PORTFOLIO ASSESSMENT: INSTRUCTIONAL GUIDE: Second Edition

Using Portfolio Assessment to Enhance Student Learning

Dr. Sharon L. Bryant
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2002

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FOREWORD

The Education Commission in its late 1990's effort to reform education in Hong Kong has considered the reform the systems of assessments, public examinations and school places allocation a top priority. One of the issues identified to accomplish this goal is to inculcate a self-evaluation culture of school (Hong Kong Special Administrative Region Education Commission, 1999, "Review of Education System: Framework for Education Reform" Education Blueprint for the 21st Century, p.21). At the same time the Hong Kong Curriculum Development Institute (CDI) is also suggested using feedback from assessment to improve teaching and learning. The focus being placed on "**Assessment FOR Learning**" rather than "Assessment OF Learning."

Portfolio assessment has a strong element of self-evaluation and feedback – both for teachers and students. The author team working at The Hong Kong Institute of Education (HKIEd) over the last 7 years has developed expertise in portfolio assessment strategies working with students to continue to adapt these strategies. In this capacity, two funded research studies have been conducted on portfolio assessment – one at HKIEd and one at international and public schools in Hong Kong. Findings of the research suggested that with proper staff development and guidelines this type of assessment strategy can enhance student learning and teacher professionalism, thereby benefiting all teachers and students in Hong Kong as it has done in other places internationally such as the USA, Australia and the UK.

This need has led to the publication of this guidebook and now the second printing.

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In addition we want to acknowledge the work led by Dr. Valentina Klenowski for the initial guidebook Portfolio Use in Initial Teacher Education: A Student Guide. Most of this work has been directly incorporated into this publication and then expanded in light of our current research.

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INTRODUCTION

Portfolio Assessment: Instructional Guide
Using Portfolio Assessment to Enhance Student Learning

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Multiple-choice tests are based on the assumption that learning and knowledge could be deco textually tested. The effects (and, from many educators' viewpoint, pernicious effects) of the use of such testing models were subsequently highlighted by research (e.g., Cannell, 1987, 1989; Herman & Golan, 1991; Shepard, 1991; Oakes, 1985, 1990), causing many educators to rethink their accountability strategies. Many reformers argued, then, that multiple-choice, norm-referenced testing had assumed too much importance in the classroom; often displacing the more pedagogically sound practice of "assessing for teaching" in favor of "teaching for testing."

INTRODUCTION

This instructional guide will focus on how the successful implementation of portfolio assessment can enhance student learning. As the research it is based on is relevant to both the tertiary and the public education sectors, it is intended to assist teachers and educators at the tertiary as well as the primary and secondary educational levels. By cultivating a more reflective attitude toward learning, students can feel empowered whilst at the same time improving both communication and academic skills. An analysis of an extensive review of recent literature on portfolio assessment indicated that portfolio assessment is critical to the reform effort internationally and, therefore, in Hong Kong. In the effort to improve teaching and learning educators at all levels can learn from and adapt relevant research whether in Hong Kong or the USA. Educators must understand the powerful benefits to student and teacher learning from the process of portfolio assessment as they plan a strategy for its successful implementation.

The two recent research projects conducted at HKIEd have shown that it is possible to enhance student learning through the use of portfolio assessment. One study was conducted on pre-service teachers. The second was piloted with in-service teachers and principals in both the public and international schools of Hong Kong. While there were many constraints to its use in the

public schools, the findings suggested that with sufficient staff development, resources and training, it could be implemented in Hong Kong. Both international and local research is consolidated in this instructional guide to outline a strategy to use for successful implementation of portfolio assessment. The model (PROVEE.IT!) developed by the authors for implementing portfolio assessment based on successful staff development will be discussed later (page 29). The content in this instructional guide serves a dual role. It is relevant for one to learn about portfolio assessment and, at the same time, prepares oneself to teach portfolio assessment.

This instructional guide is primarily based on the results of an eighteen-month pilot study 'Portfolio Assessment Use in Schools' project undertaken by the research team in 1999-2000. The study investigated to what extent the use of portfolio assessment is implemented by teachers and principals in Hong Kong schools. School subject teachers' and principals' perceptions were assessed with respect to the strengths, weaknesses and limitations of the implementation process of portfolio assessment. Constraints and problems identified with its use in schools and classrooms were also examined.

Figure 1: Responses from Questionnaire to Principals and Teachers

Item	Statement	Percentage %
1.	Portfolio Assessment has been successfully implemented	10
2.	I have had sufficient training in PA	30
3.	Portfolio Assessment develops independence in teachers	30
4.	Teachers use Portfolio Assessment in teaching	30
5.	Portfolio Assessment encourages self-evaluation for students	50
6.	I understand Portfolio Assessment	54
7.	Portfolio Assessment improves teaching strategies in teachers	55
8.	Portfolio Assessment helps students develop confidence as learners	55
9.	Portfolio Assessment assesses aspects of student learning that cannot be assessed in other ways	60
10.	Portfolio Assessment supports students' learning	70

As Hong Kong schools move toward reforming the assessment system the researchers have found the use of portfolios is an important aspect of quality reform. Our research highlighted that portfolio assessment is underutilized in Hong Kong, even though recent policy and reform documents have called for this type of alternate student assessment (items 1, 4). The research revealed that this is due, in part, to the facts that few education officials thoroughly understand the impact of such assessment strategy, and have done little to prepare teachers and administrators (item 2).

The research data in Hong Kong indicated that portfolio assessment could be used to help students and teachers work together in a way to improve both the teaching and the learning in the classroom (items 7, 8, 9, 10). The research clearly shows that the use of alternative authentic assessment such as portfolio assessment enhances student learning and teacher professionalism (items 3, 5, 7, 8, 9, 10). However, the data also shows that many educational policy makers have neglected a critical and necessary ingredient to ensure success – that of staff development and implementation guidelines for teachers and principals (items 1, 2, 6). Reform and change literature has shown repeatedly that *if the reform initiatives have any chance for success* and long-term impact the teachers and the principals need to know how best to implement the suggested strategy – merely writing policy does not ensure success.

WHY PORTFOLIO ASSESSMENT?

Assessment is an integral part of the school curriculum. The feedback from assessment should be effectively used to improve teaching and learning. The different purposes and modes of assessment (e.g. objective tests, projects, portfolios) need to be distinguished and made clear to schools so that they are consistent with different curriculum aims, teaching/learning processes and contents.

Performance assessment, as the term is currently being used, refers to a range of approaches to assessing student performance. These approaches are variously labeled as follows:

- *Alternative assessment* is intended to distinguish this form of assessment from traditional, fact-based, multiple-choice testing.
- *Authentic assessment* is intended to highlight the "real-world" nature of tasks and assessment contexts that make up the assessments.

- *Performance assessment* refers to a type of assessment that requires students to actually perform, demonstrate, construct, and develop a product or a solution under defined conditions and standards (Biggs, 1996).

Good assessment practice has been described by Gipps (1997) as 'assessment that supports learning and reflection, including formative assessment'. She and many others have highlighted the need for assessment to be open and linked to clear criteria, as well as advocating the use of a range of performance assessment strategies, such as portfolio assessment, so that all learners have a chance to perform well. The use of portfolios for assessment is an example of this type of good practice.

Students develop a greater understanding of their particular learning style when they self-evaluate and reflect on the evidence they have selected for inclusion in the portfolio to demonstrate competence. The portfolio requires students and teachers to document their growth and change by selecting evidence from their teaching and learning practices. Students become more self-regulated and gain personal control and independence in their learning. They are able to use a wide variety of learning styles to demonstrate their learning.

A move toward more authentic application tasks and outcomes thus improves teaching and learning: students have greater clarity about their obligations (and are asked to master more engaging tasks), and teachers can come to believe that assessment results are both meaningful and useful for improving instruction. If the aim is merely to monitor performance, then conventional testing is probably adequate. But if the aim is to improve performance across the board, then tests must be composed of exemplary tasks, criteria and standards (Wiggins, 1993).

Authentic assessment, such as portfolio assessment, also has the advantage of providing parents and community members with directly observable products and understandable evidence concerning the students' performance; the quality of student work is more discernible to laypersons than when they rely on translations of talk about stanines and renorming. Ultimately, as the researcher Lauren Resnick has put it, **What you assess is what you get**; if you don't test it you won't get it. (Resnick & Simmons, 1993) To improve student performance one must recognize that essential intellectual abilities are falling through the cracks of conventional testing.

Wiggins (1993) summarizes the features of authentic assessment:

- Authentic assessments require students to be effective performers with acquired knowledge. Traditional tests tend to reveal only whether the student can recognize, recall or 'plug-in' what was learned out of context. This may be as problematic as inferring driving or teaching ability from written tests alone.

- Authentic assessments present the student with the full array of tasks that mirror the priorities and challenges found in the best instructional activities: conducting research, writing, revising and discussing papers; providing an engaging oral analysis of a recent political event; collaborating with others on a debate, etc. Conventional tests are usually limited to paper-and-pencil, one-answer questions.

- Authentic assessments attend to whether the student can craft polished, thorough and justifiable answers, performances or products. Conventional tests typically only ask the student to select or write correct responses – irrespective of reasons. (There is rarely an adequate opportunity to plan, revise and substantiate responses on typical tests, even when there are open-ended questions). As a result,

- Authentic assessment achieves validity and reliability by emphasizing and standardizing the appropriate criteria for scoring such (varied) products; traditional testing standardizes objective "items" and, hence, the (one) right answer for each.

- "Test validity" should depend in part upon whether the test stimulates real-world "tests" of ability. Validity on most multiple-choice tests is determined merely by matching items to the curriculum content (or through sophisticated correlations with other test results).

- Authentic tasks involve "ill-structured" challenges and roles that help students rehearse for the complex ambiguities of the "game" of adult and professional life. Traditional tests are more like drills, assessing

static and too-often arbitrarily discrete or simplistic elements of those activities.

Regardless of the term used, according to Mitchell (1995), performance assessments imply "…. active student production of evidence of learning – not multiple-choice, which is essentially passive selection among pre-constructed answers" (p.2). Beyond these technical considerations the move to reform assessment is based upon the premise that assessment should primarily support the needs of learners. Thus, secretive tests composed of proxy items and scores that have no obvious meaning or usefulness undermine teachers' ability to improve instruction and students' ability to improve their performance. One rehearses for and teaches to authentic tests – think of music and military training – without compromising validity (Wiggins, 1993).

The best test always teach students and teachers alike the kind of work that most matters; they are enabling and forward-looking, not just reflective of prior teaching. In many universities and all professional settings the essential challenges are known in advance – the upcoming report, recital, Board presentation, legal case, book to write, etc. Traditional tests, by requiring complete secrecy for their validity, make it difficult for teachers and students to rehearse, and gain the confidence that comes from knowing their performance obligations. (A known challenge also makes it possible to hold all students to higher standards) (Wiggins, 1993).

PRINCIPLES UNDERPINNING PORTFOLIO USE

10 Powerful Principles

1. Teachers and administrators must plan for and be trained in the portfolio approach to assessment.

2. Sufficient resources of time and energy must to be allocated to support portfolio assessment.

3. Teachers must work as a team to plan for the implementation of portfolio assessment.

4. Parents and the public need to understand portfolio assessment.

5. The teacher's role is vital as a facilitator of the portfolio assessment.

6. Documentation of the processes and student achievements, as well as of the analyses of teaching and learning experiences is critical.

7. Portfolio assessment is a developmental process for both teachers and students.

8. Portfolio assessment provides a new perspective on learning for both teachers and students.

9. Self-evaluation of learning is an integral part of the portfolio process.

10. Collecting, selecting and reflecting on work is central to the portfolio process.

Principles Underpinning Portfolio Use

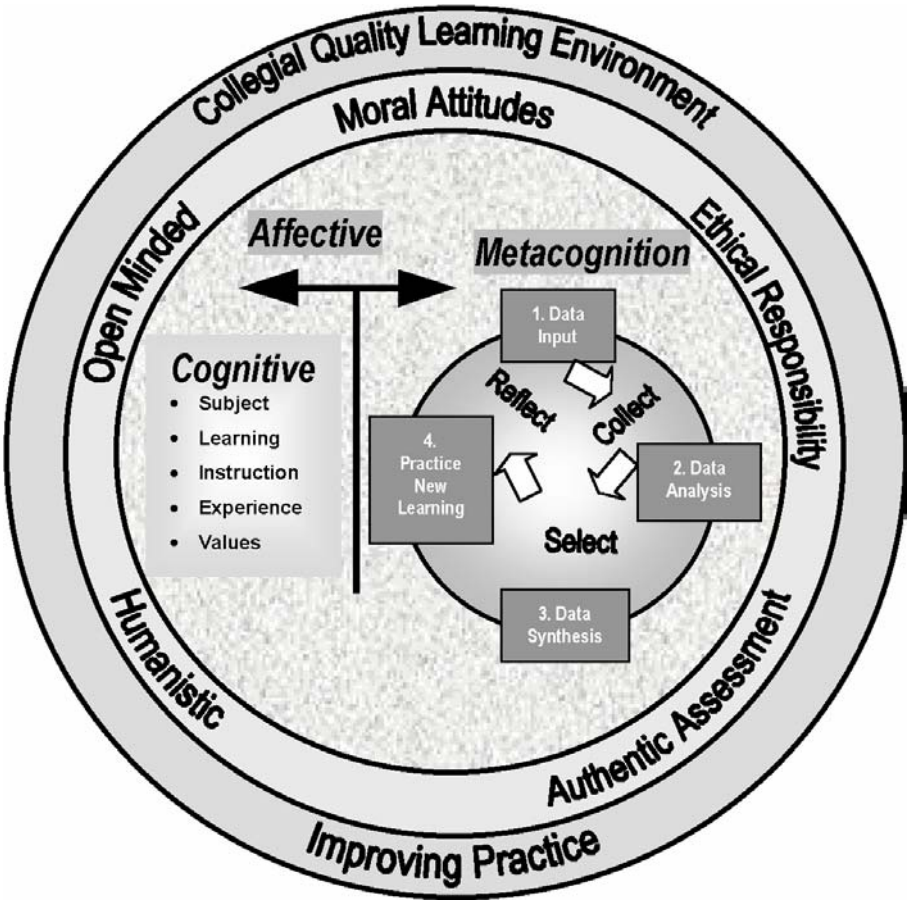
INTRODUCTION

The most important consideration when one begins to implement portfolio assessment is the attitude and the philosophy of learning one adheres to. To implement portfolio assessment most effectively, one must believe in a constructivist model of learning and that all students can learn and do deserve a high quality education. The approach that the teacher uses to implement portfolio assessment needs to reflect his or her positive and enthusiastic approach to engaging all students in their own learning. The teacher should use a variety of teaching models such as information processing, behavioral, social and personal. The teacher needs to sometimes be inductive and sometimes deductive. Their role is to teach in a way that enhances learning. The role of learning rests on the shoulder of the learner.

Over the seven years the author team has collected, analyzed and acted on data collected through the several Hong Kong research projects as well as through the data collected in the actual portfolio narrative and reflections. In addition to conducting extensive literature reviews on portfolio assessment, the team's research was also based on both the quantitative and qualitative data collected using questionnaires and in-depth interviews with hundreds of students, teachers, principals and lecturers. This body of Hong Kong research suggested that there are some powerful and critical principles that underlie the use of portfolios for assessment purposes to empower administrators, teachers, students and parents. A staff development model for facilitating a Collegial Quality Learning Environment (CQLE), and the PROVEE.IT! model have successfully helped teachers and students work through the process. Both models will be discussed later in this section.

A portfolio is merely a tool for assessment, in a more holistic student-centered approach to education. The portfolio becomes the location of the student's work; their reflection through writing and student/teacher discussion on the work demonstrates whether the desired outcomes for teaching and learning process have been accomplished or not. For ease of reading, the 10 powerful principles are discussed separately. However, each is systematically inter-linked with one another and cannot be treated as stand-alone since they act and work together in producing a portfolio assessment culture.

Figure 2: Conceptual Framework for Implementing a Collegial Quality Learning Environment



Adapted from "Power of the Portfolio" by Loretta Goff, Amy Colton and Georges Mohlman Langer. *Journal of Staff Development for the National Staff Development Council,* Fall 2000, p. 46.

10 POWERFUL PRINCIPLES

Principle 1: Teacher and administrators must plan for and be trained in the portfolio approach to assessment

The more traditional approaches to assessment need to be supplemented with this more authentic and student-centered approach. To make this paradigm shift means all stakeholders must understand and embrace portfolio assessment. International and Hong Kong research indicates that portfolio assessment cannot be successfully implemented without proper and intensive training for teachers, administrators, principals, and then for the educational and public communities (Fig.2).

Many educational reforms and initiatives ossify and die due to the fact that the professional development needs of teachers and administrators are being overlooked. To implement a new philosophy of assessment one has to devote time for the development of teacher teams, with the support of the principals and other administrators. Research suggests that academic leaders must embrace this approach and ensure that the entire staff also works to bring in this new paradigm for assessment. The teacher needs time to process this new attitude. Administrators need to know about the process, and work to build the capacity in the organization, and also see the possibilities for the use of this type of assessment with the staff. The authors also suggest that appropriate staff development needs to be designed for all levels of the system, including parents and the community. All stakeholders need to be involved in this approach of enhancing student learning. Figure 3 indicates some of the main features that each stakeholder group needs to do to support a portfolio culture.

The staff needs to become part of a Collegial Quality Learning Environment (Fig. 2) where they learn to work together to improve their practice, while helping students develop moral responsibility, ethical responsibility, become humanistic, open-minded, and are able to use authentic assessment. Since this might require a change in the way colleagues work together, it is important that they travel through this change process together. They need to work not just on content but also on affective and metacognitive areas. Anyone planning the staff development activities will need to work with change model and process materials based on work such as that of Professor Michael Fullen such as his 1993 book: *Change forces-probing the depths of education reform.*

Figure 3: Main Features of Support Structure for a Portfolio Culture

Policy	Administrators / Principals	Teachers	Students	Parents
Capacity building focus	Use a consistent informed policy approach	Active team planning using a 6-step process to align curriculum, teaching and assessment	New perspective on learning	Discussion with teachers, principals, and their children
Systemic approach	Support for all levels *administrators/principals *teachers *students *parents	Cooperative Personal and professional More complex Trained to use PA	Reflection Self evaluation Narrative	Support the new perspective on learning
Part of an authentic assessment system	Work to align curriculum and authentic Assessment	Set tasks that are: *quality learning *integral *multiple *all aspects of learning *beyond the classroom	Self reliance Independence Student ownership	Read child's reflection
Provide staff development at all levels *administrators/principals *teachers *students *parents	Empower teachers, students, parents	Monitor progress formatively and summatively	Organization *collect *select *reflect	
Develop guidelines for all levels *administrators/principals *teachers *students *parents	Provide time for Team approach	Certify achievement *criteria *rubrics	Empowered	

Biggs (1996) suggested that Hong Kong has a problem in the way teachers and parents think about assessment which, in quantitative terms, embraces not only learning and its assessment, but also dictates a transmission model of teaching in which many strongly believe. Depending on course objectives,

assessment methods should be as open as possible to different kinds of relevant learning (p. 313). The function of assessment changes, from one of selecting students …. to one that gives information on the skills and competencies of the individual (p. 12). It requires reconceptualization of the nature of learning strategy, including educational assessment. So to move this kind of reconceptualization toward portfolio assessment, all stakeholders must first understand what the actual picture of these types of assessments is for Hong Kong (Fig. 3). They need to be trained to design strategies in order to continue the move toward assessment that is more about giving information on the skills and competencies of each individual student.

Teachers and administrators need to recognize that student assessment can be conducted both quantitatively and qualitatively. The quantitative tradition has been the mainstay in Hong Kong, and is the most influential in determining what and how one assesses students. It also assumes that learning comprises the addition of items of knowledge. With the qualitative tradition, learning is constructed (Constructivism) by the learner over time, changing qualitatively with increasing expertise. The course of learning can be used, with instruction, to chart an individual learner's growth. Assessment in this view is concerned with two issues: charting individual growth with respect to conceptual understanding or performing a skill, and seeing how well an individual performance meets the learning goals with respect to real world applications of learning. Tests signal to learners what the nature of learning is, how they should go about learning, and generally what teachers' value in the whole classroom picture is. This learner expectation effect is called 'backwash', (Biggs, 1996) when students focus on the level and the content anticipated. This usually results in low-level outcomes, but it need not be so since backwash from a suitably well-structured testing/learning environment could also lead to enhanced learning. By understanding this effect, educators can be trained to work together and deliver enhanced assessment for higher quality learning and teaching.

International research results for over 20 years, and recently in Hong Kong, have shown portfolio assessment to be a tool in helping students and teachers work a way of improving both the teaching and the learning in the classroom. The research clearly showed that the use of alternative authentic assessment such as portfolio enhances student learning and teacher professionalism. Therefore teachers and administrators must understand this point to willingly adopt such an approach. Many educational policy makers in the past have neglected this critical and necessary ingredient of ensuring

value-added success. A body of knowledge provides evidence that with proper staff development / training and guidelines this type of assessment strategy can benefit all teachers and students, eventually leading to its successful implementation.

So if one plans to implement portfolio assessment the first step is to consider the necessary and sufficient training in this qualitative approach towards a new philosophy of assessment. This professional development / training must also include supplying the teachers and administrators with curriculum materials in support of understanding and implementing portfolio assessment.

Principle 2: Sufficient resources of time and energy must be allocated to support portfolio assessment

After the staff development training on portfolio assessment has been undertaken the next most critical principle is the resources that are allocated to the implementation. In all of the interviews with both public and private school teachers and principles, the need for time to deliver a meaningful assessment was reported as extremely important. Time is needed for training and equipping oneself with implementation strategies. Time is needed for longer interviews with students. Time is needed for professional discussion with peers. Workload adjustment is needed to allow for time allocation in the normal workday, not to just add it to the already heavy workload. Class sizes need to be reduced. Teachers need time to sit and discuss student progress with the students. Time has to be allocated to this different type of marking. Some innovative ways of timetabling need to be implemented to make time for these activities. Some things in the curriculum need to be de-emphasized to a more in-depth study of certain areas of learning – curriculum priorities. Many of the same considerations must also be attended to in the tertiary sector. While lecturers do not have as tight a time schedule program as the teachers, they still need smaller class sizes to successfully implement portfolio assessment. In addition, lecturers and teachers also need time to plan together and to develop the skills needed on implementing portfolio assessment.

In the United States, where the use of portfolio has been in schools for over 20 years, much has been written indicating that it takes time and effort for successful development and implementation of portfolio assessment. Portfolios have been used in a variety of ways, from kindergarten to post-graduate higher education, and each arena found similarities and differences

in the development and in the implementation. In Hong Kong portfolio assessment has just begun to make an impact on the quality of education.

Most teachers need to devise tests to determine whether a previously taught concept has been learned before introducing something new to the students. This will generally be either a completion or a multiple-choice test. However, it is difficult to write completion or multiple-choice tests that go beyond the Bloom's lower order recall level. For example, the results of an English test may indicate that a student knows each story has a beginning, the middle, and an end. However, these results do not guarantee that a student will write a story with a clear beginning, middle, and end. Because of this, educators have advocated the use of performance based assessment such as portfolio assessment. Performance based assessments "represent a set of strategies for the …. application of knowledge, skills, and work habits through the performance of tasks that are meaningful and engaging to students" (Hibbard *et al.,* 1996, p.5). This type of assessment provides teachers with information about how a child understands and applies knowledge. Teachers can also integrate portfolio assessments into the instructional process in order to provide additional learning experiences for students. The benefits of portfolio assessments are well documented. However, some teachers are hesitant in implementing them in the classroom. This is mainly because teachers feel they do not have enough time and not enough knowledge on how to fairly assess a student's performance (Airasian, 1991). Another reason for their reluctance in using performance based assessment may also be due to previous experiences, when the execution was unsuccessful or the results inconclusive (Stiggins, 1994). Therefore, for teachers to embrace portfolio assessment they have to have the time to learn and plan the use of these new skills. They also need to have the time to work with students in a new, progressive, meaningful, and in a learning-to-learn way.

As schools are moving toward reforming the assessment system, the researchers feel the use of portfolios is an important aspect of quality reform: it can be used to better assess learning. Education leaders will need to plan sufficient time and resources for the proper implementation of portfolio assessment. Teachers and principals need to understand the added-value and empowerment that comes from allocating resources to using portfolio assessment for all involved in the process. There needs to be a full understanding of the skills and time needed for reflection and narrative writing at all levels of the system. The research data clearly showed that with proper planning and sufficient time using this team approach, a team could

successfully implement this assessment strategy in Hong Kong. The pay off for enhanced student learning is well worth the investment of time, energy and other resources.

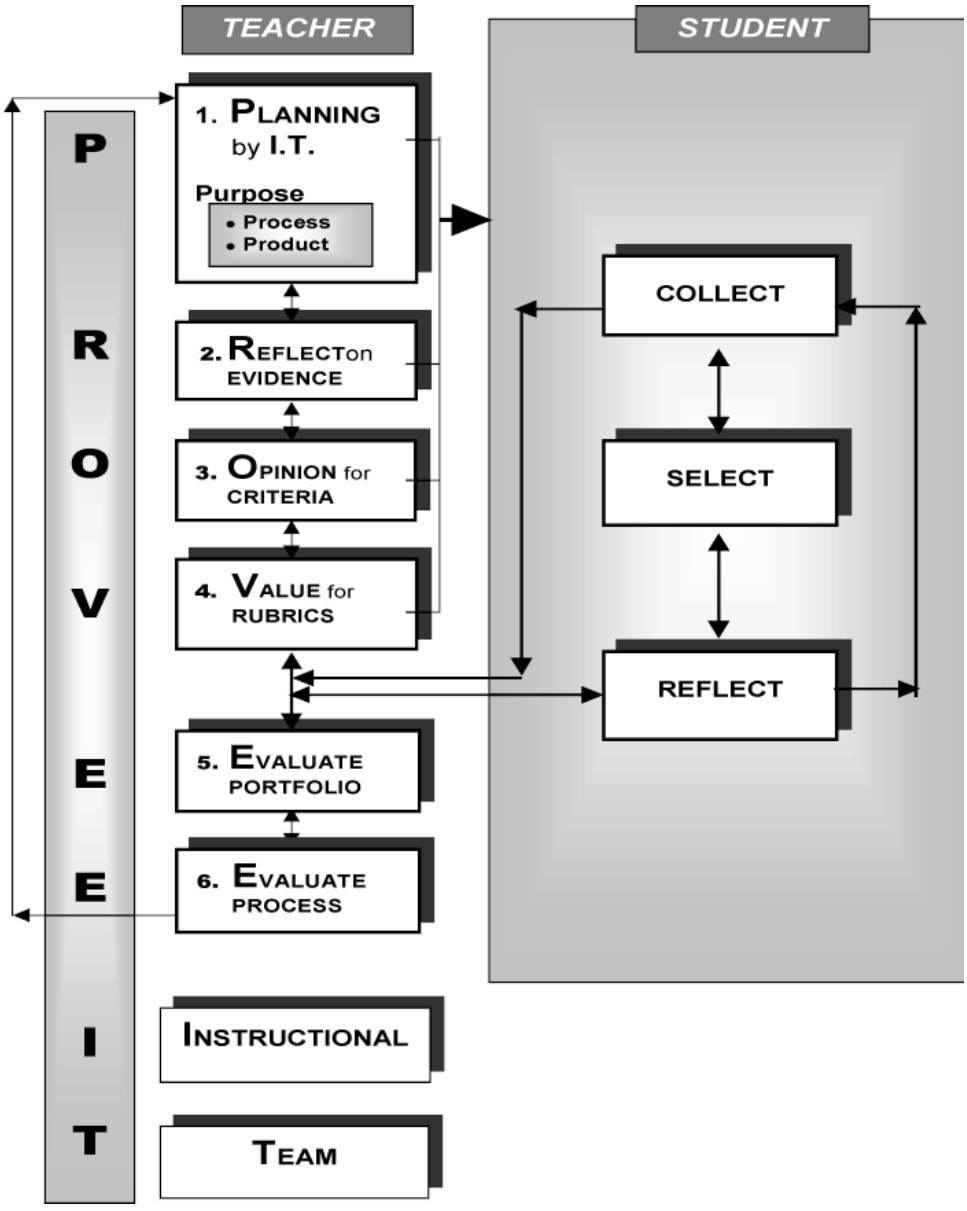
Principle 3: Teachers must work as a team to plan for the implementation of portfolio assessment

The author team has used an **I**nstructional **T**eam (IT) approach to implement portfolio assessment for the six years' work at HKIEd – which led to the development of the model PROVEE.IT! (Fig. 4). The model represents a professional team to **P**lan the purpose, product and process; **R**eflect on evidence needed; discuss the **O**pinion on criteria; set **V**alues for and develop rubrics; **E**valuate the portfolios; and **E**valuate the process. Then, students have to work together to develop their own portfolios, and to work in class on other projects as well. The model is discussed in more detail in subsequent sections (page 29).

Using a team approach as one moves forward ensure a smoother and more logical implementation. Based on previous personal research, both authors felt a team approach of solving both the teacher education teaching and learning problem, and the student proving one can teach using a portfolio was necessary. The research also indicated that a similar model is needed in schools to develop a portfolio culture. Furthermore, it was shown that students, principals, teachers and parents should work together to make the portfolio assessment process much more successful.

While working as a team, the problem solving process will improve their skills as a teacher, and that working together would also improve their communication and planning skills. Bryant (1995) found that educational work accomplished through total participation, such as that of teams, means that individual workers join with others to plan, deliver, and assess the work done. Quality teams utilize the many talents brought to the workplace by members, and invite collaboration that respects various work experiences and contextual differences of team members. Total participation and empowering the individual to be responsible for decisions made in relationg to the working environment seems to be one that will support systemic change (Bonstingl, 1992a; Juran, 1989; Kearnes, 1989; Rhodes, 1990a). In short, it is in the team's overall knowing that the team can understand all parts of a system impact - something a single individual cannot know.

Figure 4: PROVEE.IT! Model



Part of the activities that student teachers undertook during the portfolio assessment process was to begin to link theory and practice through narratives and reflections. They worked as a team to solve many different problem situations related to the portfolio as well as other course content. They often divided up the task, did separate research, and pooled their findings to make a complete solution. It was great to see them blossom under this more constructivist, student-centered approach to learning. Over the seven years students from HKIEd reported that the discussions and working as a team to approach the portfolio, and to solve the problem of proving they can teach, has been and continues to be beneficial.

According to Walkington (1991), when applied to an educational system, all systems of the school community need to be involved in the shared decision-making process and need training to be effective. Walkington (1991) cautions, however, that "…. Shared decision-making takes time, trust and hard work to implement" (p. 23). This warning is critical to teams of educational leaders as they plan for the implementation of this type of assessment strategy. The author team was careful in allowing time for students to develop trust with each other, and with their lecturers in this team approach. It was also found that seven years later, some of these students are still using the skills they developed under the tutelage in becoming more effective teachers. They also commented that they need more time, strategies and guidelines in planning the implementation of a portfolio assessment model in their schools. Another critical remark made has something to do with time for proper staff development and planning supported by the principals. The teams are more motivated to work together when they felt someone else would be looking at their work, making comments for improvement.

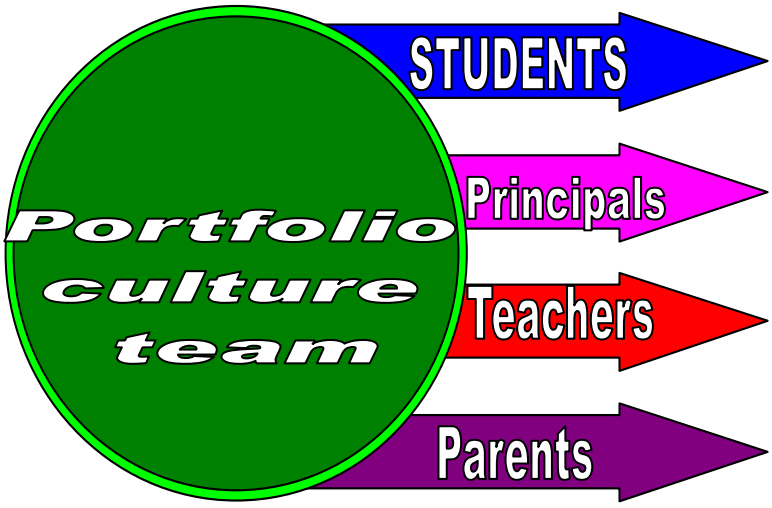
Principle 4: Parents and the public need to understand portfolio assessment

'Public' in this discussion means the entire educational community from kindergarten to university and beyond. If all stakeholders (Fig. 5) are not brought along, there will be severe resistance as one tries to change the old and familiar way to assess. If 'it' has worked well for some of the parents, they felt it is easier to relate to a known, even if the known is not perfect, than trying to 'figure out' a new approach.

The broader public that does not find its way to school as frequently as it should also needs to begin to understand that if they want students to engage

in challenging work then they have to provide the opportunity to do so. It will take a tremendous amount of public awareness, and teachers, principals and other educators who are able to demonstrate should explain the value of both what students are doing and what teachers are learning from it. It's going to take some very enlightened policy makers to be able to forego the simplicity of two digit numbers, and instead look for and request or act on information that shows how many students, for example, can write a persuasive essay of certain characteristics, or design and conduct an inquiry of a certain kind. To accomplish this level of enlightenment, a lot of leadership support in the community is required. To enhance student learning and to make it possible to successfully implement portfolio assessment, policy makers, teachers and administrators will also need to work together to build the capacity in the organizational system, such as a school or an institute.

Figure 5: Portfolio Culture Team



The way of getting powerful teaching and learning is not through national tests, rather it is through assessments that are developed by local communities, parents and teachers, often in collaboration with members of the business and educational community involved in the process. As the

process unfolds, not only are students working toward much more challenging standards, teachers are also learning how to look at their students differently, how to support their learning better, and how to think differently about standards (Sizer, 1999).

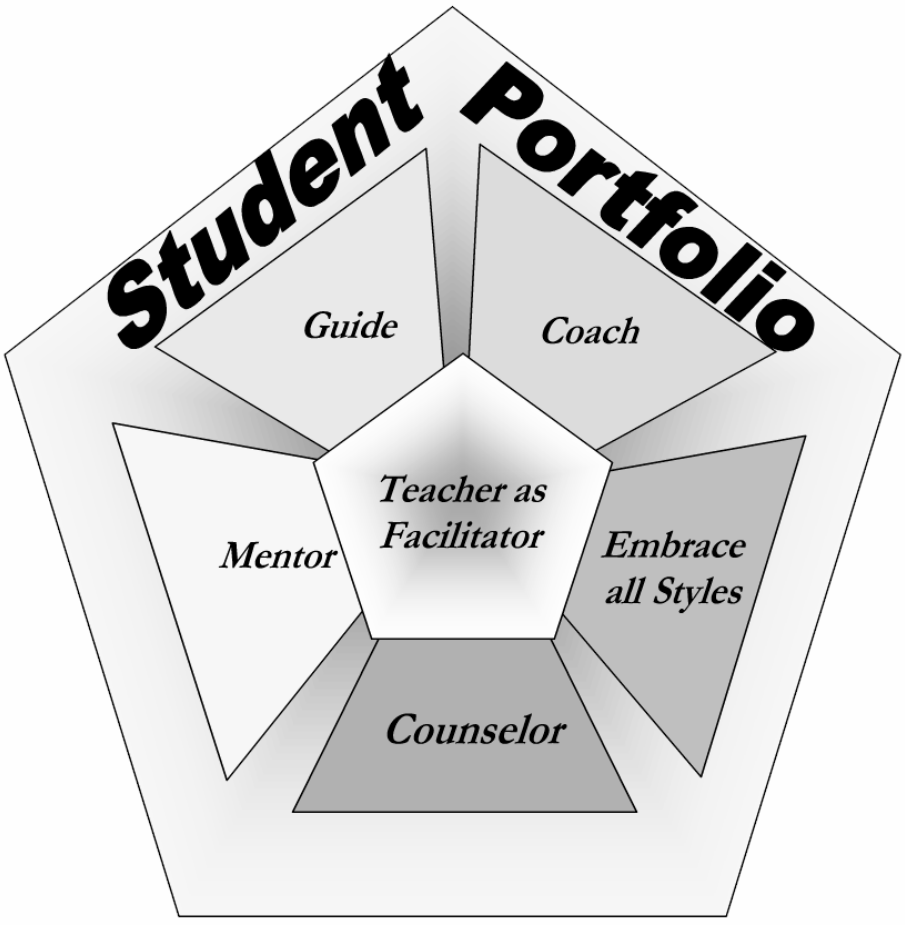
It will also take a lot of public attention. As parents come to have the opportunity of seeing students' challenging and engaging work, or as they sit down with the teacher and look at their development over time, they, in general, will be very persuaded that portfolio provides more useful information about how their children are doing. When they come to the school at the end of the school year and see exhibitions of students engaged in debates, in science experiments, in social science research projects and so on, it becomes very persuasive. They will see for themselves that this method of assessment is fairer and more authentic for all students. It helps all students become more independent learners and thinkers. It also helps them learn how to learn, and parents can see and understand how it is happening (Sizer, 1999).

Principle 5: The teacher's role is vital as a facilitator of the portfolio process

The role of the teacher makes a dramatic shift when using portfolio assessment (Figure 6). The teacher has to become more student-centered, as they have to know each student's needs, strengths and weaknesses. The relationship also changes from a 'sage on the stage' to a 'coach on the side', guiding the student towards appropriate learning goals. The teacher has to energetically embrace all the wonderful difference in learning styles and paces for individual students. The teacher has to embrace true professionalism in learning to tackle this challenging assessment approach. The teacher also has to mentor the student and model a new way to approach learning and assessment. Students will guide each other down their own individual learning path. While it might look like the teacher has less to do – not planning so many tests and quizzes – the opposite is actually true.

Teachers need to assess, evaluate, manage, organize, and use information for problem-solving, decision-making, and critical thinking. Teachers are no just longer information providers, rather they are information guides. In implementing portfolios teachers need to provide the necessary time, guidance, direction, and support for students to develop confidence, independence and ownership of the learning process.

Figure 6: Teacher as a Facilitator



Principle 6: Documentation of the process and student achievements, as well as of the analyses of teaching and learning experiences is critical

Teachers have to understand much more about the learning process each student develops through, and then plan the rest of the journey for them to learn how to learn. The teacher has to trust that the student will discover and learn many things for themselves. The teacher has to believe that each child

is unique and will follow a different path to reach the same learning outcomes. The teacher also has to evaluate that learning fairly and accurately. The teacher has to be on top of everything each student does, in order to be able to act as a guide or facilitator. Like what Wolf, Whinery & Hargerty (1995) indicated:

> *"The strength of portfolio use derives from this process – the learning and the sense of accomplishment. By engaging ….. teachers-in-development in the practice of documenting and reflecting on their teaching, and in holding regular and focused conversations with their colleagues about their practice, we are building individual dispositions and a professional culture that values reflective, collaborative practice". (p. 37)*

Everything the student does and other selected items reflected on needs to be collected for the teacher and the student to see the learning journey. Each item produced by the student needs a date stamp to document when it was created. As the teacher and student work together the evidence becomes the focus of what has been learned, rather than the teacher-created questions for the students to respond through during a test or a quiz.

Principle 7: Portfolio assessment is a developmental process for both teachers and students

Since real learning is a life-long, holistic process the portfolio assists the learner in thinking metacognitively about their learning. Each step along the way helps to build the learners' knowledge base, and each new piece of learning builds on the old learning. The learning in one module or subject needs to be interrelated, and must build on the previous learning. Biggs illustrated this well with his SOLO Taxonomy (Fig. 14, page 51).

So the portfolio is a tool that *represents student growth in areas over time (e.g. presentation skills, cognitive development) and in scope (e.g. own identify and beliefs). At HKIEd student teachers demonstrate growth through appropriate selection of work samples, for instance, video segments which illustrate growth in skills such as teaching, questioning, presentation, or in managing student behavior. All these can be included in the portfolio as evidence.*

These very aspects of portfolio assessment link to the real problem HKIEd students have to solve for themselves, that is, the problem of learning to become a teacher and of establishing an effective learning culture in their classrooms. By using a portfolio assessment approach students are able to write narratives about their attempts of doing this in their classrooms. Psychologist Jerome Bruner (1986) offers one way of thinking about the role

narratives play in the portfolio process. Bruner argues that there are two modes of knowing: the more traditionally acknowledged 'pragmatic' or logical-scientific mode, and a narrative mode. Bruner characterizes the differences between the two as irreducible. Each one provides ways of organizing representations in memory, and of filtering the perceptual world. Efforts to reduce one mode to the other inevitably fail to capture the richness in the ways people 'know' and describe events around them.

As Rorty (1996) has recently put it, one mode is centered on the narrow epistemological question of how to know the truth. The other focuses around the broader and more inclusive question of the meaning of the experiences. The imaginative application of the paradigmatic mode leads to good theory; that is, logical proof, and empirical discovery guided by reasoned hypothesis. The imaginative application of the narrative mode leads to good stories, gripping drama, and believable historical accounts. It deals in human or human-like intention and action, and the vicissitudes and consequences that mark their course (p. 97-98). All of these are helping students and teachers in Hong Kong better articulate what they believe about teaching and learning on their journey through the process of professionalism, and to see how they have developed from being a student to preparing to be a teacher.

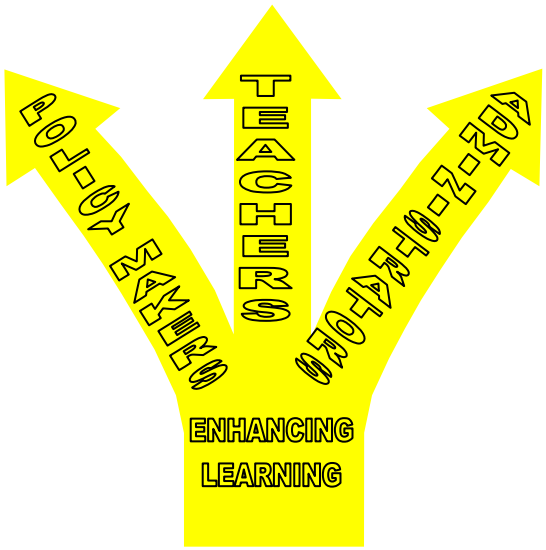
Principle 8: Portfolio assessment provides a new perspective on learning for both teachers and students

Another step required for the teacher is to learn to stand back, and to hand over the responsibility of the learning to the student. The teacher has to learn to trust that the students will learn, and that the reflection writing and discussions are part of the students' motivation. Teacher and student expectation has to be maintained and seen to be both positive and high.

By cultivating a more reflective attitude (Fig. 10, page 37) toward learning, the research indicated that students felt empowered whilst at the same time improved both their communication and subject skills. Using portfolio assessment in the classroom led to changes in the way students began to think about themselves and their learning. As a result, the students began to learn more about themselves as learners. They were also better able to articulate what it meant to learn, and what it meant to teach as they wrote their reflections. Schulman (1985) asked about the vision of teaching which underlies a portfolio, pointing out that the portfolio serves its most significant purpose: as a scaffolding for reflective learning. Paradoxically, the

very personal aspect of the portfolio simultaneously serves another purpose. It makes public and concrete what teaching and learning is all about.

Figure 7: Capacity Building to Enhance Learning



Data analyzed from HKIEd studies on portfolio assessment found that students were more empowered learners. Lyons (1998), who advocates the use of portfolios as an empowering activity, highlighted three perspectives: as a credential, as a set of assumptions about teaching, and as making possible a powerful, personal reflective learning experience. The author team found that students were able to use their portfolios to do all three. Instead of presenting a set of courses and credits earned for purposes of credentialing and certification, the students stood at the center of their own learning, defining and defending the authority of the credential. It was also found that a team approach to learning and reflection helped students and teachers articulate what they knew about teaching, and what they needed to do to be more effective. They could also venture to suggest what the government needed to do in order to implement portfolio assessment in their schools (Fig. 7). As one student described the process:

"The student is actively engaged in the learning. I think I prefer portfolio to examinations because I enjoy doing things individually. Portfolio is a more independent way of learning, and you are responsible for your learning. With portfolio you have to plan your information, then try to express ideas freely". (Student teacher interview, 1997)

There is a fundamental difference between traditional tests and in how portfolio assessment drives learning. The traditional tests are surrogates. They are tokens. The performances and exhibitions included in a portfolio are real work. Do not expect a learner to show somebody that she or he can write simply on being able to analyze a piece of writing in a standardized test, and fill out some multiple choice questions and answers about it. But look at the student's writing; there is an 'authenticity' (another word that's around). If one wants to know if a learner can write, look at his writing. If one wants to know if a youngster can handle an unfamiliar and serious problem in science, give him an unfamiliar and serious problem in science. And then let him show how to solve it and then talk to him.

Most traditional tests give one shot. When a student has a writing sample, the first draft is the final draft. That's not the real world. What one should care about is not the kid's first draft, as much as the kid's final draft. What the exhibition tradition, which goes back 20 years, is about the student's best work, debated publicly. Real work, not tokens quickly taken. That is a big difference – much more demanding. The author was in a school last week. The school was moving from a credit business, a traditional pattern, to a portfolio system. And the youngsters were complaining, "This is much harder, much more rigorous, and much more demanding". They can't hide behind some sort of thing they can con, a system, they have to really perform, and show (Sizer, 1999).

Principle 9: Self-evaluation of learning is an integral part of the portfolio process

Another paradigm shift for teaching and learning that is required for portfolio assessment is the element of self-evaluation – both for the teacher and the student. Each has to hold up a mirror and look at themselves through the eyes of the other. The teacher understands metacognitively what is going on for each party in the teaching and learning process, and then focuses on how each can improve.

At first student teachers at HKIEd find it difficult to write self-reflective statements. This is why teacher feedback and peer review is important. Student teachers are able to develop more meaningful self-evaluative

comments with such assistance. Developing this skill is also helpful in working towards increased reflectivity. (For more discussion see the following section on "Writing Reflective Statements".)

Principle 10: Collecting, selecting and reflecting on work is central to the portfolio process

The entire process of portfolio assessment rests on this strategy. The student has to learn to collect everything (which has a time and date stamp), and then select what pieces of work best exhibits what they have learned over the process of the module or class. They also have to reflect on and discuss the learning that has occurred.

Developing the capacity to select evidence to demonstrate attainment of particular competencies takes time and skills in evaluation. Students develop a greater understanding of their particular learning style when they self-evaluate and reflect on the evidence they have selected for inclusion in the portfolio and for demonstrating competence. The portfolio requires student teachers to document their growth and change by selecting evidence from their teaching and learning practices. Students become more self-regulated and gain personal control and independence in their learning. They are also able to use a wide variety of learning styles to demonstrate their learning (Lyons, 1998).

PROVEE.IT! MODEL

PROVEE.IT!
Application …. Planning a PORTFOLIO
The process and the product

The most critical part of the portfolio assessment process is the planning for the process and the product (Fig. 8), as part of a Collegial Quality Learning Environment (CQLE) (Fig. 2). This process becomes ongoing and focusing on continual improvement. It helps to improve the practice of teaching while also improving learning outcomes for students. Teachers not only deliver content, they also develop a more humanistic and open-minded approach to their interactions and communication with students and colleagues. Students develop a more moral and ethical approach as they become responsible for their own learning – it becomes harder to cheat the system and find strategies to 'get out of work'. Cognitively the focus is on the subject, learning, and instruction based on personal experience and values. The teacher and the student are involved in an affective as well as metacognitive journey together. It is not a static process; it has to be emergent in that it has to be flexible even after it has begun.

The introduction of any innovation usually upsets the state of equilibrium and causes changes, some of which are unpredictable. As reforms are complex and fluid, they need to know which stages of implementation they have reached and to understand the changes that are occurring in its culture. With this knowledge, they may respond to the demands of the situation in a timely manner, meet the expectations of its stakeholders, and steer the reform in the agreed direction.

Once the **I**nstructional **T**eam (IT) has made the decision of using portfolio assessment (PA), then the IT has to decide how students will PROVEE what they have learned. The IT must decide what is the **P**urpose, **R**eflect on the evidence that will be needed, collect **O**pinions on what should be the criteria, set **V**alues for rubrics, and then decide how they will **E**valuate the portfolio and how they will **E**valuate the process. The student's part of the process is the **C**ollect, **S**elect, and **R**eflect process, which eventually lead to the completed Portfolio.

In addition to understanding the 10 powerful principles of portfolio assessment educators must also know that it is a process leading to a product. For successful implementation an Instructional Team (IT) of educators, and

which ultimately must also include the students and parents (Figure 5), is needed to work on the process of developing a plan for successful implementation.

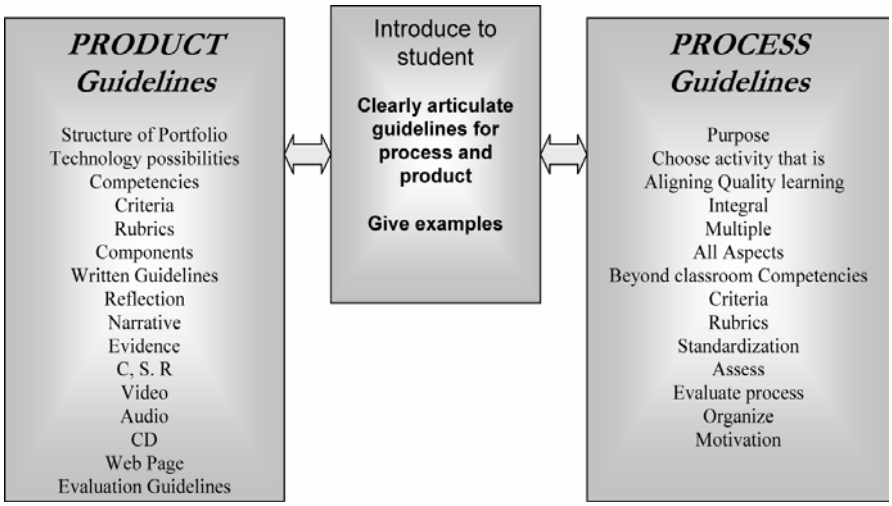
The following suggestions will help guide the IT's discussion, but are in no way exhaustive. The most important thing is to enter discussions with an open-mind, and to become a lateral thinker in thinking flexibly about making concrete the process of teaching and learning to reach the desired learning outcomes. The following basic steps outline a plan of executing effective portfolio assessment.

PLANNING FOR PA: THE PROCESS AND THE PRODUCT

Overview

The IT must have the ability to work together, to plan for the process and the product (Fig. 8). The first step is to identify the purpose of Performance Assessments using a portfolio. This step represents initially about 50% of the time needed for the PA process, so be certain to plan sufficient time for these discussions before planning to implement portfolio assessment. These discussions will occur after the IT has had sufficient training, and had been provided with guidelines. The other 50% of the process involves the selecting of criteria, rubrics, and then evaluating both the portfolio and the overall process. This step is critical as it needs to focus on continually improving both the process and the product.

Figure 8: Process and Product



Plan both purpose and learning tasks

Defining the purposes of the portfolio assessment. Assessment reformers identify five purposes in an educational setting where performance assessment systems, which would include portfolio assessment, are intended to serve. Many of the other assessment systems also intend to serve multiple purposes simultaneously. These five purposes are outlined by Biggs (1996) as follows:

- **Monitoring student progress** toward desired outcomes. This is a feature of most assessments developed at any level of initiation.

- **Holding schools and teachers accountable** for student achievement. This can either be formally, through a system of rewards and sanctions, or informally, through mechanisms such as reporting school and district performance averages in the media. It is a purposed shared by several of the performance assessment systems included in the study.

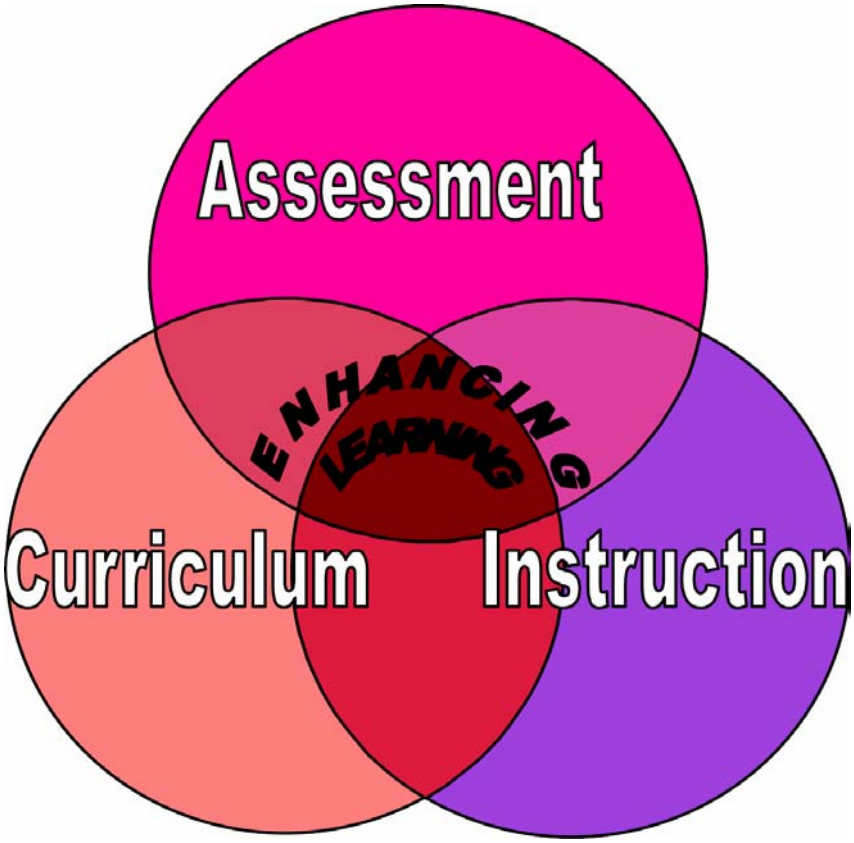
- **Certifying student skills and capabilities** is a purpose of some performance assessment systems.

- **Achieving better alignment of curriculum, instruction and assessment** is the focus of some national reform efforts, and is sometimes an implicit goal of state-initiated performance assessment systems, especially ones that focus on enhancing student learning (Figure 9).

- **Informing and influencing curriculum and instruction practice.** This is the most frequently cited purpose underlying assessment reform. It is assumed that the use of performance assessments will necessarily promote shifts in pedagogy to emphasize higher-order thinking and problem-solving skills.

Whichever purpose the IT decides upon it is vital that the decision is a collective one. It is possible to have multi-purposes, but this makes the process more complex.

Figure 9: Alignment needed for Enhancing Learning



In order to administer good assessment, including portfolio assessment, there must be a clearly defined purpose. The teachers on the IT must first answer the following questions as they attempt to align curriculum, instruction and assessment (Fig. 9). By answering these questions, one can then decide what type of activity best suits the assessment needs.

- What concept, skill, or knowledge is being assessed?
- What should students know?
- At what level should students be performing?
- What type of knowledge is being assessed: reasoning, memory, or process (Stiggins, 1994)?

- How can a student **prove** and **demonstrate** what they have learned?
- How will one know how to assess a range of successful performances?

After the purpose is decided, then the IT needs to plan the authentic tasks for the learner, and on how each teacher will assess each task.

Choosing the activity or task. After the purpose of the portfolio assessment is defined, decisions concerning the activity or task must be made. There are some things that must be taken into account before one chooses the activity: time constraints, availability of resources in the classroom, and how much data is necessary in order to make an informed decision about the quality of a student's performance. This is also what the student will do in the **Select** step of their portfolio assessment process (Fig. 4). The student must process all the data from the course or module, and analyze the data and select what they will reflect on to prove what they have learned. (This consideration is also frequently referred to as sampling).

Ability to set authentic tasks for learner. After reviewing 1500 schools Newmann & Wehlage (1995) found successful schools focused on 'authentic' pedagogy (teaching that requires students to think, to develop an in-depth understanding, and to apply academic learning to important realistic problems) and student learning. One especially critical ingredient was authentic assessment that set tasks which focused on the following:

- Construction of knowledge
  - Organization of information
  - Consideration of alternatives
- Disciplined inquiry
  - Disciplinary content
  - Disciplinary process
  - Elaborated written communication
- Value beyond school
  - Problem connected to world beyond classroom
  - Audience beyond school

The literature distinguishes two types of performance based assessment activities that one can implement in the classroom: formal and informal (Airasian, 1991; Popham, 1995; Stiggins, 1994). When a student is being informally assessed, the student does not know that the assessment task is taking place. A teacher uses informal performance assessment tasks all the

time. One example of something that one may assess in this manner is how children interact with one another (Stiggins, 1994). One may also use informal assessment to assess a student's typical behavior or work habits.

A student who is being formally assessed knows the task that they are being assessed on. When a student's performance is formally assessed, one may either have the student perform a task or complete a project. One can either observe the student as she or he performs specific tasks, or evaluate the quality of the finished products.

One must beware that not all hands-on activities can be used as portfolio assessments (Wiggins, 1993). Performance based assessments require individuals to apply their knowledge and skills in context, not merely completing a task on cue or being able to articulate what they have learned. The teacher needs to keep notes from the formal and informal discussions and presentations in order to develop an accurate profile for each student.

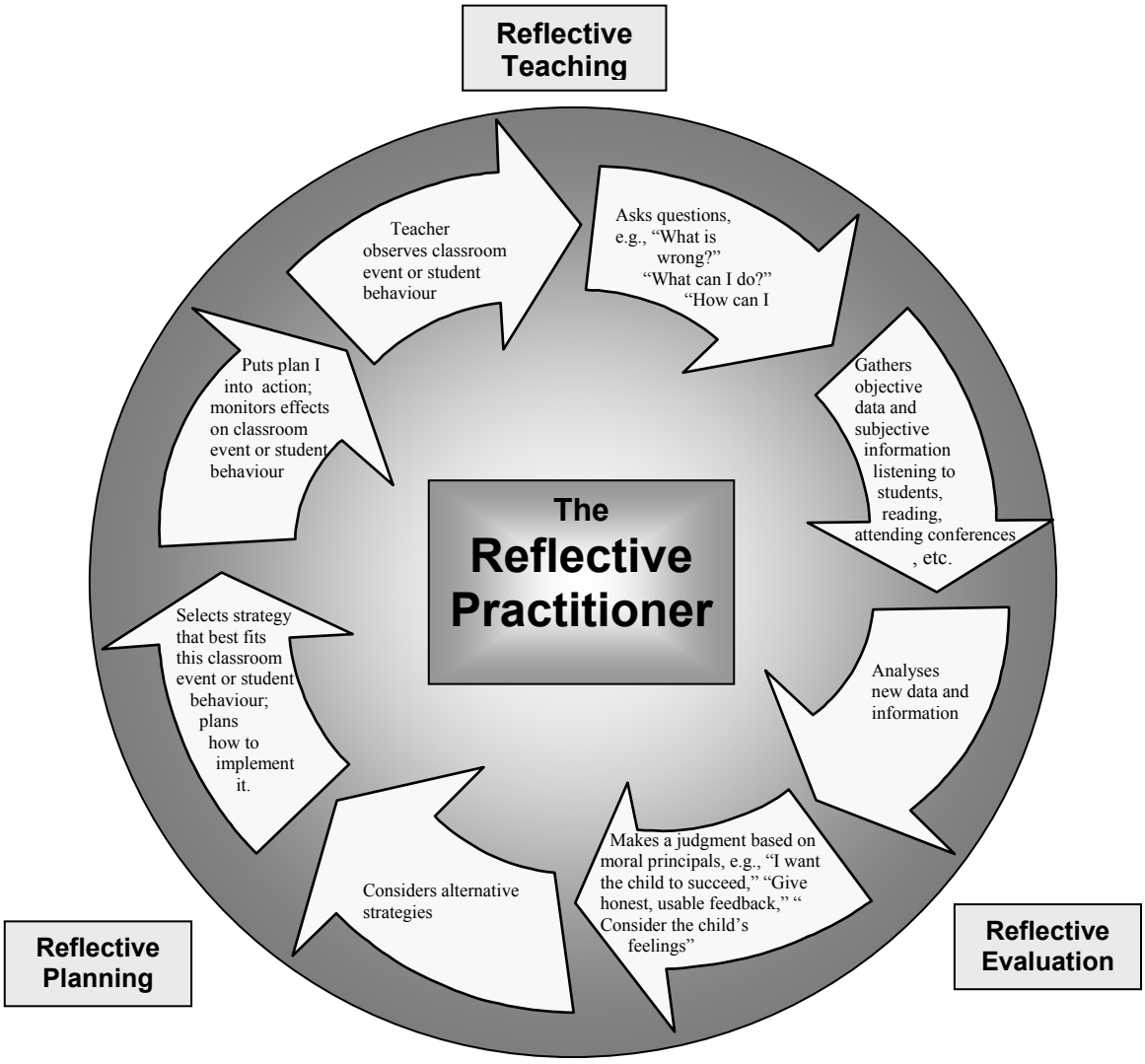
Design for portfolio use: The product

After the IT decides on the purpose and the tasks of the process, they must decide on the product. It is important to remember that there are two elements to the design of the portfolio. There are PRODUCTS (artifacts that the student selects to incorporate into his or her portfolio), and the PROCESSES that the student must develop, use and implement in preparing the portfolio (Fig. 8).

The design of the product, or tangible outcome, can be left to student choice. Some students are particularly creative in product design while others use a file to present all their work.

The portfolio is a reflective (Fig. 10) document rather than a simple list of student teaching and learning experiences. It is reflective of the competencies the student is required to demonstrate in the course or module. The student, as part of their Collect, Select and Reflect process, must use processes of reflection, analysis, synthesis and evaluation. The student takes the data from the teaching and learning experiences, and then analyzes and reflects on the learning. And in the case of a teacher training institute, hopefully the new student teacher would put these into action in their classrooms of the future.
.

Figure 10: The Reflective Teacher / Student



Each competency has indicators of attainment that provide examples of the behaviors a student who has attained a particular competency is likely to demonstrate. They are only examples, and the student is free to think of others that may be relevant to their own subject-teaching context.

It is vital that the teacher explains the competencies and their associated indicators and rubrics with the students. A thorough understanding of each

competency will assist the student in organizing his or her portfolio effectively, and will demonstrate attainment of module requirements.

Another set of decisions that must be planned for, as part of the process, is to plan for the introduction of the portfolio process to the students. **Whichever way the IT plans for the portfolio process, one must consider how this change of assessment philosophy will impact on student philosophy, expectation and motivation.**

PLANNING FOR INTRODUCING THE USE OF PORTFOLIOS

For many students, the portfolio is a new concept. Therefore, thorough explanation and clear guidelines are needed. Teachers can raise student awareness about the use of portfolios for assessment in the following ways:

- Use teaching aids such as videos and PowerPoint presentation to outline the background, the theory, the processes and procedures involved in the use of portfolio. Provide the students with sample portfolios to help them understand the format, evidence and standards required.

- Provide students with guidelines that make the expectations of portfolio use explicit. Outline the design of the portfolio, the competencies the student is required to demonstrate, and the indicators of attainment that the student may choose to include in his or her portfolio.

- Share the assessment process with the students by discussing the criteria to be used. Clarify the grade descriptors and share exemplars with students to help them understand the standards required. Provide students with feedback for formative purposes during stages of development of the portfolio. Use progress maps to indicate clearly where students are demonstrating competence and where they need to develop competence.

- Explain the developmental nature of the portfolio and the need to collect baseline data. For example, facilitate student video recording of important stages of their development. Allow students time to reflect, self-evaluate, and/or practice their presentations.

Teachers need to encourage students to present their portfolios and demonstrate their learning, both formally and informally. Teachers need to encourage discussion and critique on student performance. Students will come to better understand the standards through presentation and small or large-scale group discussion. Allow students to work collaboratively, and encourage peer critique and evaluation. Ensure groups discuss early in the course and throughout as needed. This builds up a group dynamic, and creates trust, self-confidence and motivation to produce a portfolio of quality.

GUIDELINES

The portfolio documents the students' achievements over an extended period, and reflects careful, critical self-evaluation. For each competency the student must provide a reflective statement that is supported with evidence from his or her learning and teaching experiences.

The reflective statement, together with the evidence selected by the student, is used to assess whether the student has demonstrated competence. The student can select evidence from a range of materials in their learning or teaching contexts to support the reflective statement for each competency. Items they can select, include: research papers, assignments, lesson plans, schemes of work, video clips, photographs, samples of students' work, and self-evaluations. As the technology continues to improve it is recommended that the portfolio can largely be in electronic format.

THE STRUCTURE

The most common structure for a portfolio is an A4-sized file that has clear pockets to accommodate all items presented for assessment. For example, bulky items such as video clips can be presented in this type of file. The file should be arranged according to the demands of the course or module. This clear pocket approach is, however, hard to handle physically. It is also time consuming, especially when the teacher wants to comment on the pages. Another consideration might be for a whole-punched notebook where students can add and take out pages, and also attach clear pockets to hold videos. It is likely that the electronic portfolio will become the norm. Student might need help initially in learning how to organize and present their evidence.

THE COMPONENTS

An example of the components of the portfolio is as follows:
(1) module outline,
(2) criteria, rubrics and marking scheme,
(3) checklist of items to include,
(4) self-evaluation,
(5) reflective statements, and
(6) evidence.

Module Outline / Criteria, rubrics and marking scheme
Include the module outline given by the teacher/lecturer at the commencement of the course. This must include all assessment information, for the students to know what is expected of them. This must include all the criteria, rubrics, grade descriptors and marking scheme.

Checklist
Include the checklist provided by the teacher/lecturer. The purpose of the checklist is to ensure that all relevant material and information has been included, and that an appropriate format for the portfolio has been presented.

Self-evaluation
A self-evaluation should be included. The information included in the student's self-evaluation will provide the lecturer with important information concerning the student's teaching and learning experiences. Students can be surprisingly candid in the evaluation of their own competence. Sometimes they can be hard on themselves and colleagues than the teacher is.

Also include (among other things):

i) a description of the course and subjects the student has selected (the student should include the subjects he or she **is likely to be** teaching).
ii) a discussion of what the student values to be major strengths (the student should include what he or she considers to be strengths in the teaching and / or learning experiences of the module or course).
iii) a discussion of what the student evaluates as areas of learning and / or teaching in need of improvement. This is essential in the professionalization process.

Reflective statements and evidence

Students will need to be taught how to develop reflective practice, (Fig. 10) and how to select valid, reliable and adequate evidence to support claims. The lecturer will explain carefully and clearly the expectations and the criteria to be used in assessing the portfolio.

i) for each competency students should provide a reflective statement which demonstrates attainment of the competency. To support the claims made the student should attach evidence from their learning or teaching contexts.
ii) the reflective statement for each competency should be written succinctly and should be a maximum length of one A4 page. For example, if the module has ten competencies, then the maximum number of pages included in the portfolio would be ten plus one piece of evidence for each reflective statement, i.e. these statements will focus on self, task and impact.
iii) each competency for the module must be addressed. That is, a reflective statement plus a piece of evidence must be included for each competency.

WRITING REFLECTIVE STATEMENTS

The reflective statement provides an opportunity for the student to analyze and illustrate how he or she has attained a competency for the module/class. To do this the student must provide concrete evidence from his or her teaching and/or learning environment.

For example, one of the competencies for the HKIEd *Instructional Design and Strategies for Effective Teaching* is that the student can **provide a statement of personal philosophy, goals and core values.** To demonstrate that the student has attained this competency, the reflective statement should include a discussion of the student's central values as a teacher. These values will be developed, for example, from students' reading about teaching and learning styles, from their own experiences of teaching / learning and / or from their cultural background. Students will therefore discuss the opinions they have formed about teaching and learning styles and theories, teacher-student relationships, and values they believe underpin their personal beliefs as a teacher.

The student must provide one piece of evidence to support the claims made in the reflective statement. For example, to support their claims in the reflective statement for the above competency, students can choose to include:

i) a concept map that outlines these central beliefs, or
ii) a video clip that demonstrates the values as shown in teaching and learning strategies used, or
iii) a research paper that clearly describes the student's central beliefs as a teacher, or
iv) an annotated photographic display of teaching and / or learning practices that reflects a student's goals as a teacher, or
v) a piece of evidence of their own choosing.

An example of a **reflective statement** and accompanying evidence for the competency *provide a statement of personal philosophy, goals and core values*. This example is based on the competencies required of students studying the HKIEd module *Instructional Design and Strategies for Effective Teaching*.

> *As a teacher I value and emphasize critical thinking. This kind of reflective education not only teaches students basic subject knowledge but also teaches them how to make intelligent choices in all areas of their lives.*
>
> *I deeply believe that every student has some good qualities regardless of his or her academic achievement. Therefore to become a responsible and helpful teacher, I should match my teaching strategies with my students' learning styles so as to motivate their learning, and to develop their talents and potential to the fullest (this may not be academic). [*Refer to the ***video clip (not included)*** *of my teaching practice where I used teaching strategies to match my students' learning styles].*
>
> *Another personal belief of mine is that I do not always consider the best academic performer as the best student, rather I prefer to assess my students individually by examining the progress they are making in academic achievement as well as in other areas of performance. For example, I value the student who is less able to perform academically yet who strives hard to achieve, compared with the student who is gifted and does not put in the effort and gets a slightly better grade. I believe that the student's willingness to learn and the effort he or she puts into the work counts (process) more than the grade (outcome). If the process is not valued, then education would be meaningless in the sense that students are just mechanically performing what they are capable of doing without attending to the actual process of learning.*
>
> *For most of us, when thinking back on the teachers we liked and admired, we realize that those teachers gave us much personal attention. They acknowledged us, spoke with us, encouraged us, sometimes pushed us and enjoyed the improvements we made. In doing so*

they made us see ourselves as worthwhile. We felt we belonged, were capable and that someone important cared about us. In this way they helped us believe in ourselves and develop confidence to work on our tasks. One of my central goals as a teacher today is to aspire to achieve these qualities to inspire my students. As a teacher I want to care about the whole person, not just the academic aspect.

The last goal that I wish to mention is that I have the confidence and the belief that I will not give up on any of my students. Even when problems arise I will not abandon them. I believe that improvement, both in teaching and learning, is always possible. Every teacher has, at her respective level, the possibility of modifying the situation confronting her. By identifying the components that can be modified she can in fact restructure the environment for the benefit of her students.

DEFINING THE CRITERIA

After one has determined the activity and its related tasks, one needs to define which elements of the project / task one shall use to determine the success of the student's performance. Sometimes, one may be able to find these criteria in local curriculums or other published documents (Airasian, 1991). Although these resources may prove to be very useful to one, some lists of criteria may include too many skills or concepts, or may not fit one's needs exactly. With this in mind, one must be certain to review criteria lists before applying any of them to performance based assessment.

Sometimes it becomes necessary for one to develop his or her own criteria. When one needs to do this, Airasian (1991) suggests the following steps:

i) Identify the overall performance or task to be assessed; perform it to one's self or imagine one's self performing it.
ii) List the important aspects of the performance or product.
iii) Try to limit the number of performance criteria, so they can all be observed during a student's performance.
iv) If possible, have groups of teachers (IT) think through the important behaviors included in a task.
v) Express the performance criteria in terms of observable student behaviors or product characteristics.
vi) Do not use ambiguous words that cloud the meaning of the performance criteria.
vii) Arrange the performance criteria in the order in which they are likely to be observed.

One may even wish to allow the students to participate in this process. One can do this by asking students to name the elements of the project/task that they would use in determining how successfully it was completed (Stix, 1997).

Having clearly defined criteria will make it easier to remain objective during the assessment. The reason for this is the fact that one will know exactly which skills and / or concepts are supposed to be assessed. If one's students were not already involved in the process of determining the criteria, one will usually want to share them with the students. This will help students know exactly what is expected of them.

The criteria for competencies students studying the HKIEd module *Instructional Design and Strategies for Effective Teaching* need to demonstrate are described below. The portfolio provides an opportunity for students to demonstrate their learning and attainment of competencies. The following illustrates the various competencies (Figs. 11 & 12).

Figure 11: Self, Task and Impact

Criteria for Competencies That Relate to:	
SELF	*provide a statement of personal philosophy, goals and core values.* *provide an evaluation of one's own teaching in order to improve it.*
TASK	*plan teaching on the basis of recent learning theory (e.g. constructivism)* *align teaching objectives, content, teaching method and assessment* *make effective use of different means of grouping students (whole class, groups, pairs, individuals)* *motivate and engage students in learning* *develop sound routine procedures to manage recurring tasks* *respond appropriately to situations that may arise incidentally*
IMPACT	*establish expectations for students that are clear, challenging and achievable.* *teach students according to their diverse talents and interests.*

The criteria to be used in the assessment of the portfolio should be shared with the students at the outset of the course. The criteria should be communicated easily and should be fair. Gender and ethnic bias should be considered in the development of the criteria such that no student is disadvantaged.

Figure 12: Criteria for the Assessment of Portfolio

COMPETENCIES THAT RELATE TO SELF	
Criteria	**Evidence selected for inclusion in the portfolio attached to the reflective statement might include:**
Provide a statement of personal philosophy, goals and core values.	• a concept map that outlines your central beliefs as a teacher • a video clip that demonstrates your values as depicted in the teaching and learning strategies you choose to use • a paper that clearly describes your central beliefs as a teacher • an annotated photographic display of teaching or learning practices that reflect your goals as a teacher
Provide an evaluation of one's own teaching in order to improve it.	• a self-evaluation of lessons taught during the teaching practice • an evaluative report of your teaching practice experience. • a supervisor's report and your analysis and annotations.

COMPETENCIES THAT RELATE TO IMPACT	
Establish expectations for students that are clear, challenging and achievable.	• lesson plan(s) that clearly outline the expectations for students and an analysis of these expectations given the content, the grade and student's ability. • teaching aids (or photographs of these) with an explanation of how they are linked to expectations and intended learning outcomes for the student. • an annotated set of artifacts used on teaching practice (worksheets, assignments, group work instruction) that were intended to establish clear, challenging and achievable expectations for students.
Teach students according to their diverse talents and interests.	• a research paper that addresses the topic of teaching students according to their diverse talents and interests. • annotated student work samples that illustrate how the task you have set attends to the individual student's interests or talents. • a set of lesson plans and/or teaching strategies that attend to individual student differences.

COMPETENCIES THAT RELATE TO TASK	
STAGE	**Evidence selected for inclusion in the portfolio attached to the reflective statement might include:**
Plan teaching on the basis of recent learning theory (e.g. Constructivism).	• lesson plans that demonstrate understanding of current learning theories. • scheme of work based on constructivist learning theory. • a research paper that demonstrates understanding of current learning theories and discussion of implications for lesson planning.
Align teaching objectives, content, teaching method and assessment.	• samples of student work that illustrate alignment of lesson objectives, content and teaching and assessment methods used. • a sample of lesson plans (or scheme of work) that outlines the alignment of objectives of the lesson(s), content taught, assessment and teaching strategies employed. • a video clip (or series of video clips) of lesson(s) taught on teaching practice that illustrate the alignment.
Make effective use of different means of grouping students (whole class, groups, pairs, individuals).	• video clip showing your use of different means of grouping students. • a summary of student reactions to the different means of grouping used by you during your teaching practice. • an annotated photographic display, which illustrates your use of different means of grouping students.
Motivate and engage students in learning.	• lesson plan(s) with a discussion and analysis of motivation techniques used to engage students in their learning. • video clip of lesson(s) that incorporate motivation strategies for learning. • samples of student work that demonstrate motivation and engagement of student learning.
Develop sound routine procedures to manage recurring tasks.	• an evaluation of teaching practice that describes and assesses the procedures adopted to manage routine tasks • a research paper that offers suggestions for handling recurring tasks • samples of artifacts used to facilitate the management of recurring tasks.
Respond appropriately to situations that may arise incidentally.	• discussion paper that incorporates reading and research carried out on teaching strategies to deal with situations that may arise incidentally. • report on lesson(s) to illustrate how teaching strategies have been modified to address situations that may arise incidentally. • self-evaluation of teaching practice that attends to analysis and critique of own experiences of handling situations that arise incidentally.

Remember the student may also wish to include evidence of his or her own choosing to address the competence.

Lecturers should share and discuss the grade descriptors so that students have a clear ideas of the standards required. For example, a set of grade descriptors used in the assessment of portfolios of student teachers should be provided.

CREATING PERFORMANCE RUBRICS/GRADE DESCRIPTORS

As opposed to most traditional forms of testing, portfolio assessments don't have clear-cut right or wrong answers. Rather, there are degrees to which a person is successful or unsuccessful. Thus, one needs to evaluate the performance in a way that will allow one to take those varying degrees into consideration. This can be accomplished by creating rubrics for each of the criteria for each level of performance, such as the SOLO taxonomy discussed below and summarized in Figures 14 and 15.

Grade descriptors

Students need information about how judgments of their work will be made, and they need this information at the outset. Students come to understand the standards required if lecturers share exemplars of students' work and if grade descriptors are used, reiterated and internalized. Formative feedback for both formal and informal assessment from the outset will also assist the student determines the acceptable quality.

A rubric (Fig. 13) is a rating system by which teachers can determine at what level of proficiency a student is able to perform a task or display knowledge of a concept. With rubrics, one can define the different levels of proficiency for each criterion. Like the process of developing criteria, one can either utilize previously developed rubrics or create one's own. When using any type of rubric, one needs to be certain that the rubrics are fair and simple. The performance at each level must also be clearly defined and accurately reflecting its corresponding criterion (or subcategory) (Airasian, 1991; Popham, 1995; Stiggins, 1994).

Figure 13: Grade Descriptors with Rubrics

Grade A DISTINCTION
• The evidence selected for the portfolio is of outstanding and exceptional quality in all respects and surpasses the objectives for the module. • The reflective statements demonstrate deep and original thinking, interpretation, critical thinking and synthesis. Cogent arguments are used and supported by well-selected references. • The work is well structured, is expressed with flair and there is little or no redundancy. • The grade is an expression of the confidence in the ability of the student to progress as an independent learner.
Grade B CREDIT
• The evidence selected for the portfolio surpasses the objectives for the module and demonstrates a sound understanding of content. • Arguments are used in the reflective statements to support the student's point of view and references are used appropriately. • The work is well structured, well organized, written fluently and correctly documented. • The grade is an expression of confidence in the ability of the student to progress with some supervision and guidance.
Grade C PASS
• The evidence selected for the portfolio achieves the objectives for the module, and demonstrates an adequate grasp of the content, but is confined to the minimum requirement. • There is little evidence of independent reflection in the reflective statements and research is superficial with a minimum attempt at analysis and/or synthesis. • The work is poorly organized and the language is reasonably fluent but has some lapses in grammar and syntax. • The grade is an expression of confidence in the ability of the student to go further with normal supervision and guidance.
Grade D FAIL
• The evidence selected for the portfolio does not adequately meet the objectives for the module. • The reflective statement is a simple recall of facts with little or no evidence of research or documentation. There is no effort to supplement evidence with own critical reflections. • The work is not well structured and the overall organization is poor and lacks consistency. • The grade is an expression that student may resubmit but will find higher-level work very difficult. (Students granted a supplementary assessment can qualify for no more than a Pass Grade, of C).
Grade E CLEAR FAIL
• The evidence selected does not achieve the objectives for the module and demonstrates little understanding of the content of the module. • The reflective statements make assertions without supportive evidence and arguments. • The work does not meet the minimum levels of presentation for this module: there are major, frequent mistakes in written expression. The work does not address the stated requirements and is not organized in an obvious manner.

When deciding how to communicate the varying levels of proficiency, one may wish to use impartial words instead of using numerical or letter grades (Stix, 1997). For instance, one may want to use the following scale: word, sentence, page, chapter, and book. However, words such as 'novice', 'apprentice', 'proficient', and 'excellent' are frequently used.

As with criteria development, allowing the students to assist in the creation of rubrics may be a good learning experience for them. One can engage students in this process by showing them examples of the same task performed / project completed at different levels, then discussing to what degree the different elements of the criteria were displayed. However, if the students do not help to create the different rubrics, one must share those rubrics with the students before they complete the task or project.

ASSESSING PERFORMANCE THROUGH PORTFOLIOS

Broadfoot (1996) has stated:

> *"… the type of assessment we use will play a large part in determining the learning attitudes and strategies that learners adopt, and also in influencing the extent to which learning, whether in school or in professional settings, offer the opportunity to develop learning ability itself". (p. 32)*

Good teachers are good learners, and it is through the processes connected with portfolio design and presentation that students gain insights into their own learning attitudes and strategies. The development of a portfolio might take the entire semester thus it is important that the student receives formative feedback from the lecturer at the early stages of development. The assessment of the portfolio will help to define what the student knows and can do, and will facilitate the planning of further learning. Even for a portfolio used for a short 3-week class it is possible for the student and the teacher to see the growth in learning that has been made in relation to the course or module objectives.

When one looks at the matter of comparing individuals with each other, it is also referred to as *norm referenced*. This means that examination of the final grade of a student is compared with other individual students so that a normal distribution curve of results can be tabulated. This comparison determines the final grade by manipulating numbers, and does not examine

understanding or contextualization by individuals. Thus, an **'A'** standard this year may not be the same standard as an **'A'** next year. This certainly places students, but does not reflect educational attainment.

Qualitative methods of assessment

Constructivism has important implications for assessment. In particular, grading should be holistic: the assessment performance should be evaluated as a whole, not in bits and pieces.

Defining levels in the growth of learning

One taxonomy that could be use to assess the student's performance is the SOLO (Structure of the Observed Learning Outcome) Taxonomy (Biggs & Collins, 1982). The SOLO Taxonomy illustrates five stages in the growth of subject competence or understanding:

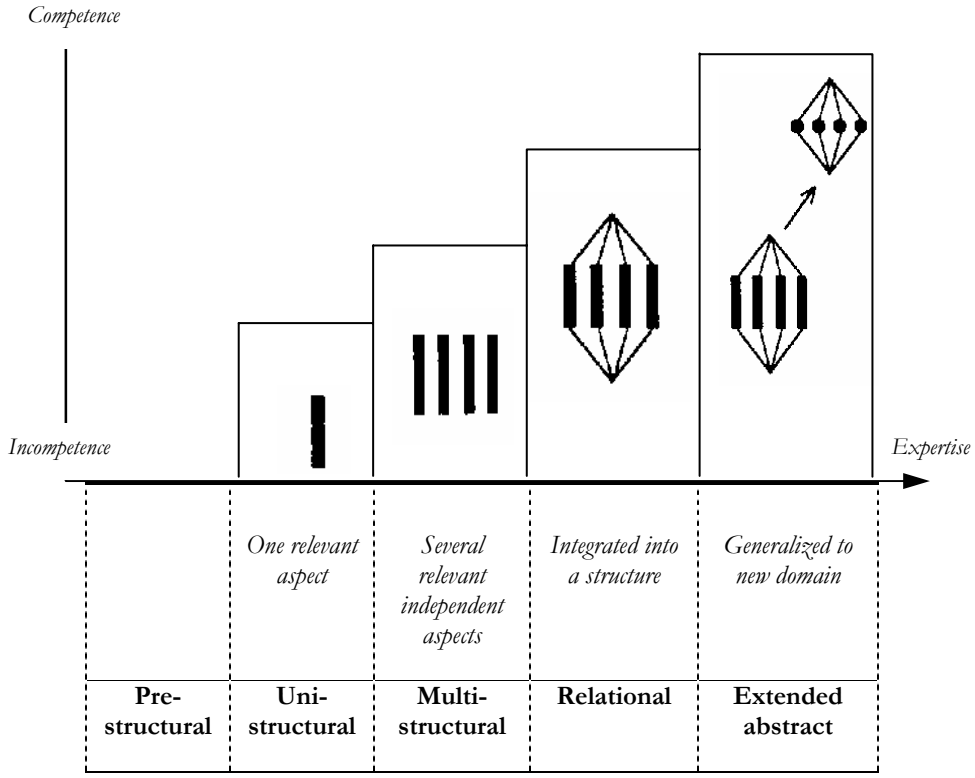
- pre-structural (irrelevant response),
- uni-structural (one or few relevant aspects to the response),
- multi-structural (several relevant aspects to the response),
- relational (most relevant aspects integrated to give a structural unity to the response), and
- extended abstract (a structural unity obtained by reference to high level principles).

This sequence of levels of learning can be used as an assessment device in the standards model, where it creates positive backwash to students and teachers.

The SOLO Taxonomy (Fig. 14) can be used in assessment to categorize students' open-ended responses to an essay question, or to order sub-items in an objective test format. In the first case, the marker has to recognize the ***SOLO*** structure inherent in a particular response, and then use that structure in determining a grade. The five letter grades 'A', 'B', 'C', 'D'. and 'F' can be used to correspond generally to the five ***SOLO*** categories.

(As a refinement, a subscale could be used within categories to show how well a particular response meets that category.) A student's grade of 'B' or 'C' tells a student quite clearly how good the response is, and by implication what still needs doing to improve it. The objective test format of ordered outcomes is more difficult to construct, but easier to use in practice. Both systems are based on qualitative assumptions, and thus are likely to have positive backwash effects on learning and teaching (Biggs, 1996).

Figure 14: SOLO Taxonomy



Adapted from "Assessment of Learning – SOLO TAXONOMY" by John Biggs and David Watkins Eds. 1995. *Classroom Learning*. Published by Prentice Hall, p.176.

The different levels of the ***SOLO*** structure (Biggs, 1996) are:

1. ***Pre-structural*** the task is not completed appropriately and there is little understanding. The student goes about the task in a very simplistic distracted or misled way from previous knowledge.
2. ***Uni-structural*** first one and then several aspects of the task are picked up but there is little attempt to bring them together. They are treated as separate items. Basically picks up one relevant aspect.
3. ***Multi-structural*** several aspects of the task are picked up but there is little attempt to bring them together. They are treated as separate items.
4. ***Relational*** the different aspects of the task are brought together into one global concept and there is a fair understanding. An adequate understanding of the topic.
5. ***Extended Abstract*** the understanding of the global whole is used in formulating new understandings under different conditions or new topic area.

An Example of the use of the SOLO Taxonomy

Toothpicks are used to make the above patterns.
Four are used to make one box, seven to make two boxes, etc.

Unistructural	(a) How many toothpicks are used to make three boxes?
Multistructural	(b) How many more toothpicks are used to make 5 boxes than used to make 3 boxes?
Relational	(c) How many boxes can be made with 31 toothpicks?
Extended abstract	(d) If I have made y boxes, how many toothpicks have I used?

Adapted from "Assessment of Learning - SOLO TAXONOMY" by John Biggs and David Watkins Eds. 1995. *Classroom Learning*. Published by Prentice Hall. p176.

Issues of validity, reliability and adequacy of evidence selected to support attainment of competencies must be discussed at the outset of the course. The student needs to select evidence that is valid or is supportive of the reflective statement. The evidence should also be reliable; that is, if another lecturer is to assess the portfolio then a similar evaluation should be made. Finally, there should be adequate evidence to support the student's reflective statement. An intended outcome of teacher development is reflective practice. Therefore the selection process needs to be conducted by student teachers so that they will develop the important skills of self-reflection and self-assessment (Biggs, 1996).

Using this information, one can give feedback on a student's performance either in the form of a narrative report or a grade. There are several different ways to record the results of performance based assessments (Airasian, 1991; Stiggins, 1994):

- *Checklist Approach* When using this, one has to indicate whether or not certain elements are present in the performances.
- *Narrative / Anecdotal Approach* When teachers use this, they will write narrative reports of what was done during each of the performances. From these reports, teachers can determine how well their students met their standards.
- *Rating Scale Approach* When teachers use this, they indicate to what degree the standards were met. Usually, teachers will use a numerical scale. For instance, one teacher may rate each criterion on a scale of one to five with one meaning "skill barely present" and five meaning "skill extremely well executed" (such as the SOLO Taxonomy).
- *Memory Approach* When teachers use this, they observe the students performing the tasks without taking any notes. They use the information from their memory to determine whether or not the students were successful. (Please note that this approach is not recommended).
- *Self-assessment / evaluation* While it is a standard procedure for teachers to assess students' performances, teachers may wish to allow students to assess them themselves. Permitting students to do this provides them with the opportunity to reflect upon the quality of their work and learn from their successes and failures (Darling-Hammond *et al,* 1995).

Implementation
Once all the decisions are made by the IT, then the implementation process begins. The teacher will teach and the student will learn.

Formative assessment
Over the course of the class or module there should be regular teacher student discussions as part of the formative assessment. Then when the teacher is at the end of the module or courses the teacher and the student have a clearer picture of what needs to be in the portfolio and the learning progress the student has made.

Summative assessment
The portfolio is finally submitted at the designated date for summative assessment.

The actual expert application of the grade descriptors will take time to develop – it is developmental like the Portfolio Assessment process. It is important for the teacher to cross mark and learn from one another. After several portfolio cycles the teacher will find that marking portfolios become as easy as designing examinations and tests that accurately represent the learning required for the student. And at the end of the process the teacher and the student have learned far more than the examination / test process.

EVALUATING THE PROCESS

Once there has been one cycle of portfolio assessment the Instructional Team (IT) and, perhaps if appropriate, the students and parents can be involved since all 5-steps of the process need to be reviewed and evaluated for continual improvement. Each step needs to be assessed to see if it achieved the purpose as intended. If not, modifications can be considered to achieve the intended purpose. As research continues to be done on the nature of student learning, and as the teachers themselves continue to learn more about the process of portfolio assessment, this method of assessment will always be dynamic.

ISSUES FOR SUCCESSFUL IMPLEMENTATION OF PORTFOLIO ASSESSMENT

Planning for Successful Implementation of Portfolio Assessment

INTRODUCTION

"Research shows that portfolios place additional demands on teachers and students as well as on … resources" (Burke, Fogarty & Belgrad, 1994, p.9). This statement highlights the need for teachers, lecturers, and students, who are using portfolios for the first time, to be aware of the demands that will be made of them. Apart from the time required to learn about the portfolio assessment approach, lecturers have indicated the time-consuming nature of providing formative feedback and the difficulty of collecting and storing portfolios. It has been described as an expensive and time-consuming assessment method (Jones, 1994; Wolf, 1991; Perkins & Gelfer, 1993). It is not reasonable to just be idealistic about the potential of success and the added value portfolio assessment has for both teacher and student. One must be aware of the systemic impact and the problems and concerns that need to be planned for from the beginning. To be as successful as possible one cannot turn a blind eye to any of the 21 issues listed below. The Education Department, school leaders, lecturers, teachers and community at large all need to be aware of the potential problems, and be ready to deal with them when planning to implement portfolio assessment. Since much research has been done in the USA on portfolio assessment, many of the issues below intertwine research from Hong Kong with that from the USA. One such project reported by Amy Brualdi in 1998 parallels many of our findings, and are included and summarized in points 9 through 20 below.

1. Time Allocation for Students

Time is needed to educate students about the processes involved in portfolio production, to teach them how to develop the portfolio and how to write the reflective statements. Without the necessary time and preparation students will write superficial and unconnected reflective statements. Students must be aware of the requirements and the need to select appropriate evidence to support any claim made. Such lead-time is vital if students are going to implement the processes of portfolio development effectively.

2. Teacher Role as Facilitator

Similarly, teachers need time and induction on their role in the facilitation of portfolio development. They should also be aware that they must provide students with time for reflection, for peer review, and for discussion. They must also provide students with a range of examples of student performance and portfolios, in order to help students develop an understanding of the standard required.

3. Pedagogical Evolution / Development

The use of portfolios for assessment impacts on pedagogy, and lecturers should adjust their teaching method accordingly. Research (Klenowski, 1997) indicates lecturers should provide numerous opportunities for students to discuss, collaborate, and practice performance prior to final assessment. Role modelling is particularly powerful in helping students understand the reflective process. Lecturers/teachers, therefore, should model reflective statements and provide opportunities for students to discuss and examine reflective statements of others.

4. Clear Portfolio Objective

A particular portfolio assessment procedure will not be valid in every situation (Gellman, 1992). It is therefore important that lecturers/teachers determine the competencies to be assessed in a particular situation, the type of evidence to be selected to demonstrate attainment, the way in which the evidence will be assessed, and who will be responsible for the assessment. To improve the reliability lecturers/teachers should ensure students respond to a standard set of tasks and that an agreed set of grade descriptors is used.

5. Change Process

Apart from the cautions related to time, validity, reliability and costs, the process of change needs to be considered. For many students and lecturers changing from a quantitative to a qualitative mode of assessment is a major paradigm shift. This process can be both difficult and painful, and is described by Engel (1994) as "adjusting to a shift in paradigms – to changes in beliefs and practices – can be difficult, even painful, because of the strength of habit and history, and the forces of inertia" (p. 22).

6. ***The assessment reform movement comprises different strategies to develop and implement, and different conceptions of, quality performance assessments***

The divergence in the paths schools and teachers have taken in developing and implementing performance assessments does not permit us to draw a 'picture' about the status of portfolio assessment reform. Schools are at different stages of development and implementation of portfolio assessments, and different levels of educational organization. The study found that they also represented their own constructions and understanding of such assessment reform.

7. ***The tasks and assignments student must conduct for portfolio assessment take a variety of forms, including on-demand, open-ended problems, extended projects, oral presentations and demonstrations (Brualdi, 1998)***

For all of its focus on performance assessment, the portfolio assessment reform movement is fragmented, since 'portfolio assessment' means different things to different people. In fact, the study indicated that the assignments or tasks student must complete ranged from on-demand, open-ended, timed problems, to long-term research projects that culminate in oral presentations and to portfolios of student work. The one feature these different types of assessment tasks have in common is the requirement that students actively construct responses to problems or prompts. This same feature distinguishes them from multiple-choice tests. Hence, any non-multiple choice task or assignment is, in assessment reform parlance, referred to as 'performance assessment'. However, not all performance tasks are based upon the principles of assessment reform (i.e. the teaching and assessing of problem-solving and critical thinking skills and multi-disciplinary understanding).

8. ***Scoring rubrics are an important component of performance assessments, as they articulate the criteria against which the quality of student work is evaluated. Clearly articulated generic scoring rubrics function as a powerful tool of assessment reform, as they embody the educational outcomes important to the educational organization. Their use in the classroom helps teachers and students to organize learning and teaching around those outcomes (Brualdi, 1998)***

Student performance on portfolio assessment tasks is generally evaluated using a scoring instrument or method. These scoring instruments or methods range from checklists of the items that must be present in student work to

generic scoring rubrics that articulate the general competency and skill outcomes that must be reflected in student work along with the criteria for judging the quality of student work. To date, assessment reform has been served most powerfully by generic rubrics. In requiring teachers to design and use assessment tasks that elicit the skills and competency outcomes articulated in the generic scoring rubrics, teachers and lecturers have communicated and promoted the educational outcomes valued.

9. ***Evidence indicates that inter-rater reliability on scoring performance assessments, such as portfolio assessment, can be improved over time with sufficient professional development opportunities. However, content validity, equity, consequential validity of performance assessments, and meaningfulness of assessment tasks to students remain to be adequately addressed and established (Brualdi, 1998)***

Even if the USA data about the technical characteristics of performance assessment systems such as portfolio assessment are generally meager, they are more likely to be available for state- and district-level systems than for school- and national-level systems. The states involved in full-scale implementation of performance assessment systems have instituted measures to investigate and ensure the content validity and inter-rater reliability of their systems. Such measures have yielded positive results. For example, in the USA, Vermont's inter-rater reliability for portfolios improved between 1992-93 and 1993-94. Systematic information with regard to the assessment systems' consequential validity is just beginning to accrue in some cases. Surveys showed that teachers have aligned their pedagogical strategies with the performance assessment systems. However, consequential validity in terms of student outcomes has not been clearly demonstrated. Generally, most districts and schools in the USA and Hong Kong had not undertaken any formal technical evaluations of their systems. In part, this finding reflected a lack of resources or, in some cases, the developmental status of the assessment system itself. In the case of some school-level systems, teachers regard their homegrown assessments to be reliable and valid for use with their own students, and they perceived no need for an independent evaluation.

10. ***Performance assessment systems that are moderately prescribed and cast a wide pedagogical net are more likely to effect intended instructional and curricular changes than those that are either loosely or tightly prescribed, or those that cast a measurement net. On the other hand, tightly prescribed assessments that cast a measurement net are more likely to be useful for accountability purposes (Brualdi, 1998)***

Research findings showed that assessment systems could be characterized along two dimensions:

- Level of prescription, which refers to the degree of judgment and control a teacher exercises in implementing the performance assessment system; and
- Scope of pedagogical net, which refers to the degree of student and teacher involvement in assessment systems, the representation of different types of assessments, and the frequency with which assessments are used in the classroom.

Data supported the position of a strong hypothesis: if assessment systems are moderately prescribed – that is, if they provide a structure for implementation within a coherent educational framework, and involve teachers in developing and implementing the assessments – the purpose of informing and influencing instruction is more likely to be achieved, at least in the short run.

The findings also indicated that performance assessment systems that cast wide pedagogical nets – that involve teachers and students on an ongoing basis and utilize different types of performance assessments – are also more likely to achieve the purpose of informing and influencing instruction. Because such systems invite teacher involvement and engagement, teachers are more likely to 'appropriate' the assessments, work with them, and integrate them into the classroom. On the other hand, systems that cast narrow pedagogical nets tend not to spark change in classroom instructional practices, again, at least not in the short run. **That is, systems that are meant for accountability purposes tend not to affect classroom pedagogy as quickly because these systems invite minimal teacher involvement as task specification, administration procedures, and scoring conditions are quite highly standardized.**

11. Assessment reformers identify five purposes performance assessment systems are intended to serve. Most systems are intended to serve multiple purposes. The most frequently cited purposes are to influence instruction and curriculum, and to monitor student performance. However, in some cases, failure to recognize points of conflict between the different purposes hampers assessment reform, at least in the short run (Brualdi, 1998)

The five purposes of performance assessment systems are:

- To influence and inform instruction and curriculum in the direction of teaching problem-solving, critical thinking, and good writing skills;
- To monitor student progress;
- To improve alignment among curriculum, instruction, and assessment;
- To hold schools accountable for student achievement; and
- To certify student achievement.

Most assessment reformers involved with performance assessment systems such as portfolio assessment included in the USA study identified multiple purposes of their assessments. However, they did not typically prioritize among purposes. Moreover, various purposes are not necessarily compatible with each other (at least not in all combinations), and emphasis upon one purpose can sometimes result in an abandonment, or neglect, of another. In short, one performance assessment may not be able to serve all purposes equally well.

Perhaps the most important potential point of conflict between assessment purposes emerges when an assessment is intended both to hold schools accountable for students' performance, and to improve instructional practices in the classroom. When held accountable for student performance on an assessment, teachers will teach to the test. When teaching to the test means that students are learning the valued skills, there will not necessarily be a conflict among purposes. However, the depth of the impact on teaching practices will depend upon how well teachers understand the pedagogical bases of the assessment, and upon their own repertoire of instructional practices. Teachers may teach to the test during a finite period of the school year but may not necessarily modify regular practices, and they may not change their pedagogy.

12. The Department of Education faces numerous obstacles when introducing portfolio assessments. These obstacles include developing a technically sound system; coordinating assessment reform with other elements of education reform; communicating effectively with teachers about the purposes and value of the assessment; and selling the assessment to the public (Brualdi, 1998)

Departments of Education in the process of introducing performance assessments are undertaking extremely complex endeavors, especially the current learning to learn reform movement in Hong Kong. Assessments have both political and pedagogical ramifications and, thus, must pass the muster of two different sets of criteria.

Coordination among elements of education reform – most particularly coordination among assessment reform, curriculum revisions, and the development of content and performance standards – will most likely be crucial to the long-term success of assessment reform. Furthermore, this coordination is equally important from political and pedagogical perspectives. Teachers who are unaware of the connections among reforms – either because such connections are unclear or because they have not been made – are left in a quandary about how much time and effort they should invest in an evolving system.

13. Innovative models of professional development and support are beginning to yield results in terms of building teachers' capacity to work with portfolio assessment techniques (Brualdi, 1998)

Some schools are attempting to shift the focus of professional development from communication of facts to capacity building. In Hong Kong this is evident in the school-based management and curriculum development. In the USA, Kentucky and Vermont, in particular, have expanded the traditional train-the trainer model to vest more responsibility in individuals at the school level. They have also involved all teachers of the assessed grades in scoring activities, providing training for teachers on how to apply scoring rubrics to student work. These efforts seemed to have paid off in Kentucky and Vermont, as teachers are becoming increasingly comfortable with both states' portfolio assessments.

National-level reform efforts in the USA, such as the New Standards Project, the Coalition of Essential Schools, and the College Board's Pacesetter Program, offer professional development opportunities unlike those typically supported by states and districts. However, the value of these conferences

and workshops eventually will be measured in the classroom, where teachers must apply what they have learned to the real world of teaching and learning. Teachers participating in a study who have attended the conferences put on by these organizations have confirmed their value, but also suggested that what they have learned at the conferences must be modified to their own particular classrooms, schools, and districts.

In short, professional development and support activities, specifically those that focuses on expanding teachers' capacity to work with performance based assessment like portfolio assessment techniques, are crucial to realizing the purposes of assessment reform. Professional development and support is a necessary, but not sufficient, factor in the success of the reform.

14. Several types of resources, monetary and non-monetary, are required for developing and implementing portfolio assessments systems (Brualdi, 1998)

Data indicated that developing and implementing performance assessments is a costly venture. It requires different types of resources, not all of which are accounted for in monetary terms.

Aside from money spent on the actual development and implementation of performance assessments, assessment reform activities require financial investments including gathering and utilizing information about assessment development, organizing and delivering professional development sessions, and disseminating information about assessments to teachers, parents, schools and others. Other cost categories include library resources and storage space for assessment products such as portfolios.

The costs that are frequently not taken into consideration at any level of educational organization are teacher time in developing, administering, and scoring assessments, and student time in completing the assessments. Teachers often mentioned that the time they invested in implementing a performance assessment system over the school year or the time they spent preparing their students for a year-end assessment resulted in their having to curtail the coverage of some content areas. On the other hand, the benefits teachers saw with portfolio assessment was about having to do in-depth teaching, which resulted to enhanced student achievement in some areas.

15. ***The primary impetus behind the portfolio assessment movement – the goal of improving teaching and learning in the classroom – is best served when teachers are provided with sufficient opportunity and resources to 'appropriate' the assessment technique. Teachers must use (in original or modified form) and value the assessment if they are going to shape classroom practice to reflect it (Brualdi, 1998)***

It is self-evident that teachers are more likely to use in the classroom portfolio assessment tools they developed themselves. Teachers who worked with moderately prescribed assessments – assessments that allow them to exercise discretion over particular aspects of the assessment within an established structure – have reacted more favorably to external assessments than their counterparts working with assessments that do not allow that discretion. Teachers who are involved in scoring student assessments are also typically more positive about the assessments. These findings illuminate the importance of giving teachers opportunities to grapple with the issues involved in assessing student performance.

16. ***When teachers have appropriated portfolio assessments, they are asking their students to write and complete research-based assignments more often than before, but the quality of this pedagogical shift is unclear (Brualdi, 1998)***

In several USA schools implementing performance assessment systems comprising portfolios, long-term research projects, or exhibitions of student work, teachers say they are asking students to write more, and to conduct more research-based assignments than they did in the past. Such an instructional shift is driven by the requirements of the assessments in two ways: teachers must design and assign tasks that enable students to demonstrate their writing capabilities or research and presentation skills. Or, teachers assign activities throughout the year that help their students develop skills a demonstration assessment might tap.

However, two related findings point to why it is difficult to judge the quality of this pedagogical shift. Firstly, teachers are still learning how to incorporate performance assessments into their classrooms. They themselves find it difficult to evaluate any relationship between the pedagogical change and students' learning. The second reason rests in unclear, unarticulated, or variable standards for performance. In the cases of several assessment systems, the content and performance standards associated with the systems are unclear at the local level. Therefore, teachers are making a pedagogical

shift, but they are uncertain to what end. In contrast, in the cases of many school-level assessment systems or schools participating in national systems, teachers frequently individualize performance requirements for their students, making it similarly difficult to evaluate the extent to which the performance assessment system is challenging all students in meeting equally high standards.

17. Both teachers and students report that students are more motivated to learn through research projects and other performance based assignments than they are with other types of assignments, a finding that supports one of the assumptions underlying assessment reform (Brualdi, 1998)

Both teachers and students noted that students are more motivated to learn with performance-based tasks and writing assignments than with textbook-generated homework exercises. This effect is due, they say, to the sustained effort and attention students must invest in conducting research and writing projects, and in defining some of the parameters of their own work. Teachers also believe that, as a result of investing in projects that require research and writing, students are developing good writing and thinking skills. However, clear, independent evidence to prove that this is the case is not yet available.

18. Teachers have transformed scoring rubrics into pedagogical tools, using them for setting students' performance expectations. The power of this transformation has depended upon how well the rubrics are constructed (Brualdi, 1998)

That performance assessments could fundamentally transform teaching and learning is most clearly demonstrated through the use of scoring rubrics. Teachers are using scoring rubrics as 'scaffolding' to set performance standards for their students, gradually building student performance to higher levels of proficiency. In addition, teachers share scoring rubrics with their students to communicate the criteria they use in judging the quality of students' performances.

Teachers note that sharing scoring rubrics with their students has a positive effect on their understanding of the purposes of their assignments. Because of this better understanding, students are better able to become participants in the assessment process itself. Teachers also note that students internalize what they learn, and then develop a common framework for evaluating their own or their peers' work. However, how well a scoring rubric serves to enhance student learning and understanding depends upon how well it is

constructed. Some rubrics teachers shared with their students were simply checklists, while others were more elaborate (and still others were developed specifically for student use). Although the former type of 'rubric' has proven useful (according to teachers and students who use them), it is the latter type that seems to have a clear effect on students' understanding of what is expected of them.

19. The use of performance assessments with students with disabilities (Brualdi, 1998)

The appropriate inclusion of students with disabilities in performance assessment systems and the appropriate accommodation that should be made to support their participation remain controversial and unclear. On the one hand, one justification underlying the movement toward performance assessment – to provide a forum in which students can demonstrate what they know and can do – is compatible with the goals and methods of serving students through individualized educational programs. On the other hand, the format and the time and skill demands of some performance assessments pose problems for the participation of students and disabilities in the assessment system.

Students with disabilities experienced academic success and enhanced learning by conducting the research and writing assignments that comprises the performance assessments. However, these students often have difficulty completing such assignments. On-demand performance tasks might pose the most problem for these students. Because these tasks tend to have time restrictions for completion, and because they may require higher levels of language arts skills than most multiple-choice tests require, students with disabilities may experience a sense of frustration and failure during the assessment process.

20. Although the objective of all portfolio assessment systems is to assess students against clearly established standards, in some cases the standards are not clear. This lack of clarity impedes teachers' ability to integrate assessments into instruction (Brualdi, 1998)

The lack of clearly defined content and performance standards can impede teachers' ability to use the assessment in the classroom. Teachers who make the effort to incorporate assessments into the classroom, despite unclear content and performance standards, are sometimes unsure of the quality of their instructional changes as well as of the pedagogical utility of the assessment. Indeed, most teachers who find themselves working on

assessments with unclear standards simply refrain from investing much time and energy into integrating the assessments with their current teaching practices. A significant barrier to education (not just assessment) reform is weak articulation between assessed reform and complementary reforms (particularly the development of content and performance standards), which can severely compromise teachers' commitment to and investment in the reform process.

21. Gender makes a difference

Another interesting finding from a review of the literature has been the fact that not only does it takes time, but that there were also gender differences in the use of portfolios. Black (1994) pointed out gender differences in writing portfolios. When the use of portfolio assessment was implemented in teacher training institutions where most students were typically female, the issue of different writing styles due to gender was considered part of the understanding as well as the repertoire used with the students (p. 235).

Apart from the gender difference, the criteria to be used in the portfolio assessment should also be shared with the students at the outset of the course. The criteria should be easily communicated and should be fair. Gender and ethnic bias should be considered in the development of the criteria, so that no student will be disadvantaged.

SUGGESTIONS FOR FUTURE

Suggestions for Future

INTRODUCTION

This instructional guide has attempted to present a full picture of the benefits and obstacles to overcome for the successful implementation of portfolio assessment in the classroom. The process and the product are both critical aspects.

Education leaders must plan and implement staff development programs for administrators and teachers. Some consideration must also be given to educating the parents and the community to gain their understanding and support. Students need to be given proper guidelines and explanations of both the processes and the product of portfolio assessment. Teams of educators need to be involved to ensure that the possible obstacles are reduced and / or eliminated, if possible. For it is a team that will be able to see far better than just a few individuals.

The journey to successful implementation has just begun. There needs to be continual improvement to what is already happening now and in the future. It is a life long enterprise for all involved, as portfolios are about documenting the learning. It is a team effort for educators as well as the community.

The research in Hong Kong has only begun its journey. As schools, especially in Hong Kong, begin to implement more authentic assessment strategies such as portfolio, it is critical that there should be some research studies conducted to evaluate all the aspects pointed out in this instructional guide. Research needs to be conducted from the policy level, from the school level, from the teacher level, from the student level, and from the parent and community level. Research also needs to be done on the quality and types of staff development and training required by and provided to administrators, teachers, students and parents. Further research needs to be conducted on the implementation process in the classrooms as well. It is only in understanding what is happening that one can plan for continual improvement of both the process and the product of portfolio assessment.

<u>The author team wishes you success on this journey!</u>

And feel Free to contact us if we can be of further service.

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GLOSSARY

Glossary

Assessment: - The process of collecting data for the purpose of (1) specifying and verifying problems and (2) making decisions about students.

Assessment: - a systematic approach for collecting information on student learning or performance, usually based on various sources of evidence.

Alternative assessment. - approaches for finding out what students know or can do other than through the use of multiple-choice testing, short answer or selected response type questions.

Anecdotal records: informal written notes on student earning products or processes, usually jotted down from direct observation.

Authentic assessment:- procedures for evaluating student achievement or performance using activities that represent classroom goals, curricula, and instruction or real-life performance.

Constructed response item: - a type of assessment in which students read or review text materials and then respond to open-ended questions that elicit comprehension and higher-order thinking.

Content area: - subject matter course or curriculum, such as mathematics, science, history, etc.

Content standards: - the declarative and procedural knowledge specific to a given content domain.

Core entries: - required samples of student work or teacher observations entered in a portfolio.

Criteria: - guidelines, rules, or principles by which student responses, products, or performances are judged.

Criteria charts: - characteristics of exemplary work related to a specific classroom task or activity.

Criterion-referenced tests: - Tests that measure a person's kowledges, skills and abilities in terms of absolute level of mastery.

Critical thinking: - using higher-order mental processes, such as analysing arguments carefully, seeing alternative points of view, evaluating alternatives, and reaching sound conclusions.

Curriculum: - The skills, performances, attitudes, and values that students are expected to learn from schooling; includes statements of educational objectives, descriptions of materials, and the sequence that will be used to help students attain the outcomes.

Curriculum-based assessment: - Use of assessment materials and procedures that mirror instruction in order to ascertain whether specific instructional objectives have been accomplished and to monitor progress directly in the curriculum being taught.

Curriculum validity: - the level of correspondence between assessments and the curriculum presented to students.

Declarative knowledge: - the type of knowledge that indicates *what* a student knows, as illustrated by memory of facts, names, dates, or knowledge *about* procedures.

Dialogue journal- a type of writing, in which students make entries in a notebook **on** topics of their choice, to which the teacher responds, modeling effective language but not overtly correcting the student's language.

Elaboration: adding detailed explanations, examples, or other relevant information to the discussion or item.

Evaluation - interpretation of assessment data regarding the quality, value, or worth of some response product, or performance. Evaluations are usually, based on multiple sources of information.

Formative assessment: - The process of collecting, synthesizing, and interpreting information for the purpose of improving learning or teaching while they are still going on; assessment for improvement, not grading.

Generalisability: - the extent to which the performances sampled by a set of assessment items and/or tasks are representative of the broader domain being assessed.

Grade-level classrooms: - classrooms designed for specific levels of students and based on their needs or standards.

Higher-order thinking skills - relatively complex cognitive operations such as concept formation, analysis, and problem solving that commonly employs one or more skills.

Informal assessment: - any assessment that involves collection of data by anything other than a norm-referenced test.

Integrated assessment: - assessment of language and content at the same time (e.g., assessment of an oral report on a science project).

Inter-rater reliability: - the level of agreement attained between independent raters of student performance. Often expressed as percentage of agreement or as the correlation between the scores of raters on the same group of students.

Learning log: - a form of self-assessment in which students write journal entries summarising what they have learned or commenting on the successful strategies they used that were in aiding their learning.

Learning strategies: - thoughts or behaviors students use that assist comprehension, learning of new material, or language production.

Metacognition: - self-appraisal and self-regulation processes used in learning, thinking, reasoning, and problem solving.

Norm-referenced tests - tests that compare and individual's performance to the performance of a peer group or norm group.

Outcome: - a goal statement specifying desired knowledge, skills, processes, and attitudes to be developed as a result of educational experiences.

Peer assessment: - assessment of a student's work, products, or learning processes by classmates. Also called *Peer evaluation.*

Performance assessment: - assessment tasks that require students to construct a response, create a product, or demonstrate applications of knowledge.

Performance standard: - the level of performance required on specific activities represented in content standards.

Portfolio: - a collection of products of student work showing student reflection and progress or achievement over time in one or more areas. Providing a basis for judging student accomplishment.

Portfolio assessment: - a selective collection of student work, teacher observations, and self-assessment that is used to show progress over time with regard to specific criteria.

Portfolio conference: - a meeting between a teacher and a student to discuss setting and refining goals with respect to student progress.

Project: - an activity in which students prepare a product to show what they know and can do.

Rubric: - a measurement scale used to evaluate a student's performance. Rubrics consist of a scale and a list of characteristics that describe criteria at each score point for a particular outcome.

Running record: - a form of analysis in which teachers record in detail what students do as they read aloud, such as repetitions, substitutions, insertions, hesitations, omissions, and self-corrections.

Scaffolding: providing contextual supports for meaning during instruction or assessment, such as visual displays, classified lists, or tables or graphs.

Schemata: the structural organization in which knowledge is stored in memory, including background knowledge and cultural meanings.

Self-assessment: - appraisal by a student of his or her own work or learning processes.

Showcase portfolio: - a collection of a student's best work, often selected by the student, that highlights what the student is able to do.

Standard: - an established level of achievement, quality of performance, or degree of proficiency

Standardization: - a set of consistent procedures for constructing, administering, and scoring an assessment that ensures all students are assessed under uniform conditions.

Summative assessment: - culminate assessment for a unit, grade level, or course of study providing a status report on mastery or degree of proficiency according to identified learning outcomes.

Task: - an activity usually requiring multiple responses to a challenging question or problem.

Test: - a set of questions or situations designed to permit an inference about what a student knows or can do in an area.

Validity: - refers to whether or not an assessment is an adequate measure of the curriculum and the objectives it represents.