Routledge
Taylor & Francis Group

Portfolio assessment: direct from the classroom

Betty McDonald*

The Learning Centre, University of Trinidad and Tobago, 74–98 O'Meara Industrial Park, Arima, Trinidad and Tobago

Portfolios have been regarded as a means of personal self-expression. This study reports on student real-life experiences with portfolio assessment. The focus group comprised 150 freshmen (100 females) from a small campus of a tertiary educational institution. For two semesters (approximately 30 weeks), students engaged in numerous activities selected to encourage deep learning and understanding of mathematical concepts. Because students were not involved in the experiment, ecological validity was maximised, and observations may be regarded as fairly authentic and worthy of analysis. Generally, students reported learning much from portfolio assessment and felt an integral part of the assessment process. Portfolio assessment appeared to empower students and provide them with the self-respect they desired. Future research could compare results from everyday observations with those from experiments.

Keywords: portfolio assessment; higher education; authentic; empower; ecological validity

Introduction

This study does not seek to report on an experiment but rather to share student experiences of portfolio assessment during the normal everyday conduct of classes. The focus group comprised a cohort of 150 freshmen (100 females) from a small tertiary educational institution. This means that sources of error resulting from ecological validity were minimised, and practitioners were able to appreciate what really happens in real-life situations. Useful lessons may be gleaned that could assist in best practices in the classroom.

Literature review

Newman and Cole question whether scientific research from a laboratory can be of any use to teachers. They contend that behaviour in a psychology laboratory, where actions are mandated by 'the need to efficiently replicate tasks, record individual responses and avoid contamination from external factors' (2004, 1), is systematically different from behaviour in everyday situations. In describing a programme of research identifying sources of ecological invalidity of laboratory settings, Newman and Cole (2004) connect practice to attempts to apply laboratory controls to field research in schools where high-stake testing measures the effectiveness of instructional programmes. This study therefore focuses on actual experiences of students

*Email: betty.mcdonald@utt.edu.tt

engaged in portfolio assessment in everyday settings in an attempt to discuss best practices for portfolio assessment.

What exactly is a portfolio? Paulson, Paulson, and Meyer describe a portfolio as 'a purposeful collection of student work that exhibits the student's efforts, progress and achievements in one or more areas of the curriculum' (1991, 60) that includes content selected by students, selection criteria, merit judging criteria and evidence of self-reflection. A random collection of observations or student products does not constitute a portfolio. A scrapbook or album or a collection of photos placed together also does not constitute a portfolio. Noted systematic observations that relate to major instructional goals are included. Usually a portfolio contains selected multifaceted samples of students' best efforts. Those efforts are related to assessed outcomes of instructional goals. The wide variety of materials included in the portfolio may comprise teacher notes, teacher-completed checklists, student self-reflections, reading logs, sample journal pages, written summaries, audio tapes of retellings or oral readings, videotapes of group projects and so forth (Valencia 1990a). Not all of the aforementioned items are used all the time. The samples demonstrate development and growth towards mastering identified outcomes. The building of positive attitudes and habits, moral and ethical growth are also reflected in a portfolio. Lamme and Hysmith (1991) contend that teachers set standards or expectations in an effort to determine students' developmental level in relation to those standards. Barton and Collins (1997) believe that purpose, assessment criteria and evidence are the three main factors that guide the design and development of a portfolio. Knowing the purpose that the portfolio would serve defines the operational guidelines for collecting materials. For instance, a decision has to be made whether the portfolio would be used to inform programme development, to report progress, to identify special needs for programme accountability or for all of these reasons. Assessment criteria or standards allow the determination of strategies necessary to meet the identified purpose by inclusion or exclusion of certain materials and the determination of success or failure in meeting those standards or criteria. Finally, the sources of evidence that should be used, the quantity of evidence, the frequency of evidence collection, the congruency of the sources of evidence, making sense of the evidence collected and how the evidence is used for programme modification and evaluation could differentiate an acceptable from an unacceptable portfolio. Barton and Collins (1997) suggest that evidence may include artefacts and attestations (items produced in the normal course of classroom or programme activities), reproductions (documentation of interviews or projects done outside of the classroom or programme), attestations (statements and observations by staff or others about the participant) and productions (items prepared especially for the portfolio, such as participant reflections on their learning or choices). Selected items are meant to add new information pertinent to goal attainment.

Portfolios vary in types. They may serve a number of specific purposes in attaining overall curriculum objectives. For instance, documentation or 'working' portfolios represent a collection of works over time that demonstrate growth and improvement on the part of the learner. Just about every activity may be included from brainstorming activities to drafts and completed products. On the other hand, process portfolios document all phases of the learning process with special emphasis on metacognition and reflection. Process portfolios integrate specific knowledge and skills towards mastery. The inclusion of think logs, reflective journals and a variety of metacognitive processing items demonstrates the importance of the

process over the product. For summative evaluation, showcase portfolios indicate mastery of key curriculum outcomes. Usually these portfolios showcase the best of a student's completed works such as photographs, videotapes, records of work, written analyses and other dated artefacts that could demonstrate progress over time. Student reflections allow for personal growth and perfection of the final product.

Portfolios are useful in that they track developmental changes over a period of time and encourage a learner to engage in self-directed learning to his/her own empowerment. Not only can a learner reflect change, but parents and significant others can also have the privilege of observing and commenting on successes or areas for improvement. A range of unintended skills such as innovativeness, creativity, lateral thinking, divergent thinking, recording, note-taking introspection and reflection are made possible. Additionally, portfolios facilitate a community of learners working together as they discuss and share their individual ideas. Metacognition (thinking about thinking) and learning about learning are encouraged. Students feel empowered as they value their own contributions that are recognised by significant others. Direct experiences are reported formatively and summatively.

Flood and Lapp (1989) affirm that portfolios are an effective means of communicating students' developmental status and progress in reading and writing to parents. Especially in cases of contention with irate parents, teachers may use their record of observations and the students' portfolios as supportive evidence for conclusions they draw about students. Portfolios are effective in providing teachers with a wealth of information upon which to base instructional decisions and from which to evaluate student progress (Gomez, Grau, and Block 1991). There is also evidence that portfolios inform students, teachers, parents and significant others. The results can be used to improve instruction, which is another major dimension of good assessment (Gomez, Grau, and Block 1991).

Frazier and Paulson (1992) put forward the view that portfolios can be a source of motivation for students as well as promote student self-assessment and self-understanding. Most importantly, normally troubled areas of validity such as consequences, fairness, transfer and generalisability, cognitive complexity, content quality, content coverage, meaningfulness and cost efficiency are addressed by portfolios (Linn, Baker, and Dunbar 1991). In particular, when one thinks about the consequences that a measure has on the student, instruction and the curriculum ('consequential validity') portfolios definitely address a major area of concern in education.

Much of traditional testing is often not authentic. In particular, teacher made tests may tend to be unreliable. Portfolios fill the gap in contextualising and providing a basis for challenging and/or supporting formal test results. This is important since many are the instances when students are judged on the basis of a single test score from a test of questionable worth (Darling-Hammond and Wise 1985; Haney and Madaus 1989). Needless to mention the day-to-day variation in students' performance measured by tests. In contrast to varied and multiple assessments afforded through portfolio assessment, students get the benefit of the doubt especially in cases where exceptional students are concerned. This is particularly so because students substantively relate their experiences as they demonstrate what they can do; a principal fundamental to 'authentic assessment' or 'performance assessment' in educational theory (Cole, Ryan, and Kick 1995). Portfolio assessment is meant to enhance the total assessment process. A range of skills normally overlooked are highlighted. Best of all the

developmental process of learning, understanding and reflection can progressively be followed in a systematic manner allowing for personal improvement and the encouragement of lifelong learning. Ethical and moral education is integrally associated with portfolio assessment because the very nature of the process forces learners to be honest to themselves and respect the integrity of the process.

Paulson, Paulson, and Meyer posit that:

> Portfolios offer a way of assessing student learning that is different than traditional methods. Portfolio assessment provides the teacher and students an opportunity to observe students in a broader context: taking risks, developing creative solutions and learning to make judgments about their own performances. (1991, 63)

In assessing a portfolio, credit in carefully proportioned parts may be given to presentation, precision of documentation, evidence of understanding, achievement of performance standards, growth and development, alignment of ideas with curriculum objectives, appropriateness of materials, variety of formats for data entry, reflection and any other appropriate focus areas. Portfolio assessment lends itself to collaborative assessment involving the learner, peers, facilitator and significant others. All stakeholders could work together to identify the significant artefacts that should be included in the portfolio. Tierney, Carter, and Desai (1991) insist that an important dimension of portfolio assessment is that it should actively involve the students in the process of assessment.

Portfolio assessment is particularly popular for performance-oriented disciplines such as visual art and design, architecture, performing arts, physical education, clothing and textiles, food and nutrition, music, dance and drama where artefacts of work speak to skills attained and developmental growth and maturity over time. Portfolio approaches have been successfully used in assessing literacy (Flood and Lapp 1989; Lamme and Hysmith 1991; Matthews 1990; Tierney, Carter, and Desai 1991; Valencia 1990; Wolf 1989). Such portfolios represent a systematic collection of teacher observations and student developmental literary efforts over time.

Aligning assessment with instructional objectives is another important role of portfolios. Shavelson (1992) conjecture that assessment flows directly from instruction through observation during instruction and the collection of some of the artefacts of instruction. Essentially, therefore, portfolios may be viewed as a form of 'embedded assessment'. In other words, assessment tasks become a part of instruction. This means that teachers can determine important instructional goals and how they might be achieved.

The potential of portfolios to showcase work to stakeholders outside the educational institution cannot go unmentioned. Whilst a test may be of interest to class participants only, a portfolio is often of general interest to individuals. In this regard, portfolios could be an effective means of assessing programmes (programme evaluation). In particular, community-based programmes can benefit tremendously from portfolio assessment. In fact, better than more traditional measures, portfolios may serve as windows into community practices, procedures and outcomes.

Sewell, Marczak, and Horn (2007) believe that programmes with flexible or individualised goals or outcomes could be evaluated through portfolios since each student's portfolio could be geared to his or her individual needs or goals. For

instance, for a programme that seeks to enhance students' social skills, there may be some shy children who may need to be more assertive, whilst others may need to be less aggressive. This multipurpose dimension is possible because it may be easier to see patterns since portfolio assessment emphasises the process of change or growth, at multiple points in time. Additionally, portfolios allow individuals and programmes in the community that are being evaluated to be involved in their own change process and their actual decisions to change. Accordingly, portfolios provide the kind of information that gives meaningful insight into behaviour and related change, thereby facilitating the change process.

More importantly, portfolio assessment allows for the possibility of assessing those complex and difficult-to-understand constructs that are often impossible in conventional assessments. Unlike conventional class work, by their very nature, portfolios provide a tool that has the potential to ensure communication and accountability to a range of audiences other than those within the classroom. This means that significant others, families, funders and members of the community at large who may not have the facility for interpreting sophisticated statistical data can often understand and appreciate more 'visual or experiential "evidence" of success'. Sharing student experiences about portfolio assessment allows practitioners to add to the current literature invaluable information that has the potential to enhance portfolio assessment and student self-efficacy and self-confidence.

Having noted much of the information on current literature regarding portfolio assessment, there appeared to be a missing link. Hence, it became necessary to detail the actual experiences of a selected cohort in an attempt to shed additional light on portfolio assessment as seen through their eyes.

The study

This study was designed to explore students' experiences with portfolio assessment in order to offer up-to-date direction of 'best practices' in the field. The focus group comprised 150 freshmen (100 females) from a small campus of a tertiary educational institution located in a tourist-oriented Caribbean island. For two semesters (approximately 30 weeks), students engaged in numerous activities selected to encourage deep learning and understanding of mathematical concepts.

This study was of special significance in a country where the average person exhibited exceptional verbal skills (by virtue of their intermingling with visiting tourists) yet bemoaned their disgust and hatred for mathematics despite its utility in everyday living. Of major concern was the fact that students were engaged in work on a part-time or full-time basis. The likelihood of misplacing or failing to collect important documents was a real issue for many students. Additionally, keeping systematic orderly records that they could easily locate and retrieve when required often proved challenging for many students. The use of portfolios was meant to encourage students in unearthing their mathematical potential in a non-threatening manner in the hope that they and future generations would accept mathematics more as a useful discipline that could be incorporated into every area of life.

Students were briefed about portfolios and their value in assisting them to better appreciate and like mathematics. They were encouraged to systematically record and keep all their handouts, assignments, practice exercises, brainstorming records and other documents. The students were appraised of the virtues of portfolio assessment and its contribution to their final course assessment.

Results

Autonomy/individuality

Students attested to numerous benefits from portfolio assessment. They were particularly pleased to have autonomy over their own work:

> At last I have right to speak for myself through this portfolio … I am free to include all my attempts at exercises that otherwise may have been considered unimportant … I now have the satisfaction that my efforts, although unsuccessful, do not go unnoticed … That makes me feel good about myself.

> Never before have I had the opportunity to be in control of my own work … This too good to be true.

> With so much individual input I feel like I own my work … This makes me take special pride in ensuring that I do my best … I am more concerned in perfecting my work for self-gratification rather then for marks.

Record-keeping skills

A number of students who had bad experiences in record-keeping felt that portfolio assessment allowed them to hone this skill:

> Keeping good records has always been a challenge for me … I tend to lose stuff, forget stuff, lend stuff and never get them back … just about every thing happens to my stuff … Now with portfolio assessment, I appreciate the value of good record-keeping.

> To make my life easy I date and keep everything … I mean everything from my scribbles to hand outs … anything pertaining to my course. Later, I systematically sort according to relevance and importance.

Time management skills

Time management was another area of success for students as evidenced from their comments:

> Managing time is not easy for me … I am a wife and mother of three, with a full-time job [manager of a small business] trying to progress … I needed all the time management skills I could get.

> I get to see exactly how I use my time … I record time spent on certain on papers/assignments so I am better able to manage my time wisely.

Flexibility

Students expressed mixed reactions to the contribution of portfolio assessment to providing them with flexibility. Whilst some felt that portfolio assessment provided them with a flexible operational schedule, others felt that gathering and keeping evidence of work limited their flexibility:

> I like to know that is it left up to me to include or exclude certain pieces of evidence from my portfolio … Flexibility make me perform better … I don't feel like I'm forced to do anything.

Having to keep course materials and decide what I need to include in my portfolio makes me feel restricted … Look, it's either, I am told what to include.

Motivation

Students identified portfolio assessment as being instrumental in their being highly motivated to succeed:

[Seriously] I feel so motivated I could hardly believe it … Who would imagine that keeping a portfolio could cause me to be so motivated.

I always had an issue with motivation … Basically, I went along with whatever was happening … There was no eagerness on my part to succeed … It was whatever … Now it's so very different … You would not imagine the time and effort I put into my work.

Self-efficacy and self-confidence

Coming from a background of failure in mathematics over a number of years, several students summarised their experiences with portfolio assessment as follows:

Now I realise that it is mind over matter … I can accomplish whatever I set out to do but I must believe I can before it happens.

Boosting my self-confidence meant a lot to me … I needed this to inspire me to move forwards … I'll recommend portfolios in very subject … It's really cool.

Reflection

A number of students were not in the habit of reflection. Many simply dismissed issues once they were away from them. The following observations indicate that portfolio assessment played a positive role in allowing students to appreciate the value of reflection as an integral part of the learning process:

In order to determine what to include or exclude in my portfolio, I had no choice but to reflect very carefully … I'm not used to reflecting at all … I move with the flow and whatever happens.

I can't believe what I was missing all this time … Reflection gives me a sense of closure … It allows me to trace my steps … figure out what I could have done given the situation … and improve for the next time around … It's good to know I'm now involved in continuous learning.

Discussion and conclusion

Students in this study were briefed about the value of portfolio assessment. Since the students were partly or fully employed and had little time to engage in activities that they felt would not directly contribute to their final grade and subsequent graduation, this research promoted self-interest as the focus for engagement in portfolio assessment. Accordingly, students were briefed about the advantages and disadvantages of portfolio assessment. There was ongoing discussion about the marking criteria for which students made their input. This gave students an opportunity to contribute to

their own assessment. This made them feel empowered and redounded to their personal self-gratification; a feeling that meant much to them by virtue of their day-to-day managerial-level engagements at their work places.

From the entire experience with the students, this research found that the portfolios assisted in documenting the needs and assets of the community of interest as they served the useful purpose of clarifying the identity of the programme. This is particularly helpful when there is need to make input into similar programmes in the future. Because the academic council of the educational institution stands willing to consider staff suggestions, this research was able to make invaluable contributions. The actual thinking behind the development of the programme became clear as students offered numerous direct and indirect suggestions in their portfolios. Simply, thinking about portfolio criteria contributed to this research's clearer conceptualisation of the course objectives. In fact, the 'evidence' offered by students allowed this research to visualise what successful outcomes would look like. This meant that programme definition became clearer.

By virtue of its apparent isolatedness, this study has numerous limitations. Only one cohort of students was studied making the scope of generalisability limited. Despite the limited generalisability, the findings are useful in contributing to the literature the experiences of a specific group that would otherwise have gone unnoticed. The study is also limited by virtue of its dependence on research interpretation of observations. It is assumed that the interpretations made are consistent with normal behaviour so that exceptions are not included. The participants were assumed to have been interested enough in their own progress that portfolio assessment was placed front stage in their busy schedules of balancing work and study with some measure of success. The age range of the participants (18 to over 45 years) assumed that despite different levels of maturation and cognitive development, they had collectively reached that level of maturity to internalise the benefits of portfolio assessment as espoused in the research.

Whilst team-building and working in groups have their advantages, the 'isolatedness' of the individual student's life by virtue of job, family, church and community commitments forced them to appreciate an avenue to reflect and express themselves without the stringent time constraints normally used in institutional settings. The 'relaxed' atmosphere compared to a strict demanding classroom setting allowed students to improve their self-confidence in mathematics; an essential objective of the exercise.

Students were particularly pleased to realise that portfolio assessment assisted them in optimising their functions at their work places. They were able to display their work to colleagues who served as a form of encouragement. By taking ownership of their own work the students became self-motivated and so tried to do their best. A win–win situation was apparent as their colleagues who expressed fear of mathematics and felt that there was no hope were equally encouraged. In fact, several of them enrolled in courses at the educational institution as a direct result of their interactions with successful friends whose portfolios they perused.

Perhaps the most significant finding in this present study is the value of engaging students in self-determination. This practice is particularly important for students who have had a history of repeated failure in mathematics and have passed on their failure to their children and significant others. The open dialogue that emanates from viewing the portfolio is useful in promoting a number of skills such as communication, creativity, critical thinking, trust and confidence. As colleagues thumb through the portfolio they discuss strengths and weaknesses of certain mathematical methods in attaining

specified objectives. Practitioners would do well to embrace the virtues of portfolio assessment in addressing similar challenges they encounter in their classrooms. Realising that portfolio assessment allows for the assessment of the more complex and important aspects of many constructs, as opposed to being limited to those ones that are easiest to measure, this research had the pleasure of including unconventional objectives such as social skills, self-awareness, critical thinking, lateral thinking and civic mindedness among other important life skills into the curriculum.

Far from being a panacea, portfolio preparation and assessment are extremely demanding and time-consuming. Students have to buy into the virtues of the exercise sufficiently to make it work successfully. If students are of the view that portfolio assessment is another way of decreasing teacher work and simultaneously burdening them, they are less likely to benefit from portfolio assessment. This observation was obvious when a comparison was done between the final scores of those students who felt more confident about portfolio assessment than others who did not. As confidence in the process increased it was clear that students produced better work about which they were personally proud. The focus was removed from perfunctorily doing work to taking personal pride in work done. This shift was powerful since students were no longer doing their work for someone else. Personal gratification pushed students to be self-accountable. That self-accountability forced them to excel within their own limitations. By reducing the competitive spirit that normally tends to foster disharmony, time was spent in productive activities that redounded to the students' personal benefit.

Like any other innovative activity, portfolio assessment is replete with advantages and disadvantages that must be addressed if the full potential of the exercise is be meaningful. The triangulation involving students, teachers and parents in assessment that makes for a more equitable assessment (Calfee and Hiebert 1987; Shulman 1987; Wiggins 1989a) is better fully realised through portfolio assessment. Teachers are better able to link assessment more closely to classroom activities (Rothman 1988) and actually use the assessment as a teaching strategy to improve learning (Cross 1987). Evaluators have the opportunity to establish a sense of community (Katz 1988), especially as they establish instructional links at different grade levels (Hiebert and Calfee 1989).

Whilst standardised and/or norm-based tests may focus primarily on skills at the lower end of Bloom's taxonomy (recall, understanding, application, analysis, synthesis and evaluation), skills at the upper end such as application, synthesis and evaluation of experiences appear to be best captured by providing evidential support in the form of a portfolio. Information from authentic assessment that is collected from various sources, through multiple methods, and over multiple points in time (Shaklee et al. 1997) appears to be best presented through portfolios. Students have the opportunity to include a variety of artefacts such as video or audio tapes, sketches, drawings, writing or other work samples, photos, CDs, reflection logs, assignments, rough work, homemade tests, teacher-made tests, copies of standardised or programme-specific tests, etc. In addition to using personal data sources and self-reflections, students could use information collected from staff, parents, significant others, community members who know them or their programme. Apart from providing a systematic and organised manner of collecting and presenting data, portfolio assessment facilitates methodical metacognition, cognition and reflection.

Hiebert and Calfee (1989), Rothman (1988) and Valencia (1990b) applauded the potential of portfolio assessment to enhance teacher professionalism that actively and

meaningfully engages in student assessment. Students have the opportunity to be masters of their own destiny by contributing to meaningful, serious discussion of criteria and what goes on in the classroom (Katz 1988). Apart from engaging in thoughtful activity in the classroom (Shepard 1989), students can draw on the skills they learn in process-centred classrooms (Katz 1988). As portfolio assessment draws on students' strengths rather than focusing on their weaknesses (Colvin 1988), students feel better about themselves; an obvious contributor to improved self-efficacy. The better feeling students had about themselves was expressed in their interview comments to this research.

In summarising the advantages of portfolio assessment, Venn (2000, 538) points out its capacity in promoting student self-evaluation, reflection and critical thinking; measuring performance based on genuine samples of student work; providing flexibility in measuring how students accomplish their learning goals; enabling teachers and students to share the responsibility for setting learning goals and for evaluating progress towards meeting those goals; giving students the opportunity to have extensive input into the learning process; facilitating cooperative learning activities, including peer evaluation and tutoring, cooperative learning groups and peer conferencing; providing a process for structuring learning in stages; providing opportunities for students and teachers to discuss learning goals and the progress towards those goals in structured and unstructured conferences; and enabling measurement of multiple dimensions of student progress by including different types of data and materials.

Defining the criteria against which performance is to be judged is one of the major challenges in portfolio assessment cautions Brindley (1986). For instance, whatever standards are used they must reflect a holistic developmental nature of the discipline. They must also be sensitive to student individual differences and simultaneously accurately reflect student progress. To reflect these three characteristics in portfolio assessment may be a monumental task that is only possible by establishing carefully considered standards assumed to be reached through consensus of a portfolio planning committee.

This research found that portfolio assessment required much time and careful planning and attention to details. Each student brought his individual differences into the portfolio by way of self-expression and personal management of his work. While this was a positive note if portfolio assessment was not carefully managed, the cost factor may have been prohibitive. Students had to be familiarised with the procedures and criteria for assessment, the fears of doubtful students had to be allayed and those who had bad experiences in the past had to be carefully handled in a positive manner. Had I used raters they would have had to be meticulously trained.

Portfolio assessment had its negative elements in terms of establishing reliability and validity compared to more traditional standardised procedures. For successful validation there was need for triangulation of objective and subjective sources of information. This drawback was compensated for by using data and experience from a number of portfolio assessments of similar cohorts over a period of time. This research found that as more data became available over the years, establishing reliability and validity became less problematic. Constantly checking assessment appropriateness for the specific group of students assisted in monitoring validity. The connection between course objectives and assessment criteria assisted in keeping a check on content validity. The perceived value of the instrument as relayed in this research allowed for establishing face validity. By carefully monitoring the effects of

results on teaching and learning, this research ensured that systemic validity was made possible. Also, by discussing with faculty and having them assess every fifth portfolio using the agreed on criteria, this research was better able to establish reliability.

This research found that portfolio assessment was particularly useful in evaluating programmes that had a flexible or individualised goals or outcomes. For example, within a programme with the general purpose of addressing aggressive behaviour, it may well be that whilst some individual children may need to become *less* aggressive, others may need to become *more* assertive. In such a scenario, conventional assessment could be problematic, whilst portfolio assessment would be the perfect answer since each individual student has the opportunity to express himself/herself in a myriad of ways.

Having included service learning in the course, this research found that portfolio assessment was particularly useful because it incorporated community and allowed them to be involved in their own decision making. In particular monitoring patterns in behaviour, changes at multiple points were easier to do since the emphasis was on process rather than the final product. Additionally, the students' portfolios were used as communication tools to a wide range of audiences who by and large may not have had the facility of interpreting sophisticated statistical data but could appreciate 'visual or experiential evidence' of success. Because there was no expressed need to compare students' performance to standardised 'norms', this research found that portfolio assessment was fit for purpose. This did not mean that students were adjudged below accepted norms.

In summarising the disadvantages of portfolio assessment, Venn (2000, 538) points out the requirement of extra time to plan an assessment system and conduct the assessment; gathering all of the necessary data and work samples can make portfolios bulky and difficult to manage; developing a systematic and deliberate management system is difficult, but this step is necessary in order to make portfolios more than a random collection of student work; scoring portfolios involves the extensive use of subjective evaluation procedures such as rating scales and professional judgement, and this limits reliability and scheduling individual portfolio conferences is difficult and the length of each conference may interfere with other instructional activities. Because portfolio assessment was not explicitly included in the course outlines that were formally provided by the institutions' standing committees, care had to be taken to ensure that it was couched in such a way so as not to appear to be adding to a list of already burdensome course demands. With no additional compensation for the extra effort, personal commitment to the process had to take precedence to tangible remuneration. No formal backing could be obtained from authorities to make the process mandatory despite their appreciating the value of the process. Whilst the portfolios provided the authorities with hands-on authentic evidence of student performance, especially relevant for addressing queries, storage space for the portfolios was not readily available. This meant that boxes with student portfolios had to be temporarily stored in a dilapidated storage area where neither confidentiality nor security was assured. Clearly, a more positive institution-wide commitment from authorities could have influenced the outcome of the process. Like other innovations, if it is to be successful portfolio assessment must be undertaken with a positive sense of commitments and belief that it will work if properly done. Nothing less than total dedication to the endeavour could produce disastrous consequences. As a lone ranger for portfolio assessment in that educational institution, it is clear that a top-down commitment to the process is preferred to a bottom-up commitment.

Notes on contributor

Betty McDonald, manager, Professional Development Unit of the Learning Centre at the University of Trinidad and Tobago has 40 years of academic experience and has published widely. With numerous presentations and technical reports to her credit, she is an associate editor and a reviewer for several international journals. Many local and international graduates continue to benefit from her supervision. Measurement, assessment, problem-based learning (PBL), service learning (SL), teaching and learning, applied statistics, mathematics education, project management and professional development are her research interests.

References

Barton, J., and A. Collins, eds. 1997. *Portfolio assessment: A handbook for educators.* Menlo Park, CA: Addison-Wesley.

Brindley, G. 1986. *The assessment of second language proficiency: Issues and approaches.* Adelaide: National Curriculum Resource Center.

Calfee, R., and E. Hiebert. 1987. The teacher's role in using assessment to improve learning. In *Assessment in the service of learning: Proceedings of the 1987 ETS invitational conference*, ed. E.E. Freeman, 45–61. Princeton, NJ: Educational Testing Service.

Cole, D.J., C.W. Ryan, and F. Kick. 1995. *Portfolios across the curriculum and beyond.* Thousand Oaks, CA: Corwin Press.

Colvin, R. 1988. California researchers 'accelerate' activities to replace remediation. *Education Week* 6, November 30.

Cross, K.P. 1987. The adventures of education in wonderland: Implementing education reform. *Phi Delta Kappan* 68: 496–502.

Darling-Hammond, L., and A. Wise. 1985. Beyond standardization: State standards and school improvement. *Elementary School Journal* 85: 315–36.

Flood, J., and D. Lapp. 1989. Reporting reading progress: A comparison portfolio for parents. *The Reading Teacher* 42: 508–14.

Frazier, D.M., and F.L. Paulson. 1992. How portfolios motivate reluctant writers. *Educational Leadership* 49, no. 8: 62–5.

Gomez, M.L., M.E. Grau, and M.N. Block. 1991. Reassessing portfolio assessment: Rhetoric and reality. *Language Arts* 68: 620–28.

Haney, W., and G. Madaus. 1989. Searching for alternatives to standardized tests: Whys, whats, and whithers. *Phi Delta Kappan* 70: 683–7.

Hiebert, E.H., and R.C. Calfee. 1989. Advancing academic literacy through teachers' assessments. *Educational Leadership* 46, no. 7: 50–4.

Katz, A. 1988. The academic context. In *Second language proficiency assessment: Current issues*, ed. P. Lowe, Jr. and C.W. Stansfield, 178–201. Englewood Cliffs, NJ: Prentice Hall Regents.

Lamme, L.L., and C. Hysmith. 1991. One school's adventure into portfolio assessment. *Language Arts* 68: 629–40.

Linn, R., E. Baker, and S. Dunbar. 1991. Complex, performance-based assessment: Expectations and validation criteria. *Educational Researcher* 20, no. 8: 16–21.

Newman, D., and M. Cole. 2004. Can scientific research from the laboratory be of any use to teachers? *Theory into Practice* 43, no. 4: 260–7.

Paulson, F.L., P.R. Paulson, and C.A. Meyer. 1991. What makes a portfolio a portfolio? *Educational Leadership* 58, no. 5: 60–3.

Rothman, R. 1988. Vermont plans to pioneer with 'work portfolios'. *Education Week* 1, October 26.

Sewell, M., M. Marczak, and M. Horn. 2007. *The use of portfolio assessment in evaluation.* The University of Arizona.

Shaklee, B.D., N.E. Barbour, R. Ambrose, and S.J. Hansford. 1997. *Designing and using portfolios.* Boston, MA: Allyn & Bacon.

Shavelson, R.J. 1992. What we've learned about assessing hands-on science. *Educational Leadership* 49: 20–5.

Shepard, L.A. 1989. Why we need better assessments. *Educational Leadership* 46, no. 7: 4–9.

Shulman, L.S. 1987. Assessment for teaching: An initiative for the profession. *Phi Delta Kappan* 69: 38–44.

Tierney, R., M. Carter, and L. Desai. 1991. *Portfolio assessment in the reading-writing class-room.* Norwood, MA: Christopher-Gordon.

Valencia, S.W. 1990a. A portfolio approach to classroom reading assessment: The whys, whats, and hows. *The Reading Teacher* 43: 338–40.

Valencia, S.W. 1990b. Alternative assessment: Separating the wheat from the chaff. *The Reading Teacher* 43: 60–1.

Venn, J.J. 2000. *Assessing students with special needs.* 2nd ed. Upper Saddle River, NJ: Merrill.

Wiggins, G. 1989a. A true test: Toward more authentic and equitable assessment. *Phi Delta Kappan* 70: 703–13.

Wiggins, G. 1989b. Teaching to the (authentic) test. *Educational Leadership* 46, no. 7: 41–7.

Wolf, D.P. 1989. Portfolio assessment: Sampling student work. *Educational Leadership* 46, no. 7: 35–9.