can also promote metacognition by labelling students' behaviours (Blakey and Spence, 1990, & Costa, 1984). This will make students more conscious of their actions. Besides that, teachers could ask students to clarify vague terminologies like "I think it's good", "It's not fair", or "I like it because it is nice". This will make students think about the reasons upon which they based their statements.

Keeping journal is yet another way in which students can be encouraged to put their thinking processes into words. In their journals students can reflect about their thinking, about what was unclear or inconsistent in the problem they solved, and relate how they handled the difficulties.

According to Costa (1984), one of the most effective ways in which teachers can promote metacognition is through modelling. Through modelling teachers can share their planning with students by thinking aloud their cognitive actions. In addition, they can illustrate through their errors how to get back on track, and can seek feedback and opinions from students for their actions. Modelling also helps students develop the vocabulary needed for thinking and for describing their thinking.

How can we know if a student has metacognitive abilities? Students with metacognitive abilities would be able to describe their thinking. They would be able to relate the procedures that they followed to solve a problem or where they are presently in the process of completing a task. They will be able to tell what is missing, and what needs to be done to complete the task or to improve it (Costa, 1984). These can be



manifested through students' self-assessment, peer-assessment as well as their reflections in their portfolios.

The discussion above indicated that portfolio assessment using the Portfolio Assessment Package is suitable for developing metacognitive abilities in students. Besides using self-assessment, peer-assessment and reflections, which are important components of the Portfolio Assessment Package, the assessment tasks of the Portfolio Assessment Package itself, encourage students to use their metacognitive abilities.

### **3.2 Cognitive Apprenticeship**

Another component of the conceptual framework is cognitive apprenticeship. What is cognitive apprenticeship? Casey (1996, p.75) defines it as a methodology that provides a framework for “analysing and sequencing content and developing appropriate strategies for learning in a distributed and diverse environment”. The environment in question must be authentic. For the environment to be authentic, it should portray certain characteristics. Students should be able to actively participate in gathering and processing relevant information. Students must also understand clearly the problem or task that they are dealing with. Abstract information on the subject, which is how it appears in textbooks and lecture notes, should be related to real situations so that the student is able to get to and use the relevant information. Students should also immerse themselves in the context of the subject so that they will be able to learn more effectively (Casey, 1996).

The environment that is going to be created through portfolio assessment using the Portfolio Assessment Package reflects the kind of environment that will complement cognitive apprenticeship. Portfolio assessment of Local Studies using the Portfolio

*Assessment Package* will require students to understand the tasks or problems they are dealing with. They will need to understand what it is that they know and do not know about the task. Then they will need to seek the necessary information and process it. This will expose students to a variety of ways to gather information besides their textbooks, as well as inform them that there is more than one source of information. With guidance from the teacher, *abstract information will be linked to real situations* so that students can relate to them and use them. Students will also be ‘immersed’ in the context, by simulating and practising real-life situations within the context of the school and the local community.

In order to understand better how cognitive apprenticeship relates to portfolio assessment using the *Portfolio Assessment Package*, *there is a need to examine the various characteristics of cognitive apprenticeship*. Collins (1991) described six characteristics of cognitive apprenticeship.

The context in which the specific knowledge or skill is being learned is important in cognitive apprenticeship. Collins used the term *situated learning*, which he explains, is the context in which learning occurs, which should reflect the way the knowledge and skills will be used in real life. Context can be taken to include any object or agent, such as people, tools or environment that can create a problem-solving relationship through interaction (Young, 1993). In the case of Local Studies, the context includes among others being a map maker, working in a meteorological station, predicting consequences of man’s actions on the environment, and playing the role of an explorer cum trader of a foreign land who is making *preparations to come to fifteenth century Malacca*. Situated learning can incorporate both theoretical as well as real-life situations. One of the benefits

of grounding learning in a situated context, is that students can relate what they are learning to a specific context. They will also be able to apply the knowledge and skills acquired to other novel situations. Through situated learning students will see the use for the knowledge and skills they are learning. This will also help them to remember what they have learned better as they will store the information in a usable context.

Another characteristic of cognitive apprenticeship suggested by Collins is modelling and explaining. Modelling is showing how a process occurs and explaining is providing the reasons behind the occurrence. Casey (1996) describes modelling as the act of reproducing the thought process of the expert for the learner to see. Modelling can benefit students by enabling them to see how experts solve problems. Also through demonstrations or process descriptions they can integrate what happens with why it happens. Modelling also opens up parts of processes for students to 'visualise', which they would otherwise not be able to see, like how the teacher thinks through a process of problem solving.

Coaching is another characteristic of cognitive apprenticeship. It is described as the process whereby teachers provide students with assistance when needed as they carry out their tasks. For teachers to recognise a situation that requires help, they need to observe students at their work. Coaching can help to remedy real difficulties encountered by students. This is because through observation the teacher can identify the specific problem that the student is encountering. It also provides help when it is most needed. This makes students aware of the critical situation they are in and the solution to it. Through coaching students can tackle task that they would otherwise not be able to do. This is because the teacher will provide the student with help up to a point whereby the

student will be able to complete the task on his/her own. The teacher progressively hands over to the student more control over his/her work while simultaneously fading or retreating from the scene. Collins, Brown, and Newman (1989) and Casey (1996) refer to this as scaffolding and fading. Coaching also broadens a student's perspective of how to solve problems as they learn to see things from different angles put forth by the teacher.

Reflection, which is yet another characteristic of cognitive apprenticeship, is described by Collins (1991) as the process through which students look back at what they have done and use the information to analyse their performance. It also allows them to compare the processes they have used to solve problems with those of others like that of the teacher and peers and ultimately with their own 'expert' model that they have internalised. Reflection can benefit students by enabling them to regard their performance not as an end in itself, but rather as data to be analysed and used to improve their performance. Students begin to look at alternative ways of doing things. It also makes them open their eyes to see how others do things differently or how the expert undertakes a task. It is a means through which students can describe their metacognitive strategies.

The fifth characteristic of cognitive apprenticeship as suggested by Collins (1991) is articulation, which is the method used to make students vocalise their tacit knowledge. It is an opportunity for students to demonstrate and explain their knowledge and skills. The process of articulation allows students to generalise knowledge derived from a particular context to that of other circumstances. It also gives students a better understanding of the minute processes in problem solving, so that they can apply them to other situations when the need arises. Articulation also enables students to see how

similar strategies can be used in different contexts. In addition, students are able to see how others perform their tasks when other students articulate.

Lastly, through *cognitive apprenticeship*, students have the opportunity to explore various hypothesis, methods and strategies. This allows students to choose problems that are within their realm of achievement, to study. They also learn to formulate hypothesis or rules, which are skills attached to the real world. Students can then test their own ideas and see if they are correct or workable.

Having examined the characteristics of cognitive apprenticeship, it can be assumed that portfolio assessment of *Local Studies* using the *Portfolio Assessment Package* is strongly influenced by the characteristics of cognitive apprenticeship. First, this is illustrated in the assessment tasks of the *Portfolio Assessment Package*, which is developed so that students can practice certain skills in diverse settings. The conceptual and factual knowledge embedded in these tasks show students how this knowledge can be applied to various contexts. The development of student portfolios requires a sequence of activities, which are of increasing complexity. This is another characteristic of tasks and problems used in cognitive apprenticeship. In the development of student portfolios, students need to collect their assessment tasks, which include their first work as well as the revised version. In addition, students are also required to keep feedback from teacher, peer- and self-assessment. Later students will select three pieces of work from their collection: one piece that represents their best work, one that represents their worst piece of work and another that contributes to the most learning. These three pieces will be accompanied by their reflections. When reflecting students need to assess their work and

provide reasons for selecting the pieces of work that they have chosen. The process of collecting, selecting and assessing is a sequence of steps that are progressively complex.

Second, cognitive apprenticeship encourages a learning-through-guided experience on cognitive as well as metacognitive skill and processes (Collins et al., 1989). This is because cognitive processes, which are carried out internally, need to be externalised before the teachers can guide students to make adjustments to their skills and knowledge concerning the task or problem. In this way tacit processes of thinking are made overt, so that teachers can guide students to observe, and practice these skills. In portfolio assessment using the Portfolio Assessment Package, students and teachers enact this through students' self-assessment and reflections.

Third, cognitive apprenticeship and portfolio assessment using the Portfolio Assessment Package both encourage the development of reflection. In cognitive apprenticeship students are encouraged to compare their skills with that of the expert. Besides that the students are also encouraged to develop self-monitoring and self-correction skills. This will allow them to try out alternative activities while they are working on their task. This is achieved by developing a 'producer-critic dialogue', which students learn to internalise. Interaction between students and teachers through discussions, students playing the role of the teacher, as well as group work can help students develop this skill.

Cognitive apprenticeship has made learning more collaborative, situated and distributed in the way information is gathered. Assessment must therefore change accordingly to suit the learning environment. It should be integrated, ongoing and seamless with the learning environment. This is the environment that portfolio

assessment using the Portfolio Assessment Package needs, so that students can perform efficiently in a non-threatening learning–assessment environment. Besides this, assessment should also focus on the process besides the product (Case, 1985). Learning through cognitive apprenticeship also emphasises multiple ways of solving problems. Thus assessment should shift from focusing on one correct answer to emphasising the information that students gather for each task (Young, 1993). The assessment criteria of the Portfolio Assessment Package focuses on information that students have gathered, their *organisation and development* of the information, their presentation of the information, and the *social skills involved in gathering the information*.

Portfolio assessment of Local Studies using the Portfolio Assessment Package is an integration of learning and assessment. This assessment method clearly complements the cognitive apprentice teaching-learning methodology.

### **3.3 Collaboration**

Portfolio assessment using the Portfolio Assessment Package requires an environment, which is non-threatening. This is to enable students to learn and be assessed without fear of being ranked, labelled or face the anxiety of taking tests that are a separate entity from instruction. Such an environment can be created through collaboration.

Collaboration can be described as a process whereby participants mutually work together to solve problems. It is a co-ordinated and synchronised activity resulting from the effort of participants to continuously build and maintain a common understanding of the problem to be solved. In contrast, co-operative work is done by individuals working in a group who are responsible for accomplishing a portion of the problem solving task. It

is based on a division of labour (Roschelle and Teasley, 1995). The emphasis of collaboration, however, is its *non-division of labour*.

The best way to practice collaboration would be to create a collaborative classroom. *What are the characteristics of a collaborative classroom?* A collaborative classroom is said to have four general characteristics (Tinzmann, Jones, Fennimore, Bakker, Fine and Pierce, 1990). The first characteristic is that in a collaborative classroom knowledge is shared between the teacher and the students. The teacher is regarded as having more knowledge about contents, skills and instruction than the students. However, the teacher acknowledges that students also bring with them knowledge about skills, experiences and cultures that are related to their life. The teacher values and builds on this knowledge that students bring to the learning situation.

The second characteristic of a collaborative classroom is that besides knowledge, authority is also shared among teachers and students in specific ways. Authority is shared with students by allowing them to take more control over their work. The teacher then provides guidance and encouragement to students to set goals for task completion, to assess their own work, to use their own knowledge and at the same time, to share it with others. Students are also encouraged to listen to others' opinion, to substantiate their claims with evidence, indulge in critical and creative thinking and in meaningful dialogues. In this way students become more self-regulated.

In a collaborative classroom where knowledge and authority is shared between the teacher and students, the teacher increasingly plays the role of a mediator. As a mediator, the teacher helps students relate new information with their previous knowledge, guides them when they are stuck with a problem. Students and teachers bring



information from various sources to the learning situation. The teacher as a mediator helps students by adjusting the level of information to that of the students' understanding and needs so that the student is able to use the information optimally.

The fourth characteristic of a collaborative classroom is that it does not segregate students according to their ability, achievements or even interest. Students come to the learning situation with varied perspectives, backgrounds and experiences and they are encouraged to share these with other students and to learn from others as well. Groups comprising of 'mixed' students or heterogeneous groups form the backbone of the collaborative classroom.

A collaborative classroom can be summarised as a place where knowledge and authority are shared, where the teacher is a mediator and where students work together in heterogeneous groups. The main participants in a collaborative classroom are the teacher and students. For students to be able to participate in learning and assessment in a collaborative environment, each of the participants of the collaborative classroom should play their specific roles.

According to Tinzmann et al. (1990), the teacher's role in a collaborative classroom is to mediate learning through dialogue. This was also advocated by Palinscar and Brown (1989) who said that through dialogues students could communicate their uncertainties, ask questions and share their knowledge freely without fear of criticism. These dialogues gave the teacher cues about what students needed and were ready for. Based on this information the teacher could then model the relevant thinking strategies effectively. Tinzmann et al. (1990) explained that mediation in a collaborative classroom is carried out through *facilitating, modelling and coaching*. *Facilitating* is the process

through which the teacher creates the environment as well as activities for students to connect new information to their previous knowledge, provide students with the opportunity to work collaboratively to solve problems, and offer students a variety of authentic learning tasks. The rich environment created by the teacher also includes organising students into heterogeneous groups with each member of the group playing different roles. The classroom environment is structured with rules to promote communication and collaboration among students. The rules encourage students to participate, to value peers' comments and to argue for or against ideas and not people. The activities or tasks created by the teacher are aimed at encouraging students to be involved in high-level thought processes such as decision-making and problem solving, which require students to work collaboratively. These tasks also enable students to relate to real world objects, events and situations using their own diverse perspectives and experiences.

Modelling is the process of sharing one's thinking and demonstrating or explaining something (Tinzmann, et al., 1990). Thus in a collaborative classroom, the teacher will share with students his/her thoughts about the contents of the lesson, as well as the processes of communicating and learning through collaboration. The teacher may think aloud the contents, the thinking processes or his/her doubts or demonstrate it in a step-by-step fashion.

Through coaching the teacher will provide students with hints or cues, provide students with feedback, help students make changes and use particular strategies. The main principle of coaching is to provide students the right amount of help so that they do

not become dependent on the teacher and retain as much responsibility for their own learning as possible.

In unison with the teacher's role as mediator, the student's role in a collaborative classroom is that of an active participator where students set goals, work with peers, monitor their own progress, assess their own work and plan for future learning (Tinzmann et al., 1990). Although the assessment tasks are predetermined, students can still set their own goals on how to complete the tasks, source for information and how to present their work. Teachers can help students to select strategies that suit the student's abilities and knowledge. In this way students see the purpose of the task and therefore engage in it with more interest than they would in a traditional classroom. Students also take more responsibility for their own learning by monitoring their progress, adjusting their work, and questioning themselves as well as their partners or group members. In other words students learn to self-regulate their learning. Self-regulating abilities can be further enhanced by sharing ideas with students from other groups and getting feedback from them (Tinzmann, et al., 1990).

Collaborative classrooms also view assessment more broadly than traditional classrooms. Self-assessment is an important characteristic of a collaborative classroom. Through monitoring, students check on the progress they are making towards achieving the goals they have set. Based on their monitoring, they then regulate their work by making changes. Self-assessment is closely related to monitoring and regulating one's own work. It includes assessing what has been learned, how effective were the strategies used, the quality of the products, decisions about selecting one's best work, the usefulness of the material used in the tasks and if more learning is required and how that

learning can be realised. A collaborative classroom is a natural place to develop self-assessment (Tinzmann, et al., 1990). The co-operative atmosphere of work makes students feel free to express their doubts, successes, unanswered questions and uncertainties. The non-threatening and sharing atmosphere of collaborative classrooms help students evaluate their own work as well as the work of their peers.

The teachers and students' roles in a collaborative classroom can be summarised as follows: the teacher as a mediator uses dialogue to facilitate, model and coach students in a collaborative classroom. Students on the other hand actively participate in the learning and assessment process through goal setting, monitoring and self-assessment, so that they can become self-regulated learners.

Butler and Winne (1995) defined self-regulation as a style, which students use to engage in a task. Schunk and Zimmerman (1994, 1998) elaborated further by saying that it can be referred to as a process used by students to attain their goals. They do so by systematically directing their thoughts, feelings and actions towards that end. It involves important skills such as goal setting to gain knowledge, choosing strategies that can effectively solve the task, and monitoring the completion of the task. In other words a self-regulating student is one who is aware of his/her own knowledge, motivation and cognitive processing. A self-regulated student is therefore an effective learner. A self-regulated student, when given a task, will set out to interpret the task requirements by drawing on his/her knowledge and beliefs. Having interpreted the task, the student will then set goals. The student will select strategies to match the goals so as to produce mental and behavioural products. The student will monitor the processes undergone as well as the product that progressively takes shape. The information that the student

gathers through monitoring will inform him/her as to whether the task needs to be reinterpreted. If so, the student will then modify his/her work by setting new goals or adjusting the old ones. The same applies to the strategies selected. Through self-monitoring of his/her own work, the student receives internal feedback, which he/she then uses to regulate his/her work. Subsequently, when the student receives external feedback from the teacher or peers, the additional information may confirm, add to, or conflict with the student's interpretation of the task. Therefore collaboration between students, and students and the teacher can provide external feedback, which the student can then use to regulate his/her learning.

In a collaborative classroom, interaction is vital. Communication between teacher and students is two-way. As has been stated earlier, dialogues are an effective way to communicate and interact. Dialogues help to vocalise students' thinking. When a student finds a solution to a problem, other students can learn from it much faster than they would, if they were working alone. In a true discussion, students talk to each other, as well as their teacher. Besides that they also listen to different view points and deal with questions that have no one correct answer. In the process of discussion, the teacher or students may even change their opinion about an idea.

In relation to dialogues, Palinscar and Brown (1989) added that, to encourage joint responsibility for dialogues, students should take the lead in discussions. They advocated a method of taking turns to 'play teacher' called reciprocal teaching. They suggested four strategies for reciprocal teaching: predicting, question generating, summarising and clarifying. These four strategies are appropriate for the domain in which they used it, that is for text comprehension. However, these strategies are also found to be

applicable to Local Studies. Predicting helps students link their prior knowledge to new information. While developing their questions encourage students to ask rather than merely to respond to teacher's questions all the time. By summarising collaboratively, students learn to integrate what they have learned. Subsequently, when students clarify their statements, it helps them monitor their own learning as well as share their uncertainties and confusions. The theoretical basis for reciprocal teaching is to enable students to make sense of what they are learning. It is also to help them monitor their understanding. The strategies to be used are jointly selected by the teacher and students. The teacher will progressively transfer the responsibility of using the strategy to students. However, the teacher will continue to support students' participation in discussions by providing prompts. The teacher then consciously releases control of the dialogues to the student (Palincsar, Ransom and Derber, 1988/89). Reciprocal teaching is a good way to ensure interaction between the teacher and students and between students themselves. As students take more control of the discussion, the sessions gradually become dialogues. Through the dialogues, the students support each other by prompting the use of a strategy, applying it, verbalising it, and then commenting on its application.

The collaborative classroom is therefore the most suitable place to practice portfolio assessment using the Portfolio Assessment Package. Portfolio assessment requires a learning-assessment environment, which is seamless so that assessment like learning can be a collaborative activity. The collaborative classroom hopes to promote learning and assessment through interaction as opposed to competition. Portfolio assessment using the Portfolio Assessment Package emphasises collaboration and integration between students as well as between the teacher and students, through

discussion, group work, and dialogues. Besides that the assessment criteria of the Portfolio Assessment Package also emphasises collaboration and group work as one of its criteria, in addition to acquisition of knowledge, thinking and presentation.

Although collaborative group work is an important part of portfolio assessment using the Portfolio Assessment Package, the question that most people ask is: "Are primary school children capable of participating effectively in such a situation?" The literature shows that children are able to benefit from collaborative group work. It was found that children as young as infants were capable of being involved in extended discussions (Tough, 1977). Lyle (1993) commented that when children were involved collaboratively in small groups, they developed a better understanding of things than if they worked alone. In fact, it was indicated that older children were capable of practising complex procedures and thinking skills when they worked in collaborative groups (Biott, 1987). Galton and Williamson (1992) concluded accordingly that collaborative group work held tremendous benefits for all children irrespective of their ability, gender, or race. It also contributed positively to the children's self-esteem and motivation. The World Studies 8-13 Project showed similar results in favour of collaborative group work for children (Harwood, 1995).

In order to be convinced that primary children can actually benefit from collaborative group work, the findings of the World Studies 8-13 Project, which was set up in the United Kingdom in 1980, will be examined. In this project, the children worked in collaborative groups where each pupil shared and collaborated with others on the same task to produce a common decision. The teacher however only supervised the small groups from time to time. Later, in a debriefing session, a class discussion was held so

that the students could listen and comment on the ideas of the other groups (Harwood, 1995). There are several likenesses of the World Studies 8-13 Project in this study. First, it involves primary school students; Second, the research project examined the effects of no teacher supervision on collaborative group work. This particular aspect was also experienced in this study where the sample class population comprised of thirty-six students and the class had nine collaborative groups. The teacher therefore had to stagger her attention between the nine groups. This meant that students had to work on their own while the teacher was supervising the work of another group. When conducting collaborative group work, the teacher also held debriefing sessions. During this time the whole class would be addressed and each group would then present their ideas for the others to comment on. Thus the findings of the World Studies 8-13 Project can to some extent be generalised to this study.

Among the findings of the World Studies 8-13 Project, it was found that irrespective of whether the teacher was attending to the small groups, the children normally displayed 'on-task' behaviours. Another interesting finding suggested that primary level students are capable of initiating their own new ideas and responding to that of others during discussion, when the teacher was not present. What was especially interesting was that the reverse was true when the teacher was present. In the presence of the teacher, the student tended to depend on the teacher and actually stopped contributing their ideas. However, the research finding sadly indicated that students seldom questioned each other's ideas or views. When the teacher was present, students directed their questions to the teacher instead of their group members. Another point of concern was that, when the teacher was not present, students seldom substantiated their ideas with



reasons or evidence. It was found that the students did that, not because they did not have the relevant evidence, but because they did not see the necessity to do so, without the teacher asking for it. Harwood (1995) pointed out that although children may have the basic skills for engaging in discussions and decision-making, they usually do not know how or when to use them when working with their peers. He therefore suggested that especially for the initial stages of collaborative work, the teacher should spend more time with the students. In this way the teacher can model the communication skills, which are important for collaborative group work such as listening, questioning, challenging, supporting, giving explanations and evidence, summarising and checking for consensus. Harwood further emphasised that only after students had learned the necessary skills will they be able to monitor and assess the processes that they have used and be able to regulate their own learning. Another aspect of collaborative group work that needs the attention of the teacher is the debriefing session. This is undoubtedly an important session in collaborative group work. During the debriefing session, the teacher will ask students challenging questions, which will help them understand their own discussions. The teacher may also need to correct certain conceptual misunderstandings of the students, as well as summarise the discussion session.

From the above discussion, it can be concluded that establishing a collaborative classroom is unanimously beneficial to practising portfolio assessment using the Portfolio Assessment Package. It is also within the capability of primary level students to benefit from such a learning and assessment environment.

### **3.4 Conclusion**

The discussion on the conceptual framework shows that the Portfolio Assessment Package is developed based on the concepts of *metacognition*, *cognitive apprenticeship*, and *collaboration*. These concepts were also the cornerstones for the development of portfolio assessment as practiced in other locations (examined in Chapter two). Based on the practices of other institutions with portfolio assessment, the concepts of *metacognition*, *cognitive apprenticeship*, and *collaboration* were adopted and adapted to form the conceptual framework for the Portfolio Assessment Package. *Metacognition* was promoted through students' self-assessment, peer-assessment, and self-reflective practices, which were an integral part of the Portfolio Assessment Package. Students learnt through *cognitive apprenticeship* when the teacher provided coaching to students as and when they needed it. Besides that students also learnt through their self-reflective practices. Students practised *collaboration* when doing the Assessment Tasks, as well as when practising self-assessment, peer-assessment and reflection. In addition to that, students also revised their work in a collaborative environment, based on feedback that they received from both the teacher and peers. Hence, *metacognition*, *cognitive apprenticeship* and *collaboration* provided the conceptual foundation upon which the *Portfolio Assessment Package* was designed.