CHAPTER TWO

REVIEW OF LITERATURE

In this chapter the literature on portfolio assessment will be examined. The review will examine six cases of portfolio assessment, and discuss three dominant features that influenced the design and development of the Portfolio Assessment Package, that is, feedback, higher order thinking, and self- and peer-assessment.

2.1 Portfolio Assessment

Portfolio, as used in the South Brunswick portfolio project, refers to a system of record keeping by the teacher (Salinger and Chittenden, 1994). The records deal with evidences of students’ performances in the classroom. These evidences were used by the teacher for purposes of instructional planning, diagnosis and reporting to parents. In this case, portfolio assessment provides a broader picture of the child and enables the teacher to gauge the child’s progress over a period of time. In addition, the evidence of students’ work provides a more solid back-up to support the teacher’s decisions and comments.

According to Paulson, Paulson and Meyer (1991, p.60), a portfolio is:

... a purposeful collection of student work that exhibits the student’s efforts, progress, and achievements. The collection must include student participation in selecting contents, the criteria for selection, the criteria for judging merit, and evidence of student self-reflection.

This definition shows that portfolio assessment charts students’ development. It involves students’ participation and promotes self-reflection.
McAfee and Leong (1997) however regard portfolios not as an assessment method but rather as a compilation of evidence to document the development and learning of the child over a period of time. The purpose of collecting this evidence is more confined to reporting as opposed to the wider purpose of portfolios as in the South Brunswick portfolio project. Although portfolios are not an assessment method, McAfee and Leong agree that the portfolio does provide a basis for assessment. This is because before the child's work is selected to be included in the portfolio, it is being assessed based on the purpose of the portfolio. According to them, the items in the portfolio are not static, in that they do not lie dormant in the portfolio but rather they are used as a guide to spur further learning and development. In short, McAfee and Leong view portfolio as a way of keeping particular information generated from various methods of assessments and used for further learning and development.

Farr and Tone (1998), on the other hand describe portfolio assessment simply as saving students' writings so that the student and the teacher can see how the student is progressing. However, they go on to explain that portfolio assessment can reflect, promote and report on the amount of thinking that a student has put into developing the contents of the portfolio. It displays who the owner of the portfolio is becoming as a learner and a thinker. Farr and Tone (1998) call the portfolio a metacognitive laboratory that is directed by a developing self assessor. Besides that, it can be used to inform the teacher about the students' progress as thinkers and communicators while at the same time providing information about how effective their instruction has been and what additional emphasis is needed to enhance instruction.
Herman, Aschbacher, and Winters (1992) in their definition of portfolios include three criteria of an assessment portfolio: the purpose for the assessment must be clearly stipulated; the basis for the selection of pieces for the portfolio must be stated; and criteria for assessing the portfolio must be stipulated and used when assessing the portfolio (in Simon & Forgette-Giroux, 2000). According to Simon and Forgette-Giroux (2000), portfolios are basically an assessment tool. They refer to portfolios as a collection of ongoing works that are selected based on guidelines and assessed by the students themselves after reflecting on their work to determine their development of a particular but complex competency.

Anselmo's (1998) research on students' experiences with portfolio assessment showed that students unanimously described the purpose of portfolios as a "place" to store their school work, and to help them organise their work.

Although portfolios have generally been described as a collection of students' work used to inform teachers and students about instruction and learning, it is quite apparent that portfolio assessment holds a slightly different emphasis to different people depending on the purpose of the portfolio. The purpose of the portfolio will determine what goes into the portfolio. The main features of portfolio described so far are that it contain pieces of evidence, is used to monitor growth over a period of time, involves the participation of students, and requires students to reflect on their work as part of the learning and assessment process.

The question of what is included in the portfolio is a major issue in portfolio assessment. Simon and Forgette-Giroux (2000) conducted a study on the use of a generic content framework to guide the selection of pieces for assessment in a portfolio. They
suggested that the contents of the portfolio should comprise cross-curricular samples of students' work that evidenced the development of the student from various aspects namely cognitive, affective, psychomotor, metacognition and other developmental dimensions of a specific yet complex competency like problem solving or communication. For example materials in the portfolio that evidence the cognitive aspect of a competency are related to the acquisition of knowledge and understanding of lower order (recall of information) and higher order thinking skills (application, analysis, synthesis and evaluation of information).

Besides material that evidence cognitive achievement, the contents in the portfolio also comprise materials that display behavioural or psychomotor skills. This could include activities like looking for material on the Internet or solving manipulative skills. The third type of contents in a portfolio should evidence the affective dimension. The portfolio should carry evidence of the students' attitudes and readiness in achieving a particular competency. These can include entries that relate to the students' reaction to specific problems, entries from the students' journal, and students' self-reports. The fourth type of contents that need to be placed in a student's portfolio is the student's self-reflection of his/her work. The process of reflecting on one's learning is metacognitive and it is an essential step towards self-regulating (Simon, and Forgette-Giroux, 2000).

Paulson and Paulson (1992) suggested three hierarchical steps to evidence metacognition through portfolios. First is through documentation, which is done by providing justification for the selection made as contents of the portfolio. The second step is through comparison. This is achieved by comparing the learning that took place in the process of completing the different pieces of work. The third step to evidence
metacognition through portfolios is through integration. This is achieved when the student are able to identify their personal learning styles and the progress that they have made by reflecting on their works. Lastly, the contents in the portfolio should reflect the progress that the student has made in achieving full development of the particular competency. This can be achieved by maintaining a paper trail of the students' progress. In other words it entails keeping a record or evidence of the students' works collected over a period of time to trace the development of the competency.

Simon and Forgette-Giroux (2000) concluded their study on introducing content framework to guide the selection of pieces for a portfolio, by suggesting that portfolios should move away from merely showcasing students' pieces if they were to suffice as an assessment tool. They also suggested that assessment should be limited to one worthwhile competency like problem solving or writing and it should be assessed across disciplines. Besides that, it was also suggested that in order to establish the achievement of an overall competency, special guidelines needed to be drawn up for the purpose of assessment, based on the five dimensions of portfolio contents.

The development of portfolio assessment is based on teaching, learning and assessment concepts. In order to understand what these concepts, that shape portfolio assessments are, six cases were reviewed. They were the Vermont Portfolio Project, the Kentucky Portfolio Project, the South Brunswick Early Literacy Portfolio, the Arts PROPEL Portfolio Project, the Jackson School case, and the Crow Island school case. What was the rationale for selecting these six cases to be reviewed? The six cases selected had several features that linked them to the Portfolio Assessment Package (PAP) that is being developed in this study. In all the six cases portfolio assessment was
implemented in schools. Some were designed for primary level (the South Brunswick Early Literacy Portfolio and the Crow Island School case), some for secondary schools (the Arts PROPEL Portfolio Project) while some for both primary and secondary schools (the Vermont Portfolio Project, the Kentucky Portfolio Project, and the Jackson Schools case). The Portfolio Assessment Package is being developed for use in schools, in particular primary schools. The subject for which portfolio assessment was developed in each of the case reviewed also differed: Mathematics (Vermont Portfolio Project, Kentucky Portfolio Project), writing (Arts PROPEL Portfolio Project, Vermont Portfolio Project, and the Kentucky Portfolio Project), literacy (South Brunswick Portfolio Project), Literature - reading and writing (South Jackson Elementary School and Jackson High School), and the assessment of portfolio across school subjects (the Crow Island School). In the case of this study, the Portfolio Assessment Package (PAP) is designed for Local Studies.

The review of the six cases illuminated the main features and concepts that influenced the design of portfolio assessment in their respective locations and the features and concepts that were relevant were then integrated into the design and development of the Portfolio Assessment Package. The six cases were also developed at various administrative levels but they were designed for classroom assessment. For example, the Vermont Portfolio Project was developed as a large-scale external assessment. In the Kentucky Portfolio Project on the other hand teachers developed and assessed the portfolio tasks, which were also used for accountability purposes (writing portfolio). The South Brunswick Early Literacy Portfolio Project was developed at the district level while the Arts PROPEL Portfolio Project on the other hand was developed for schools in
the town of Pittsburgh. Meanwhile the Jackson School case and the Crow Island case were developed at the school level. In the case of the Portfolio Assessment Package (PAP), it is being proposed as a school-based assessment where teachers would be involved in assessing the assessment tasks, which were developed by the researcher. However, the classroom teacher was encouraged to make changes to suit the needs and resources of his/her respective class. In other words, the Portfolio Assessment Package (PAP) was not static nor was it meant as a prescription for teachers to follow religiously, but rather it was “in process” changing with the needs of the individual classrooms and the teachers (Salinger and Chittenden, 1994). The six cases of portfolio assessment were used as examples already in practice, and salient features and concepts that influenced each of these cases were drawn, adapted and adopted into the design and development of the Portfolio Assessment Package (PAP).

2.2 Cases of Portfolio Assessment

Case 1: The Vermont Portfolio Project

The Vermont Portfolio project was introduced in the early 1990 for several reasons: first, to reduce practice of inflating scores which were characteristic of standardised tests using multiple-choice tests; second, it hoped to improve the quality of teaching; and third, it hoped to generate data about students’ performance that was meaningful, and at the same time comparable, at the school and district levels (Koretz, 1998). Basically it was introduced to bring about changes in curriculum and instruction. Portfolio assessment and ‘uniform’ assessment were the two main foci of the new assessment system. ‘Uniform’ assessment was a term coined to differentiate it from
standardised tests, which is commonly misinterpreted as multiple-choice test. Hence ‘uniform’ assessment in the Vermont programme practised standardisation in terms of its assessment tasks, the scoring of the tasks, as well as its procedures for administrating the tests (Koretz, 1998). Although standardized, according to Stecher (1998), teachers in the Vermont program could select their own mathematics problems for students to solve, and create their own rules for students to produce, review, and revise their work. The drawback of this practice was that the conditions under which students produced their portfolios varied tremendously.

The Vermont Portfolio Project was the first large-scale assessment programme that comprised portfolio assessment. It involved two subjects: mathematics (in grades four, eight, and ten) and writing (in grades five and eight). In mathematics, students were required to keep a collection of their work for a period of one year after which they selected between five to seven pieces of work, which represented their best pieces to be submitted for scoring. The pieces of work in the portfolio emphasised problem solving, conceptual understanding, and mathematics empowerment/dispersion (Stiggins, 1994, p.276). These pieces were then assessed in terms of two aspects, that is, problem-solving and communication proficiency. The dimensions for assessing problem solving were students’ understanding of the tasks and their selection of approaches/procedures/strategies used to solve the problem. Besides that, they were also assessed on how they reflected, and justified the methods that they used in solving the problems. The outcomes of students’ activities were also assessed. The dimensions for assessing the second aspect, that is, mathematical communication skills, were mathematical language, representations and clarity of presentations. Each of these seven dimensions was transformed into a four
point rating scale. Each level of the rating scale contained descriptions of successful work. The assessments of the tasks were conducted by the teachers and the students themselves.

The writing component of the portfolio comprised a single piece of work, which represented their best piece and other pieces of specified work. The best piece was scored separately while the other pieces were scored as a set. They were assessed on five aspects based on four levels. The five aspects were purpose, organization, details, voice/tone, and usage/mechanics/grammar (Koretz, 1998). Initially the writing portfolios were marked by the classroom teacher and rated again for the second time by other teachers. However from 1993 teachers who were not teaching the students assessed the writing portfolios. In other words both the mathematics and writing portfolios were supposed to depict students’ optimum performance (Stecher, 1998).

In terms of reporting the scores to the state, each of the dimensions was separately scored and then aggregated across the different pieces of work and across students. The state scored a random sample of portfolios, as resources did not permit them to score all the portfolios. These portfolios were again reassessed by a second assessor.

The initial problems of the Vermont Portfolio Project lay with the reliability of its scoring approach. An evaluation by RAND showed inconsistencies in rating the portfolio especially the writing portfolios compared to the mathematics portfolios (Koretz, 1998). However, after the assessors were trained and the rubrics for scoring the portfolios were refined, there was a tremendous improvement in the correlations between assessors especially in assessing mathematics portfolios. There was also a slight improvement in the correlations between assessors for the writing portfolios. Koretz, Stecher, Klein, and
McCaffrey (1994a) found that the selections of tasks by students also contributed to inconsistency of rating, other than difference between raters in scoring the portfolios. In relation to validity issues, it was found that the contents and level of difficulty of the tasks assigned affected students’ scores. Besides that, the teachers in the Vermont program also mentioned that different teachers implemented the tasks differently and this affected the validity of inferences made based on students’ scores. For example some teachers limited the amount of assistance that students could receive but others did not mention putting the brakes on the type and amount of assistance students received. This posed a problem when it comes to comparing students’ portfolios and their scores across students in different schools.

The problems incurred by the Vermont Portfolio Project were essentially unique to large-scale portfolio assessment. However, if portfolio assessment were to be used as an internal assessment, then it would not necessitate the comparison of students’ scores across schools. Also teachers will be aware of the level and kinds of assistance they have given to individual students and this will be taken into account when making judgments about students’ work (Koretz, 1998). Koretz sends out a reminder concerning the purpose of portfolio assessment. He says that the portfolio assessment is appealing in terms of improving instruction by means of its ‘authentic’ tasks, broader tasks (as opposed to testing isolated skills), away from standardization, and fostering interaction between assessment and instruction. These attributes could well clash with the aim of using the information obtained to compare students across schools.

On the positive side, teachers and principals involved in the Vermont program found that the mathematics portfolios positively influenced their instruction (Koretz,
Stecher, Klein, McCaffrey and Deibert, 1993). Research also showed that teachers changed the way they planned their lessons and delivered instructions. Besides that, it was found that the teachers also changed the way they organised their students by using more pair and group work (Koretz, Stecher, Klein and McCaffrey, 1994b). On the whole, teacher and principals felt that portfolio assessment was a worthwhile effort despite its problems (Koretz et al., 1994a). However not all teachers’ practices changed in the same way. What teachers found most burdensome was sourcing for suitable tasks, which however became less of a problem over time. What remained a problem was scoring the portfolios. It was reported that during the first year of implementation of the program, teachers spent an average of five hours per month on task related to scoring and evaluating students’ portfolios (Koretz et al., 1993).

It was interesting to note that most of the teachers involved in the Vermont program underwent training in the initial year after which they participated annually in workshops (Koretz et al., 1993). The state also provided teachers with on site support when they needed it. The training programme initially emphasised rules and procedures for compiling students’ portfolios. This emphasis then changed to sourcing for suitable mathematical problems for students to answer. In the second year of the project, the training program concentrated on scoring the portfolios.

What are the concepts that underpin the Vermont Portfolio Project? First, higher order thinking skills were the focus of the contents of the Vermont Portfolio Project as the tasks pertained to problem solving and conceptual understanding and the use of mathematical knowledge. Second, the dimensions along which the portfolios were assessed emphasised metacognitive skills and relevant communication skills. Students
were assessed on their understanding of the tasks, the selection of strategy for solving the tasks and their reflections on the approaches selected. Third, the underlying pedagogy used was authentic in that it required students to work in pairs or groups, use interdisciplinary skills, and solve tasks as they would in the real-world situation.

In relation to the use of authentic pedagogy for portfolio assessment, as in the case of the Vermont Portfolio Project, according to Valencia (1990), the goal of developing students' abilities should be to ensure that students could apply it in authentic ways that are real and meaningful to them. Nickell (1993) went further to relate authentic assessment to social studies when he suggested that in order to capture and evaluate students' knowledge, affective responses and skills in social science, the assessment tasks, contents and context should be closely linked to the real situation either in real life activities or through simulations. These assessment activities can be enacted as ongoing classroom activities or during instruction.

Case 2: The Kentucky Portfolio Project

The Kentucky Portfolio Project was implemented as part of a complex assessment system, with the intention of bringing about changes to the curriculum and instructions. This project covered two subjects, that is, mathematics (grades five, eight, and twelve) and writing (grades four, seven, and twelve). The Kentucky Portfolio Project like the Vermont Project comprised a compilation of students' best work and the scores that students obtained represented their optimum scores (Stecher, 1998). The mathematics portfolio was initially introduced for developmental purposes. In the second biennial it was included in the accountability index and later removed again. The writing portfolio
was meant for accountability purpose. The writing portfolio acted as a foundation for the writing course. For example, fourth-grade students were required to compile their work for a period of one year in a working portfolio. From this working portfolio students selected six pieces of work to be placed in the assessment portfolio. Students’ working portfolio comprised a poem, play, or piece of fiction; one informative or persuasive piece; one piece from any subject other than English and language arts; a best piece; and a letter to the reviewer about the best piece and the student’s ‘growth as a writer’ (Koretz, 1998). The contents of the writing portfolio for the other grades were slightly different. The assessment of the writing portfolio was based on six different aspects: purpose and approach, idea development, organization, sentences, wording, and surface features. The assessors scored the portfolios in general and not on the individual aspects and placed the portfolios on one of the four levels, that is, Novice, Apprentice, Proficient, or Distinguished. Hence the students’ portfolios carried only a single score.

The Kentucky Portfolio Project was a statewide project. However, the only aspect that was standardised was the scoring of the portfolio. The tasks and the rules for completing the tasks were determined by the teachers. In fact the amount of help that teachers, peers and other adults rendered to students in completing the tasks varied across teachers (Koretz et al., 1996, in Koretz, 1998).

Pankratz’s (1995, in Stecher, 1998) survey showed that principals were of the opinion that writing portfolios have the ability to influence instruction. Teachers were found to change the contents and their method of teaching in line with the objectives of the assessment project (Stecher, 1998). Portfolio assessment was also found to influence curriculum, in Kentucky. It was reported that 90% of the teachers at the elementary and
middle school levels matched the curriculum with the contents of the assessment. Elementary school teachers were found to spend more time on mathematics and writing and less time on other subjects. In mathematics they focused on problem solving and mathematical communication while in language arts they focused on writing for particular purposes and on evaluation of text. The middle level mathematics teachers also concentrated on developing mathematics ideas in students, problem solving and reasoning and getting students to use graphs and tables (Stecher, 1998). It can be said that teachers focused on higher order thinking skills as opposed to merely calculating and applying formulas. Principals also reported that their teachers were using less homogeneous grouping while the teachers reported that they were using new ideas in their planning (Koretz et al, 1996, in Stecher, 1998). Teachers said that they gave their students more tasks that allowed them to practice complex thinking and problem-solving skills (Stecher and Herman, 1997). However, the Portfolio Assessment Project brought about great changes to curriculum and instruction in Kentucky because the Portfolio Assessment Programme was implemented in relation to high stakes accountability. There were also financial rewards attached to schools that showed progress and penalties for those that did not meet targets repeatedly. Hence, it would not be appropriate to generalise the findings of the Kentucky Portfolio Project to low stakes portfolio assessment programs (Stecher, 1998).

In Kentucky, the teachers marked the portfolios of their own students and then sent a sample of portfolios to the state for remarking. The State put in a lot of effort to train teachers in scoring portfolios. The training programme included setting up resource centres, training at university level, educational television programmes, and team leaders
who were specially trained. Stecher (1998) quoted several sources in the United States and Britain, as saying that training should be provided in terms of years and not months. Teachers complained that scoring portfolios made great demands on their time (Koretz, Barron, Mitchell and Stecher, 1996, in Stecher, 1998). The training was especially necessary because in Kentucky teachers stood to gain by increasing students’ scores. This was found to be true when in 1994, that is the second year of the Kentucky Portfolio Program, trained independent assessors rescored thousands of portfolios and found that their mean scores were much lower that those awarded by the teachers who scored their own students’ portfolios’ (Koretz, 1998).

The time teachers spent on preparation of lessons also increased with the implementation of portfolio assessment. Teachers were said to spend more time in looking for appropriate tasks and in creating tasks that were in accordance with the requirements of the portfolio assessment for the different subjects. In the classroom, teachers spent time preparing students by teaching specific skills, helping students with their assessment task, seeing to the revision of their tasks, and helping them organise and manage their portfolios. As the length of the school day was fixed, Stecher (1998) reported that teachers found it a problem to complete the curriculum and resorted to ‘borrowing’ time from other activities.

The inherent weakness of the Kentucky Portfolio Project was that teachers started to ‘teach to the rubrics’ or as Stecher and Mitchell (1995) referred to it ‘rubric-driven instruction’. This was because as is normally the case, the rubrics were more well defined than the curriculum itself, which is made up of broad domains. Hence, teachers taught to the outcomes, which were explicitly stated in the rubrics. This was made worse because
the performance of schools in the Kentucky Portfolio Project were related to rewards and penalties. Therefore a point to remember in planning future portfolio assessment projects is that the goals in the scoring rubrics need to be closely linked to the curriculum and instruction.

What were the principles that could be emulated from the Kentucky Portfolio Project? First, the assessment tasks and the assessment criteria used in the mathematics and writing portfolios promoted higher order thinking skills. Second, the Kentucky Portfolio Project showed that portfolio assessment needs to relate to the curriculum, and instruction, otherwise teachers will tend to teach to the rubrics of the assessment. Third, training for teachers should be long-term especially training teachers to score portfolios efficiently in accordance to the assessment criteria. Fourth, it is advisable to refrain from attaching rewards and punishment to students’ performance on the portfolios as this will inflate assessment scores and defeat the purpose of portfolio assessment to improve students’ learning. Fifth, if portfolio assessment was introduced as a school-based assessment it will then be a low stakes assessment designed to serve the individual needs of schools. Therefore problems such as the different difficulty levels of the assessment tasks, different contents being assessed, and different degrees of assistance accorded to students by different teachers, will not become a major issue to contend with. In fact such variations are an important element of high-quality instruction, provided the purpose of the assessment is not to compare between students (Koretz, 1998). Lastly, teachers involved in the Kentucky Portfolio Project reduced the use of homogenous groupings in managing students in the classrooms.
Case 3: The South Brunswick Early Literacy Portfolio Project

The South Brunswick Early Literacy Portfolio was implemented in seven elementary schools in New Jersey. The early literacy portfolio covered levels from kindergarten to Grade Two. The South Brunswick Portfolio was developed and implemented at district level.

What mooted the development of this portfolio project? Teachers in the district felt that there was a need for a developmentally appropriate programme for children in the early grades. Teachers also began to realise that as classroom practices changed, there was a need for a corresponding change in assessment methods as well. Basically, they needed to keep track of what children were learning and accomplishing (Salinger and Chittenden, 1994).

The components of the Early Literacy Portfolio comprised "writing samples, story telling records, oral reading records, an invented spelling activity, sight word inventories, interviews with parents and students, and self-portraits" (Salinger and Chittenden, 1994, p.447). All these evidences were to be kept in an accordion-pleated folder, which was to become the student’s portfolio.

It was established that the purpose of the portfolio was to help teachers to document the literacy learning of children in a way that was sensitive to the individual child's capabilities and to ensure that no child was marginalized. This message was well depicted in a brochure on early childhood education (South Brunswick Board of Education, 1992), which stated:

... this method of evaluation not only gives a much broader picture of the whole child, but allows the teacher to track progress over a period of time. ..we take children wherever they are ... and move them forward as they

Teachers and researcher-consultants next developed a six-point scale of early literacy development to be used to assess the portfolios. The scale covered the development of a child from kindergarten until second grade. Each point on the scale was supposed to represent a phase in the development of the child’s abilities to retell and write. The descriptive scale shows what a child can do at a particular phase. Evaluation of portfolio content was done twice in the year.

The samples of portfolio were moderated by teachers from other schools within the district. In this process the new rater gave the sample portfolio a “blind” reading and then scored it according to the scale. The new rater only knew the child through the evidence in the portfolio. Interrater reliability of the South Brunswick Early Literacy Portfolio was found to be high (0.9). However, the teachers commented that they found the process of moderation most valuable. It was a chance for them to come together to review documents in the portfolios, as well as to clarify interpretations. Besides that, it also promoted a common language and a shared understanding of what was expected of them.

In order to find out how teachers were coping with the new assessment system, all teachers using the South Brunswick Early Literacy Portfolio in their classrooms were interviewed to examine their instructional practices. The teachers interviewed commented that they found that the portfolios contributed to their instructional decisions both directly as well as indirectly. By directly they meant that evidence or data from the portfolio helped them make specific decisions about specific children concerning specific activities. By indirect on the other hand, they meant that portfolios contributed to their
general understanding of literacy learning and child development. Their increased understanding helped them make decisions concerning the curriculum and classroom activities.

Besides helping teachers in their decision making, the portfolio project also opened up teachers' classroom practices for their colleagues to view. Teachers became aware of their colleagues' practices and expectations. The experience with portfolios in the South Brunswick project enabled teachers to establish a common language around assessment.

The teachers interviewed also raised the issue of management of portfolios. About half of the teachers interviewed felt that the issue of management was not a problem. They blended portfolio activities into their classroom routines. They felt that portfolios complemented with the daily classroom activities. One teacher had this to say about the use of portfolios in her classroom. "...it's a very non threatening way to test a kid ... this is good because they [the kids] don't even know they're being assessed" (Salinger and Chittenden, 1994, p.450). About one third of the teachers said that although they recognised that the portfolio assessment was worthwhile, they were nevertheless still concerned about the issue of management of portfolios. The remaining 15% of the teachers however felt that the issue of management was indeed problematic and this was coupled with their reservations of its worth in terms of effort.

Another issue raised by the teachers interviewed was on the need for training for teachers. They suggested that training should be provided early in the school year and it should focus on the procedures for using portfolio assessment as well as the underlying theory concerning portfolio assessment. The training should be for new teachers, teachers
who were new to portfolio assessment and those who wanted to upgrade their skills. One teacher highlighted the importance of sharing among colleagues as a successful practice in managing the portfolio system.

Having reviewed the South Brunswick Early Literacy Portfolio Project, the discussion that follows will focus on some of the concepts that structured the said portfolio project. The first concept that will be discussed is that of classroom assessment. For classroom assessment to remain dynamic, there is a need for it to be open to changes and improvement according to the changing needs of the classroom (Salinger and Chittenden, 1994). This is where tensions arise between the need for a stabilised assessment system where policy and practice are commonly understood, as in the case of a state or district mandated assessment program, and an open classroom practice where the changing needs and resources of the classroom are met.

Closely linked to the concept of classroom assessment and its need to be dynamic is the concept of evaluation. For any portfolio assessment practice to be truly useful, it is important that the practice is regularly reviewed and evaluated by the stakeholders, that is teachers, administrators, students and parents (Salinger and Chittenden, 1994). If portfolio assessment was not evaluated and adjusted, it will soon become static and routine. In the case of the South Brunswick Portfolio Project, the portfolio project was evaluated from the perspective of teachers’ classroom practices when using the said portfolio assessment. As one teacher in the South Brunswick Portfolio Project put it, portfolios should be kept “in process” or they will lose their rigor (Salinger and Chittenden, 1994).
Another concept that emerged from the review of the South Brunswick Portfolio Project is that of teacher training. Teachers who are new to portfolio assessment procedures should be given sufficient exposure before immersing them into classrooms that practice portfolio assessment. It will help teachers cope better and remove any anxiety and uncertainties that they may have about portfolio assessment.

The fourth concept that emerged is the management of portfolios. It is imperative that portfolio assessment be integrated as part of instruction and is practised as a daily classroom activity. This will ease the problem of ‘time out’ for assessment. Another management issue is the volume of material for the portfolio. Clearly spelt out procedural guidelines for each component of the portfolio are helpful. In the South Brunswick Portfolio Project, the guidelines were specific, at the same time it gave teachers flexibility to adapt procedures to the classroom practices (Salinger and Chittenden, 1994).

The final concept to be discussed is concerning the need to have and maintain a high interrater reliability. As with the South Brunswick Portfolio Project, this was ensured through moderation by teachers from other schools who “blind” read the sample portfolios and rated them on a given scale.

Case 4: The Arts PROPEL Writing Portfolio Project

The Arts PROPEL writing portfolio was collaboratively developed by teachers in Pittsburgh public schools where the project was subsequently carried out. The purpose of this writing portfolio was to enhance students’ learning by providing students and teachers with information that would otherwise not be available from students’ writings (Camp, 1993).
The portfolio was supposed to comprise a minimum of six pieces of student's work. One piece was an inventory of the student's past experiences with writing. Another was a piece of the student's writing, which the student regarded as "important". This piece was accompanied by a reflection, which was based on a series of questions explaining the criteria for selecting the piece and describing the student's experience in writing the piece. The third item in the portfolio comprised two pieces of work: one that the student considered "satisfying" and another that the student considered "unsatisfying". These two pieces were also accompanied by reflections that discussed the quality of each piece. The fourth item in the writing portfolio was a piece of writing that the student selected, which illustrated the processes and strategies that the student used for writing. This piece was accompanied by description of how the student composed the particular piece of writing. The fifth item in the portfolio was any piece of writing chosen by the student, accompanied with an explanation of why that particular piece was selected. The final item in the portfolio was a reflection of all the pieces in the portfolio and what changes the student had observed in his/her writing over a period of one year. Besides these items, parents' responses to open-ended questions concerning what they observed in their children's writing were sometimes included (Camp, 1993).

The Arts PROPEL writing portfolios were more than collections of students' writing. They were students' reflections of their work done over a year. Students reflected on individual pieces of writing as well as on their entire collection of writing. By doing so they examined the processes that they had used to produce their work, the reasons for the selections made, and their purpose for writing. Through reflection students became aware of what they valued in their writing and how they planned to
focus their next piece. The students' reflections were guided through the use of open-ended questions.

According to Camp (1993) reflections, which formed the core of the Arts PROPEL Writing Portfolio, influenced the classroom climate and the nature of teacher-student interaction. Through reflections, assessment and instruction became more integrated as teacher and students participated actively in articulating students' writings. This was especially true for the teachers who were involved in designing and developing the writing portfolio project. From this experience, it can be suggested that teachers' involvement in the design and development of portfolio assessment is a valued part of the teacher's professional development. Teachers played the role of moderators more than instructors.

A major challenge for portfolio assessment like the Arts PROPEL writing Portfolio, which was integrated with instruction, was creating an assessment method that would enable generalisation and comparison to be made across classrooms without sacrificing the valuable information that portfolios provide teachers and students. According to Camp (1993), it was necessary that the assessment criteria took into consideration the various ways that learning occurred through portfolios as well as those that emerged through students' reflections. Three categories were developed to assess students' writing portfolios. The first category focused on the quality of students' writings that students produced. The second category focused on the processes and strategies that students were aware of and used in their writings. Meanwhile the third category focused on the development of students as writers. Teachers judged the various
categories by observing students’ strengths as writers. They also gave recommendations on what the students should focus on for their future writings (Camp, 1993).

The discussion that follows will illuminate the concepts that emerged from the review of the Arts PROPEL Portfolio Project. The dominant concept that emerged is student reflection. Reflections made students aware of the processes and strategies that they used to produce a piece of writing. It also made students aware of their strengths and abilities as writers.

The related pedagogy that complemented the development of reflection in students was student-teacher interaction. Student-teacher interaction further enhanced reflection when it occurred in a classroom environment where instruction and assessment were integrated as a classroom practice. In the Arts PROPEL Writing Portfolio Project, this classroom climate provided students with a non-threatening, supportive environment with the hope of developing reflective writing skills.

Case 5: Portfolio Assessment in South Jackson Elementary School and Jackson High School

This study examines the practices of two teachers, from the South Jackson Elementary School and Jackson High School in Jackson, Georgia, with portfolio assessment. In a year long study of portfolio assessment by Kieffer, Faust, Morrison, and Hilderbrand (1996), they discovered that the process of developing portfolio assessment differs according to the purpose of the learner, audience, ownership, and the philosophical view of the teacher concerning learning and evaluation.

In the study that took place, teacher-researchers developed their own portfolios together with their students. The study made them realise that portfolio assessment is an
ongoing process that is flexible, non-linear and multidimensional. This is because its implementation depended upon the circumstances within each classroom. Hilderbrand, an English teacher from Jackson High School, described her experience in creating a portfolio as:

...a process that changes...I really do think it can be a way for teachers to change and become better teachers because it really changes the focus of what we do in the classroom (Kieffer, Faust, Morrison and Hilderbrand, 1996, p.2).

Kieffer et al. (1996) believed in the possibility that portfolio assessment can help teachers transform their classrooms into a coherent and supportive learning environment. Through the portfolio process teachers become aware of how learning occurred over time in a classroom community where students are included as active learning partners. The research pinpointed eight elements that can guide students and teachers in the portfolio process. The eight elements were questions, purpose, audience, expectations, collection, selection, organisation, and reflection.

The first element in the process of developing a portfolio is using questions to guide our thinking. Metacognitive questions like what students are learning, and why they are learning what they are learning, are some questions that students and teachers may ask. These questions make students and teachers reflect on their practices and actions in the classroom. They help students to vocalise their thinking and learning so that others can see what and how students think and learn.

Another element that helped students shape their portfolios was knowing the purpose of the portfolio and the audience/s for whom the portfolio was being prepared. For example, if the purpose of the portfolio was to inform students, parents and teachers (audiences) about what learning was taking place in the classroom (purpose), then the
portfolio should carry evidences to show the kind of learning that has occurred and how the student has grown as a learner and thinker. Hilderbrand, when commenting on the purpose for introducing portfolios in her classroom said, "What's been informing my teaching is the knowledge that [the students are] going to have to prove what they learned and therefore, I have to make sure that they've learned something" (Kieffer et al., 1996, p.5).

Audience or ownership of the portfolio was the third element that helped students develop their portfolios. The teacher-researchers found that when students were given ownership, they benefited by being able to show what they had achieved and what they were capable of achieving. This awareness was cultured through self-assessment and reflection. The teacher-researchers concur that collaboration between teachers and students, as students accounted and teachers responded through journals, conferences, reflections and self-assessments complemented portfolio assessment. Students needed feedback from various sources to inform them about their learning. The teacher-researchers found that portfolios were a good media for students to collect a variety of feedback (criticisms, support, comments) and from a variety of sources (teachers, peer, self). Students needed to communicate their thoughts to themselves and to others and this was provided for through portfolio assessment.

The fourth element in the portfolio process was the expectations of teachers and students. The Kieffer et al. (1996), felt that negotiation between teachers and students is important. Although student ownership is an important factor in the development of the portfolio, teachers also play a role as a collaborative partner. The teacher can jointly negotiate with students what items should be selected for the portfolio, help students
pursue their goals and provide support for students to complete their tasks. The teacher-researchers suggested that students could retain their ownership by determining the internal criteria (reasons for selecting particular pieces for the portfolio), while teachers could determine the external criteria through collaboration with students by virtue of the fact that teachers have more knowledge and experience. Teachers and students could jointly discuss and decide when and to what extent work needed to be revised and how to promote self-assessment of the process and product.

Other elements of the portfolio process relate to the collection and selection of students' work. The collection of students' work is supposed to be ongoing to reflect students' growth as learners. It is also determined by the purpose of the portfolio. For example, if the portfolio is supposed to reflect students' learning, then all pieces of students' work from the initial drafts to the revised version should be kept in the portfolio. These are contents of a process portfolio. On the other hand an assessment portfolio could be used to showcase the students' best pieces of work, or pieces of work that had the most impact on their learning. In selecting pieces for their portfolios, students need to view their work critically. In critically selecting pieces of work for the portfolio from a wide array of items, students will be required to practise discrimination in line with their internal criteria (own reasons for selecting) to fit a particular purpose. The teacher-researchers felt that students needed help in this area. They found that an effective way to help students was to demonstrate the idea by thinking-aloud the process of selection so that students could practise what they saw and heard. Morrison, a teacher from South Jackson Elementary School, described how she helped her students through the process of selection:
The focus ... is getting the kids to start creating portfolios... to see it as more than just a collection of good papers. So I modelled selecting something to put in my portfolio from some of the things that I have written recently, and just sort of talked through the process that I went through as I made my decisions (Kieffer et al., 1996, p.10).

Organisation of the portfolio, another element in the portfolio process, can become a critical issue for portfolio creators. The teacher-researchers found that learners used different ways to organise their portfolios. The organisation of a portfolio is influenced by its purpose, audience, collection and selection. For example a process portfolio can be used to show student’s growth over a period of time. In this case it allows for teacher, peer- and self-assessment to provide feedback. Based on the feedback received, students can revise their work. All these evidence can be organised in a meaningful way to show students’ growth as a learner over a period of time.

Lastly, reflection is perhaps the core of the portfolio processes for without it the portfolio constitutes merely a scrapbook of items. Reflections transform pieces of students’ work to a powerful document that represents students as self-regulated learners. The teacher-researchers felt that the processes of collecting, selecting and reflecting were strategies that involved students in documenting and assessing their own learning. When students reflect they make public the reasons for their choices and they explore other possibilities of learning and thinking.

From the review of South Jackson Elementary School and Jackson High School’s experience with portfolio assessment, several learning, and assessment concepts emerge as having influenced the development of portfolios in these locations. Kieffer et al.’s (1996) research found that eight elements were instrumental in influencing students’ development of their portfolios. There were the questions that students asked themselves
in the course of learning; the purpose of the portfolio; the audience or ownership of the portfolio; the expectations of teachers; the collection of students’ work; the selection of specific pieces; the organisation of the portfolio; and reflection. These elements include administrative as well as learning concerns. The administrative concerns related to the physical aspects of portfolio development. The learning and assessment concerns that affected the development of portfolios included metacognition, self-assessment and reflection, feedback from multiple sources, and collaboration.

On the issue of collaboration Kieffer et al. (1996) found that there was a need for a coherent and supportive teaching, learning and assessment environment where teachers and students are engaged in a collaborative partnership. This, they said was complementary to portfolio assessment.

In support of a collaborative classroom environment for portfolio assessment, Castelline (1996) in her study said that, teachers created a “portfolio culture” in the classroom, whereby students were constantly and consistently involved in self-assessment and also participated in portfolio conferences. Feedback from these activities provided teachers with information about students’ performances and students’ own perception of themselves as learners. Castelline’s (1996) study showed that teachers then used this information to change their own behaviours and their expectations of the students.

Assessment has been found to be more authentic when students are assessed by multiple assessors such as, teachers, peers and themselves through multiple means such as work in progress, observation, self-assessment, peer-assessment and collaborative
group work (Kieffer and Morrison, 1994). With constructive feedback and reflection students become self-regulated learners.

Another study that supports the use of self-assessment in portfolio assessment is Norman’s (1998) study on the use of portfolios as an alternative assessment procedure. In his study, Norman verified that with portfolio assessment, students became better at self-assessment and in setting their own goals. In fact, Anselmo’s (1998) research findings showed that students liked to set goals and determine criteria for their own learning and monitor their own progress. The findings of the study also showed that students felt that reflection was an important component of portfolio assessment.

Case 6: The Crow Island School’s experience with Portfolio Assessment

Hebert (1992; 1996) relates her experiences with portfolio assessment in Crow Island School, Winnetka, Illinois. She defined portfolio as “a chronological collection of a child’s work over the course of one year” (1996, p.70).

She explained that one fundamental aspect of portfolio assessment is that the author of the portfolio must present it. It is the student who makes the decision as to what goes into his/her portfolio. Teachers work with students to help them in assessing their own work or in making suggestions or recommendations as an expert adult.

Hebert (1996) found that portfolios provide students with an opportunity to communicate their learning experiences. The use of metacognitive questions enhances this process. She suggested that developing metacognitive process in young children can enhance their awareness of the need to critically assess their own learning. To develop metacognition, she encouraged students to write specific details as to why they chose a
specific piece for their portfolio. In this way students moved beyond the “because I like it” phase to use more critical values.

It was recommended that the teacher can help students by using “substantive conversations” (Hebert, 1996). This is where the teacher is engaged in discussions with students concerning for example, what they have learned or what needs further attention. Newmann (1991) described a “substantive conversation” as a time when a student expressed a view or gave his/her opinion or related his/her previous learning with the current situation. The role of the teacher is to respond reflectively to what the student has put forward.

Another aspect that has helped students with the metacognitive process is holding discussions with peers. The more competent peers especially can provide advice and suggestions to students by sharing their insights and experiences on how to select pieces and organise their portfolios.

The review of the Crow Island School’s experience with portfolio assessment reveals that metacognition is the underlying concept that influences students’ development of their portfolios. Metacognition can help students make decisions about their own portfolios. Metacognition can be cultivated in students through the use of metacognitive questions, conversations with teachers, and discussions with peers.

In support of teacher-student interaction through conversations, Farr and Tone (1998) are of the opinion that portfolio assessment encourages the opportunity for teacher-student conversations. However, they said that besides the regular on-going classroom exchanges, what was also necessary were scheduled conferences between
students and teachers. At these sessions, students and teachers have the opportunity to jointly examine the outcomes of their casual conversations.

The reviews of the six cases of portfolio assessment have illuminated several practices that were important to each of these sites. In the case of the Vermont Portfolio Project the important practices that emerged were using: higher order thinking tasks, metacognitive skills and communicative skills, and group work and pair work when instructing students. In the case of the Kentucky Portfolio Project, the dominant aspects highlighted were: using higher order thinking tasks, the need to link assessment with curriculum and instruction, training of teachers in using portfolio assessment, using portfolio assessment for school-based assessment, and reducing homogenous grouping during instruction. The third case reviewed was the South Brunswick Early Literacy Portfolio Project. In this portfolio project the dominant practices that emerged were: the need for classroom assessment to be dynamic, the need to evaluate assessment practices, the training of teachers, the need to integrate portfolio assessment with instruction, and the need for interraters to assess the portfolios. The Arts PROPEL Writing Portfolio Project, on the other hand emphasised student reflection and student teacher interaction. Portfolio assessment practices in South Jackson Elementary School and Jackson High School revealed an emphasis on metacognition, self-assessment and reflection, feedback from multiple sources, and collaboration between students and teachers. Finally, the Crow Island School’s experience with Portfolio Assessment showed that their main emphasis was on metacognition, which was cultivated through the use of metacognitive questions, conversations with teachers, and discussions with peers.
The review of the six cases showed that certain features underpinned the development and practice of portfolio assessment in these different locations. They included among others feedback, higher order thinking, self- and peer-assessment, metacognition, and collaboration. In addition, it can be said that through the use of portfolios, teachers have in many ways reclaimed the assessment ground. Portfolio Assessment provided teachers with the opportunity to develop their own assessment tasks, besides deciding on the criteria for assessment. Teachers could draw information from multiple sources and make informed decisions about instruction and students’ learning. Assessment no longer needed to be a directive from others to appease others but an activity that was within the control of teachers and students.

The next part of this chapter will examine some of the features that emerged from the six cases reviewed namely feedback, higher order thinking, and self- and peer-assessment. These features were also the focus of the research question in this study. The review of literature will illuminate further supporting evidence and opinions concerning these features.

2.3 Feedback

Feedback is information that is given concerning the way something has or is being done (Klenowski, 2002). Ramaprasad (1983) however feels that feedback is more than merely providing information. Ramaprasad (1983, p.4) defines feedback as, “information about the gap between the actual level and the reference level of a system parameter which is used to alter the gap in some way” (in Black and William, 1998b). He emphasises that the information is only considered feedback if it is utilised to narrow the
gap. If on the other hand the information is not used, then it does not constitute as feedback. Kluger and DeNisi (1996) have a much narrower view of what constitutes feedback. They are of the opinion that feedback is information provided by an outside party regarding the performance of a person on some task. Their view of feedback clearly dispenses off self-assessment as a source of feedback.

Kulhavy (1977) defined feedback as the procedure used to inform the learner if their response to instruction is right or wrong. It provides information pertaining to the extent to which the student has understood the contents being examined, it corrects errors or gives the student the chance to correct them. Based on the research he reviewed, Kulhavy found that when students were given test-like items, the feedback that was important to them was correction of errors rather than feedback that provided information on the correct responses. In formative assessment, feedback from the teacher to the student is of prime importance for progress in learning (Gipps & Tunstall, 1996).

However, Sadler (1989) is of the opinion that feedback plays different roles for the teacher and student. Teachers use feedback to make decisions concerning students’ readiness, diagnosis and remediation, about a program. Students on the other hand use feedback to inform them about their strengths and weaknesses so that their positive qualities can be recognised and reinforced, while their weaknesses modified and improved.

Butler (1988) conducted an experimental study to see the effect of different types of feedback on students’ motivation and performance. The study covered eleven year old students comprising both high and low achievers. In the experiment students had to work in pairs as well as individually. In pairs, students tackled two tasks, one on convergent
thinking and one on divergent thinking. They also worked on a written task, which was done individually under the supervision of the teacher. These tasks were conducted over three sessions. Each of these students was then given feedback, which varied. One group of students received individually tailored comments on whether their work matched the criteria, which was made known to them before they started the task. Another group of students received only grades while the third group of students received both grades and comments. The group of students who received only comments showed an improvement in their scores across the three sessions, for both types of tasks. However the group that received only grades showed a decline in their scores in the convergent tasks for the first session, then an improvement in the second session, and subsequently a decline in their scores again in the third session. The students who received both grades and comments similarly showed a decline in their scores across all the three sessions especially in the convergent tasks. The findings of the study revealed that grades could be a dampener to students’ motivation even when students receive useful feedback. According to Black and Wiliam (1998b), this finding concurred with the literature (example Siero and van Oudenhoven), which shows that feedback that is task related is more effective than feedback that is related to a personal self-esteem. The findings of the study also found that emphasising on grades could have a negative effect on the quality of students’ performance on a task.

Studies by Boulet et al (1990) also concurred with the findings of Butler’s (1988) study. Boulet et al., conducted their experimental study on eighty secondary school students. The students who were involved in a music course were divided into three groups. Students were given feedback during their course. Boulet et al., regarded
feedback as the use of formative test results to prepare an action plan to rectify weaknesses, for students who needed it. The first experimental group received three types of feedback after their pre-test: praises in written form; a list of weaknesses; and an action plan for students to follow to rectify errors or weaknesses. The second group was informed orally about their mistakes and they were allowed to rectify their mistakes. The third group, upon having passed their pre-test were not given any feedback. The results of the post-test showed that the second experimental group had performed better than the first experimental group and the control group. Boulet et al.’s, interpretation of this finding was that feedback that is delivered orally is more effective than written feedback. Another possibility was that the written praise feedback diverted students’ attention away from the task to focus on meta-task processes instead.

For feedback to be most effective, Crooks (1988) says that the feedback should focus the attention of the students on their progress in mastering educational tasks. By focusing on personal progress, it helps the student to enhance self-efficacy and effort as opposed to making social comparisons. Dweck et al. (1978) point out that if teachers frequently focus feedback on non-educational tasks like neatness of work or conduct, this could impair the function of feedback as a means of providing information concerning intellectual quality of the student’s work. A study by Cohen (1987a, in Zellermayer, 1989) showed that teachers were biased in their evaluation of students’ work and that their biases were reflected in the feedback that they gave students. Cohen’s study showed that teachers’ feedback for advanced students focused on content and organisation of their work, while their feedback for weaker students focused more on trivial aspects like grammar and mechanics. Michael’s (1981) findings on oral interactions in the classroom
also concurred with Cohen's (1987a, in Zellermayer, 1989) findings, that teachers' feedback to students differed based on the student's socio-economic background.

For feedback to be effective it should be given while it is still relevant. Crooks (1988) suggests that feedback should be given upon completion of the task. The student should then be allowed to use the feedback to demonstrate learning. Kulhavy (1977) argued differently. He said that according to studies on Delay-Retention Effect, if students receive feedback immediately on an incorrect response the chances of the student repeating the mistake is high because the student's memory of the incorrect answers interferes with the learning of the correct responses. However, when there is a delay between the errors made and the feedback received, this allows for the incorrect responses to be forgotten and enables the student to learn the correct answers from the feedback. Kulhavy's (1977) review of research showed that when feedback is delayed by a period of twenty-four hours the chances of repeating a similar error on a post-test is significantly lower. Besides that, the research he reviewed also revealed that if feedback is given too soon, it would cause students to avoid reading and answering the questions carefully. Instead students would spend their time copying the answers. Kulhavy (1977) also found that when feedback was not presented immediately after a difficult test, the student spent a significantly longer time studying the feedback. This condition has been found to improve the performance of students. Interestingly, the meta-analytic review on the timing of feedback done by Kulik and Kulik (1988) contrasted with Kulhavy's findings. Kulik and Kulik found that in the case of complex tasks which were more cognitively demanding, providing immediate feedback had more advantages than
providing delayed feedback. However, the opposite was true for test that required students to remember contents or memorise lists.

In a study by Marzano and Arthur (1977) on teachers' comments on students' work, it showed that students tended to ignore their teachers' comments. According to the findings of the study, many students hardly read the comments and others who read, did not take heed of the teacher's comments, nor made any corrections to their errors. Hayes and Daiker (1984) decided to study the reason for students' disregard of teachers' feedback. They found that even when students were instructed to respond to their teacher's feedback, they usually could not or wrongly understood or interpreted their teacher's feedback. One reason for this could be as Cohen's (1987b) survey suggested, that is, because students' had very limited knowledge of the different learning strategies to be able to process their teacher's comments.

Crooks (1988) found that students benefited from feedback that is specific and that relates to the needs of the students. Students should receive simple information about their performance consistently. The more detailed feedback about student's misconceptions and weaknesses should be given only when necessary. However, Crooks (1988) has shown that feedback of global grades or merely confirming correct answers has little effect on the student's subsequent performance, whereas detailed factual feedback and feedback on strategies used, are more effective. This was confirmed by Bangert-Drowns et al.'s (1991) meta-analysis of forty studies which showed that when the feedback offered to students contained details of the correct answers they were found to be more effective than when the feedback merely indicated if the students' answers were correct or incorrect.
Sadler (1989) argued that if the feedback was to be of use to the student, then the student should have knowledge of the desired standard or performance criteria, be able to make comparison between his/her actual work with the desired standards, and be able to take the necessary steps to bring his/her actual work as close to the desired standard as possible. The teacher’s feedback, according to him should thus, tell the student what to do to improve performance. Sadler emphasised that information to students about their work is considered feedback only when it can be used to close the gap between actual performance and desired performance. Lynch and Kleman (1978) in their study asked students the sort of feedback they found most useful. Students commented that they found comments that explained why things were wrong and which provided encouraging comments, as useful. Hillock’s (1986, in Zellermayer, 1989) analysis of several researches showed that when teacher’s comments were negative, they had a negative effect on students and when the comments were positive they had a favourable effect on the students. On the quality of feedback, Black and Wiliam (1998a) are of the opinion that feedback should provide guidance to students so that they can improve themselves and equally important is that students should also be given the opportunity to utilise the feedback to improve their work.

The most effective form in which feedback should be delivered to students will depend on the correctness of the answer, the student’s confidence in the answer, and the nature of the task. If the student’s answer is correct, then the effective way to deliver feedback would be to merely confirm the correctness. If the student gives an incorrect response to a factual question, then the most effective form of feedback is to provide the correct answer (Phye, 1979). If the question requires higher cognitive skills or
comprehension, then the most suitable form of feedback should be one that is more detailed. If the student answered the question with high confidence, but the response was incorrect, then the feedback should help the student identify the source of the misunderstanding. However, if the student answered the questions with low confidence and the response was incorrect, then the feedback should offer the student help in conceptual understanding and the student should be advised to restudy the material (Crooks, 1988). Studies by Cohen and Cavalcanti (1987) stressed the need for training in producing and handling feedback by both teachers and students. Zellermayer's review of several studies on feedback, concluded that feedback should be part of a student–teacher interaction. Teachers should monitor students' work and ensure that students' tasks and the feedback that they provided are at the students' level of development.

On the question of using feedback for summative evaluation, there are strong arguments that the two should be separated (Crooks, 1988). The argument is that when evaluation focuses on final grades, the student tends to pay less attention to feedback and thus does not learn from it.

A study was conducted by Tunstall and Gipps (1996) on the types of feedback teachers give to young children. Based on the study, a typology of feedback was created. It was found that teachers' feedback to students could be divided into two dimensions: feedback for social purposes and feedback for assessment purposes. Feedback for social purposes covered general aspects of schooling like values, attitudes and classroom procedures, which need to be reinforced by the teacher. Feedback for assessment was further divided into two types. They were evaluative feedback and descriptive feedback. Evaluative feedback included feedback in the form of rewards, punishment, approval, and
disapproval. Rewards were generally used by teachers as extrinsic motivation, while punishments were used by teachers to indicate complete disapproval. The approval feedback was used to encourage students for their involvement and effort. The disapproval feedback on the other hand indicated the student had contravened the norms of social and educational values. Descriptive feedback on the other hand included specifying attainment, specifying improvement, constructing achievement and constructing the way forward. Feedback that was classified as specifying attainment informed students of those aspects of their work that was successful. This type of feedback was work related rather than personal and was based on evidence from students work. Feedback, which was classified as specifying improvement focused on informing students on how to correct or improve their work. This type of feedback was usually related to cognitive tasks. Feedback, which was classified as constructing achievement was conversational in nature and emphasised on the importance of the student’s work. It bestowed greater responsibility on to the student and was found to develop the student’s self-assessment skills. Finally, feedback which was classified as constructing the way forward was used by teachers to give students direction in future learning. It was not in the form of a directive but rather was made to sound like it was mutually agreed and that the student had the option of choices. Tang (2000) developed her own typology of teacher feedback, which she said was an adaptation of the categories made by Straub (1997) and Zak (1990). Tang’s typology of feedback had twelve categories. The first category of feedback was praise, which was used to indicate teacher’s approval. The second category was prescribe. This type of feedback was used to indicate that the teacher had prescribed a different viewpoint on the student. The third category was
correct. The teacher provided this type of feedback to correct grammatical or factual errors found in students' work. The fourth type of feedback was categorised as suggest. The teacher provided this type of feedback to make suggestions concerning some aspects of the students' work that needed to be looked into further. The fifth category of feedback was guide. The guide feedback provided students with advice or guides, which showed students how to improve their work. The sixth category of feedback that developed as a result of Tang's study was categorised as encourage. The teacher used this type of feedback when it was necessary to provide students with encouragement. The next category was feedback that criticised, which was feedback that indicated to students, aspects of their work that was not acceptable to the teacher. This was followed by feedback that was categorised as make an objective point. This type of feedback was provided when the teacher needed to make an objective point. The ninth type of feedback was classified as clarify, which was used by the teacher when s/he needed to seek a clarification on something the student had written. The tenth type of feedback was categorised as give a reader response. The teacher gave this type of feedback when he/she needed to provide the student with a response as opposed to a judgement. The eleventh type of feedback was categorised as expand/explain own comment, which was used by the teacher when it was necessary for the teacher to explain some aspects of a comment that the teacher had written earlier. The last category of feedback was classified as have a dialogue. The teacher provided feedback of this nature to get the student involved in a dialogue. Tang's typology was different from Straub's and Zak's because it included an addition of four new categories (prescribe, make an objective point, clarify, and have a dialogue).
From the studies that have been discussed in this section, feedback has been indicated as an important part of learning. The different definitions of feedback emphasise the role of feedback as a means of providing information to students and teachers and the need to use this information to bring about positive changes. This study, on the other hand, examined the characteristics of teacher feedback available to students during portfolio assessment. To determine this, three aspects of teacher assessment and feedback were examined: types of teacher feedback, frequency of teacher feedback, and student utilisation of teacher feedback.

2.4 Higher Order Thinking

The field of thinking has been described as a ‘conceptual swamp’ by Cuban (1984, p. 676). The numerous definitions of thinking have contributed to this confusion. Some educationists have chosen to differentiate between lower and higher order thinking. Maier (1933, 1937), for example, refers to lower and higher order thinking as reproductive thinking and productive thinking respectively. Maier said that learned behaviour or lower order thinking constitutes the act of repeating a previous experience. However, when the behaviour that is manifested is the result of an interaction of two or more experiences, which were not previously repeated, then it is considered a new experience and hence constituted “reasoning”. Maier emphasised that for reasoning to be of value, the learner needs to undergo a higher order process. Bartlett (1958) viewed thinking rather differently from Maier. He said that higher order thinking was a process of extending evidence in order to fill up gaps that exists in the evidence by indulging in a step by step process. In other words, Bartlett felt that higher order thinking included skills
like elaboration, giving examples, and substantiating evidence, through a process of systematically integrating information. Resnick (1987a) similarly defined higher order thinking as thinking beyond algorithmic application of formulas. It is complex and divergent, involves making judgements and interpretations, involves the application of multiple criteria, which is sometimes conflicting, entails uncertainty, and requires the student to present ideas, and is effortful. Based on observations and interviews with teachers and heads of departments, Newmann (1990) came to a similar conclusion as Maier, that lower order thinking was the recall of previously learned material and the routine application of algorithms. However, his explanation of higher order thinking encompassed similar skills as those mentioned by Resnick. He said that higher order thinking included skills like interpretation, analysis, and the manipulation of information. Newmann (1990) made an interesting point to distinguish between lower and higher order thinking. He said that whether a task required lower or higher order thinking to solve it, depended on the individual. Hence, in order to determine if students are using higher or lower order thinking, one would need to know the student's prior knowledge. Lewis and Smith (1993) concluded that whether a student used higher or lower order thinking in class depended on the task and the student's prior knowledge on the topic. In an effort to 'clear the thinking swamp' Lewis and Smith’s (1993) concept of higher order thinking encompasses problem solving, critical thinking, creative thinking, and decision making. Higher order thinking, according to Lewis and Smith (1993, p.136), is said to occur:

“...when a person takes a new information and information stored in memory and interrelates and/or rearranges and extends this information to achieve a purpose or find possible answers in perplexing situation”.
Lewis and Smith (1993) used this definition of higher order thinking to list several implications of higher order thinking for classroom teachers. They mentioned that higher order thinking is important for all, regardless of their academic ability. They also said that whether or not a task required the use of higher order thinking depended on the student’s prior knowledge. Besides that, for the assessment of higher order thinking, it is a prerequisite that the task cannot be answered through routine application of algorithmic formula and mere recall of information. Another implication for teachers is that the teaching of higher order thinking can be integrated with lower order thinking skills. Lewis and Smith also mention that it is important to teach higher order thinking to academically disadvantaged students. They quoted Resnick (1987b) as saying that research has shown that failure to do so may contribute to learning problems encountered by these students even at the elementary level. Sternberg and Powell (1983) are of the opinion that children’s ability to handle higher order skills and abstract reasoning increases as the child matures.

According to Newmann (1990), research has shown that teachers do not emphasise higher order thinking in the classroom because of several factors. One reason he said was because of the problem of defining what constituted thinking. Another reason was the problem of assessing students’ performance in thinking. Teachers were found to neglect teaching higher order thinking skills because of class sizes and their teaching load, which made it difficult for teachers to give attention to the work of individual students. In addition to that, covering wide curriculum content to fulfil examination requirements also made it difficult for teachers to emphasise higher order thinking in class. It was also found that students themselves preferred tasks that had ‘correct
answers' and were structured. Finally, teachers were of the opinion that knowledge was equivalent to the acquisition of information rather than the interpretation, analysis, and evaluation of it.

Newmann (1990) found that studies on thinking had failed to integrate the various interpretations of thinking and approaches to teaching it. Hence, he proposed a two-pronged framework to promote the teaching of higher order thinking especially for social studies. First, the framework provided a definition for what constitutes higher order thinking, and second, how an emphasis on in-depth knowledge, skills, and a reflective attitude can encourage students to perform higher order thinking. As already mentioned earlier, Newmann explained that higher order thinking required students to look beyond the material at hand, that is, they were required to interpret, analyse, and manipulate information because tasks that encouraged higher order thinking cannot be resolved through direct application of previously learned information. On promoting higher order thinking in classroom, Newmann's framework proposed that teachers should encourage students to acquire in-depth knowledge, create activities whereby students have the opportunity to practise skills like interpreting, analysing and manipulating information, and provide the support for students to develop a disposition of thoughtfulness. These three components, according to Newmann, should form the basis of the curriculum for teaching higher order thinking to students.

On the need for in-depth knowledge in order to perform higher order thinking, Glaser (1984), and McPeck (1981) share the view that knowledge that is related to specific domains or subject knowledge is important in performing higher order thinking because ultimately a student can only successfully interpret, analyse, and manipulate
information about a topic if he/she has sufficient knowledge about the topic. Newmann also mentioned that the necessary skills that students needed to acquire in order to perform higher order thinking included both general skills and domain-specific skills. The general skills suggested by Newmann were ability to identify problems, suggesting alternative solutions to solve problems, providing examples and evidences to substantiate claims, making logical judgments, looking for biases, and performing metacognition. In conferring with several researchers, Newmann suggested several attitudes that can promote reflection which include the desire to support claims, to reflect deeply on problems rather than to jump on the bandwagon and agree to popular views, wanting to explore new ideas, and the readiness to listen to alternative and creative solutions to problems. Newmann’s (1990) framework to promote higher order thinking can be applied to all persons regardless of age; it can be used across school subjects; and it is not linked to any particular cognitive processing theory or teaching method.

Beyer (1984a) points out that there are at least 2 basic weaknesses in most forms of assessment of thinking skills. Firstly, most assessment of thinking skills attempt to measure discrete skills in isolation, failing to assess students’ ability to use it to reason or to solve problems or the coherence and utility of these operations (Resnick, 1987a, Beyer, 1984a). Test items, which claim to test thinking skills are also not related to the skills which it claims to evaluate. Secondly, once an assessment instrument is developed and implemented, schools tend to believe that the particular assessment instrument is the only way to measure the said thinking skills. Beyer (1984a) argued that the use of multiple-choice items is probably the least useful way to measure student’s thinking skills. He suggested, student’s ability to sift through data, to arrive at a conclusion or to solve a
problem, is the best way to measure a student’s ability to think. Beyer in another article (1984b) suggested that when assessing students’ thinking skills, they should be presented with data that they are not familiar with, whereby they can apply the necessary skills to arrive at the correct answer. The assessment instrument should be able to measure the nature of the skill, both in the process and the product of the tasks. Resnick (1987a) added that assessment of thinking skills that emphasises deciding on alternatives, making judgements and nuance, as opposed to fixed answers, need assessment methods that also depend on judgement and accept alternative interpretations. In relation to the assessment of thinking skills, Norris (1989) argued that in order to test critical thinking validly, evidence should be presented concerning the process of the examinees’ thinking. This requirement, Norris posits while conferring with other researchers, renders criticisms to the use of multiple choice testing for critical thinking because it cannot provide strong evidence of the examinee’s thinking process. To overcome the problem of testing critical thinking, Norris suggested the use of verbal reports as they provided direct evidence of the criteria used by the examinee in his/her thinking. However, he said that evidence showed that thinking aloud while doing a multiple-choice critical thinking test, did not change the examinees’ thinking or performance compared to taking a paper-and-pencil test. These findings were supported by Phillips (1989) who reiterated that studies have shown that information from verbal reports is as valid as multiple-choice critical thinking test using paper-and pencil.

Falkof and Moss (1984) argued that although “questioning” was commonly practised in all classroom activities – in oral discussion, written assignments as well as tests, research shows that eighty to eighty-five per cent of the questions asked by teachers
order to interpret, analyse, and manipulate information before arriving at a conclusion or solving a problem. In addition, teachers should incorporate cognitively higher-level questions into their teaching and testing and not give sole emphasis to facts questions only. In this study, higher order thinking was promoted through assessment tasks that were designed to encourage students to perform higher order thinking skills. Besides that, teachers also provided students with support and guidance to reflect on their work, make suggestions, and produce creative and original ideas and products.

2.5 Self- And Peer-Assessment

Self-assessment, according to Black and Wiliam (1998a) is an essential part of formative assessment. This is because self-assessment can provide important feedback on three aspects: the goals the learner intends to achieve, evidence of where the learner is at the moment, and knowing how to close the gap between the two. Heron (1988) argues that assessing how one learns and how evidence is presented on what has been learnt is more fundamental than assessing what has been learnt. He points out that self-assessment emphasises process, rather than product. Competence in procedure will ensure a continuous production of many good products, whereas product competence is one off and restricted to the product at hand. Cooley (1902) links the understanding of ‘self’ to the individual’s experiences (Crocker and Cheeseman, 1988). Klenowski (1995) in her study on students’ self-evaluation processes in a student centred environment, defined self-evaluation as “the evaluation or judgement of the ‘worth’ of one’s performance and the identification of one’s strength and weaknesses with a view to improving one’s learning outcomes”. Klenowski explained that self-evaluation as used in her study takes
on a broader perspective than self-assessment because value is attributed to the learning that takes place, by identifying the criteria used, by recognising what is well done, and by planning for future learning. Hence, self-evaluation according to Klenowski is more than awarding grades to one’s own work. She said that student self-evaluation indicated that the students themselves conducted the evaluation. She also mentioned that for self-evaluation to be useful, the outcome of the evaluation should be used to make decisions about the student’s further intentions. For the purpose of this study, self-evaluation as defined by Klenowski will be referred to as self-assessment as well.

The question that many researches ask is, are children able to assess themselves and their peers? Stipek (1981) points out that there is evidence which suggests that by the time children are in their second grade they are able to incorporate information about their past performance and relate it to their future performance. Besides this, children are also able to use the information to make judgements about their own ability (Shaklee, 1976). Stipek’s study indicates that children can assess their peer’s performance critically at an earlier age than they can their own performance. The results of his study as well as the results of the study by Stipek and Hoffman (1980) show that children are able to analyse logically the meaning of negative performance feedback at an earlier age than they can actually integrate and use such information. McCurdy and Shapiro’s (1992) research which studied oral reading ability of elementary children with learning disability also showed that elementary school children were able to conduct self-assessment. In McCurdy and Shapiro’s research the children received visual and oral feedback from the teacher, peers and themselves. It was found that the group who received feedback from their own monitoring performed better than all the other groups based on their increased
performance from the pre- to the post-test. The other two groups who received feedback from the teacher and peers also showed an improvement in their post-test but the control group who did not receive any feedback, however showed the least improvement.

Researchers have shown that successful learners have better control over their learning than less successful learners. Zimmerman (1989) said that successful learners were able to take charge of their learning by setting goals, assessing their previous learning, suggesting strategies, developing an action plan, and considering alternative methods when faced with obstacles. In line with this, Zimmerman et al. (1996) proposed a cyclical approach that can teach students to regulate themselves. The approach consists of four steps. In the first step, students need to observe and evaluate themselves. In order to do this, students can examine their previous work and learn to identify areas that need further improvement. Maintaining a learning journal can help students observe and evaluate their behaviour.

After students have identified their deficiencies, in the next step students can set goals and plan their strategies to achieve these goals. In order to do this, students need to analyse the task at hand, set goals to accomplish the task, and plan a strategy to achieve the goals. The third step in the cycle is to implement the strategies planned and to monitor the progress made. In this stage students should decide if the strategies selected are working for them. If they are found to be working, then the strategies should be retained but if the strategies are found not to be working for them, then they should change their strategies. Students need to learn “fix-up” strategies (Dembo and Eaton, 2000, p. 485) to help them tackle problems that they are likely to encounter in the process of learning.
The final step in this cycle is to implement strategies to monitor the outcome of their performance. In this step, students need to ask themselves questions pertaining to the achievement of the goals set, and what changes, if any, were made to the initial strategies that were planned to accomplish these goals. This cycle is then repeated as self-regulated learners continue to observe, plan strategies, implement actions, and monitor their progress. Using this cyclical approach, students can learn to take charge of their learning by identifying their academic problems and solving them.

A metaanalysis by Falchikov and Boud (1989) showed that there were no conclusive trends among students to either overrate or underrate themselves. However, according to them, generally the better students tended to underrate themselves compared to the poorer students who tended to overrate themselves. According to Gopinath (1999), student self-assessment showed higher scores than that of their teachers compared to peer-assessment. However, in a study by Crocker and Cheeseman (1988) on children’s ability to assess the academic worth of self and others showed that there was a high degree of agreement between self, peer and teacher as to children’s performance. Also, the study by Ruble and Flett (1988) showed that high and low ability children generally used self-assessment for different purposes. High ability children, said Ruble and Flett (1988), tended to use self-assessment to seek information but low and medium ability children usually used self-assessment for purposes of social comparison. They also indicated that low ability children were most unlikely to engage in self-assessment. However, Stipek (1981) said that if high and low achieving students were consistently given feedback about their work, they would be able to make more accurate judgements about their ability.
According to Stipek, children tended to misconceive the meaning of ability. He said that children tended to include behaviours such as effort, completion of tasks, and following directions, as equivalent to their ability. These findings are consistent with that of Kun’s (1977) and Nicholls’ (1978). Black and Wiliam (1998a) cited the main problem faced by children in assessing themselves as that of determining the targets or goals that they are supposed to achieve. Heron (1988) cites the decision to use which criteria as the most critical aspect of self- and peer-assessment.

Rogers (1983) in emphasising the importance of self-assessment, pointed out that through self-assessment students become responsible learners. By determining the criteria for their assessment, the goals they must achieve and the degree to which these goals have been achieved, students become autonomous learners.

In the study conducted by Klenowski (1995) to examine self-evaluation processes that students are involved in, she identified two types of processes associated with self-evaluation: informal process and formal process. The informal process occurred during student-teacher meetings, tutorials and class discussions. The outcomes of informal self-evaluation were utilised into teaching and learning almost immediately, verbally and when appropriate. The formal self-evaluation process was more structured and based on negotiated procedures between the teacher and students. Negotiations were used to determine evaluation criteria and scoring of students work. The outcomes of formal self-evaluation processes were also tangible and they were used to determine students’ achievement. The study also identified three dimensions of processes that students undergo during self-evaluation. They are: students evaluating their own work based on criteria, teachers and students engage in interactive dialogue when analysing students’
self-evaluation; and students grading their own work. On the first dimension, that is using criteria to self-evaluate, students mentioned that it was important to clarify and specify evaluation criteria with their teachers so that they knew how to evaluate their own work and the work of their peers. Students also commented that the process of negotiating criteria had contributed towards enhancing teacher-student relationships. Besides that, the practice of critiquing and evaluating their work and that of their peers had helped them to gather more ideas, understand how others think and understand the process of evaluation. They also understood better what standards were required of them. One problem that students encountered was in determining the quality of performance. Sadler (1989) explained that quality was judged by people and the instrument to gauge quality were in the brains of these people. Broadfoot (1994) in agreement with Sadler, elaborated that standards that were embedded in the minds of teachers could not explicitly be extracted and noted down as criteria. Students needed to understand that when evaluating complex tasks not all the criteria for evaluating could be listed in advance as students' responses to the same task were bound to vary from student to student.

The second dimension of the self-evaluation process that emerged from the study was interactive dialogue between the teacher and student. Students found these sessions important to learning because they could seek clarification from the teacher and peers during these sessions. The sessions benefited both teachers and students. Students gained by being able to confront teachers for explanations and teachers found that these sessions gave them insights into the way students think. Students commented that these interactive dialogues made them more reflective. The study also found that environment played a role in contributing to interactive dialogues. For students to critique their work and that of
their peers, they needed a conducive, non-threatening classroom to protect their self-esteem. Interactive dialogues contributed to feedback and negotiations.

The third dimension of the self-evaluation process that emerged from Klenowski’s research was assigning a grade. Students found this a valuable experience. Klenowski quoted Wiggins (1992) that when students were involved in developing marking schemes and scoring, they became closer to the evaluation process and they began to understand that judgments were not necessarily subjective. Hence, students tend to perform better because they are able to interpret the evaluation criteria. Students also indicated that it was important for them to know why they were given a certain grade. They found that the process of assigning grades to their own work and to that of their peers made them relate closely to the evaluation criteria and use it to conduct evaluation.

Klenowski (1995) concluded that the findings of her research showed that when students were involved in self-evaluation, they had more opportunity to learn and were also more responsible for their learning. Teachers found that their students became more aware of their strengths and weaknesses and also more confident, after practising self-evaluation in the classroom. Students on the other hand found that self-evaluation made them metacognitive by thinking about what they learnt and how they learnt. Some went further and questioned the effectiveness of their learning strategies. Tierney, Carter and Desai (1991) asserted that portfolios gave students the opportunity to practise self-assessment. They said that students practised self-assessment when organising and choosing material for the portfolio, when sharing their work with others as well as when assessing their own work.
Peer-assessment can also enhance self-assessment and self-reflection. Juwah (2003) described peer-assessment as a process that is dynamic and involves interaction between learners with the aim of assessing, critiquing, and making value judgments about the quality and standard of each other’s work. The outcome of this interaction should produce feedback, which the peer can then use to further improve their performance.

Juwah (2003) in his research on the use of peer-assessment to develop skills and capabilities developed a framework for students to use when conducting peer-assessment. His framework comprised seven steps that students need to undergo to conduct peer-assessment effectively. The first step was the need for clear and definite rationale, which students need to understand before they embark on the process of peer-assessment. The second step required students to be involved directly in authentic learning situations in order to acquire skills like facilitating, moderating, reviewing, summarizing, assessing and providing feedback, and reflecting on one’s work, practices and development. In the third step students were taught to set their own criteria for assessment while in the fourth step students were asked to assess the work of their peers and provide relevant feedback accordingly. In the fifth step students received coaching on how to practice the skills acquired. This was done through modelling, prompting, questioning, providing support, and encouragement. The coaching session was followed by the sixth step, which trained students to reflect on their work through interactive dialogues with peers and the teacher, online tutorials, and journals. In the seventh and final step teachers were required to check the assessment to ensure that criteria were adhered to, and standards were maintained.
In utilising this framework for peer-assessment, the findings showed it was extremely important for instruction on procedures for conducting peer-assessment to be clear and well understood by the students. The findings of the research also found that coaching through the various means used, contributed to students competency because of the scaffolding it provided students. In other words, it helped students through their zone of proximal development to achieve their actual development. The findings also noted that students became increasingly more confident in assessing and the quality of their assessment and feedback improved, that is, they became more focused and constructive. It was found that justification was necessary to substantiate a grade and hence a justification process was added in the assessment form. Through peer-assessment students were found to have gained insight into the thinking of their peers as well as gained mastery of knowledge. They were also more aware of the existence of other viewpoints. Peer-assessment was also found to contribute to self-assessment and reflection. However, its biggest contribution was in reducing the teacher assessment workload, hence making it a cost effective means of assessment. Juwah concluded that based on the findings of the study, peer-assessment was in tandem with online education and it contributed to the development of the self-regulated learner, while at the same time it helped students improve the quality of their performance. However, Juwah emphasised that for peer-assessment to be effective, it was necessary for students to receive training in the various assessment processes.

This study identified the evidences of self-assessment that students exhibited when performing portfolio assessment. Evidence of students’ self-assessment was determined by their ability to recognise their strengths, their weaknesses, their ability to
make recommendations to overcome weaknesses, and their ability to reflect on their work and select specific pieces for their assessment portfolio based on their own criteria.

2.6 Conclusion

Six cases were reviewed, concerning the development and practice of portfolio assessment in different locations. From these studies several teaching, learning and assessment concepts emerged as being pivotal in shaping the design of portfolio assessment in the particular location. Some distinct features and concepts that emerged in the cases of portfolio practices that were examined, adapted and used in the design and development of the Portfolio Assessment Package (PAP) in this study. Some of these features such as feedback, higher order thinking skills and self- and peer-assessment were examined in greater detail in this chapter while metacognition, cognitive apprenticeship and collaboration formed the conceptual framework for this study. These concepts are discussed in the third chapter.