

Effective Foreign Language Portfolios in Engineering Education

SUZANA CARMEN CISMAS

Department of Modern Languages and Communication
The Polytechnic University of Bucharest
313 Splaiul Independentei, sector 6, 060042, Bucharest
ROMANIA
suzanacismas@yahoo.com

Abstract: - Critical to any form of assessment is accountability. In the educational arena for example, teachers are accountable to themselves, to their students and the families, to schools and society. Portfolios constitute an evaluation practice increasingly implemented both in instruction and in employment procedures. The process of selecting evidence for inclusion in portfolios involves ongoing dialogue and feedback between participants and service providers. Portfolio assessment of the program or participants provides a means of conducting evaluation throughout the life of that program, addressing the evolving needs and assets of the participants and of the community involved, helping to maintain focus on program outcomes and on the steps required to meet them. Well-designed portfolios represent important, contextualized learning that requires complex thinking and communication skills. Traditional tests have been criticized as being insensitive to local curriculum and instruction, and assessing not only student achievement but aptitude. Portfolios are being heralded as vehicles that provide a more equitable and sensitive portrait of what students know and are able to do. This modern method encourages teachers and schools to focus on important student outcomes, provide parents and the community with credible evidence of student achievement, and inform policy and practice at every level of the educational system.

Key-Words: - portfolio assessment, scoring criteria, e-portfolios, professors' portfolios, English in engineering

1. Introduction

Why have professional evolution portfolios? Employers ask staff and potential candidates to display consistent proof of their relevant activity over time to demonstrate growth as professionals. Both students and employees assemble portfolios so as to showcase personal work and demonstrate directions and rhythms in developing individual proficiency and creativity in time. The purpose is to secure work, commissions, exhibitions, better status and finances, via documenting both evolution and adjustment to modern requirements in the field.

Portfolios may be used in applying for jobs, or as part of a formal university evaluation process, but implementing them also has intrinsic benefits:

- Securing a plan for development
- Facilitating reflective practice
- Providing a framework for lifelong learning
- Enhancing teaching
- Positive impact on learners
- Maintaining motivation
- Designing a system for recording/documenting key points in personal work
- Giving a platform for exploring teaching
- Developing foreign language skills
- Identifying sources of further support
- Creating a basis for review

Although models of portfolio assessment differ, it is common practice that students' work and their reflections should be assembled as evidence of growth and achievement, in view of producing richer and more valid assessments of competence than those possible in traditional testing.

However, little is known regarding the capacity of portfolio assessments to support judgments that are valid for large-scale assessment purposes. Most published articles on this topic were not research-based, but conceptual or anecdotal.

A portfolio is, on the one hand, a theoretical act, a reflective tool, and a credential, but, on the other hand, it is also a way of conceptualizing practice, acting as a repository for teacher knowledge.

Three metaphors are generally used for conveying the meaning of portfolios: mirror, map and sonnet, capturing the reflective nature of the portfolio (mirror), a tool for planning (the map), within a structure (the sonnet).

Portfolios are recognized as tools for teachers to think reflectively about their practice. Teaching portfolios are more and more being assigned an assessment role, to demonstrate achievement of professional standards. Such standards aim at observing quality at all levels.

Portfolios can exist in their traditional paper-based form or in electronic format, with the advantage of being more accessible (presentation, storage, selection of pieces). The introduction of a new tool into human activity often changes that activity in unanticipated and profound ways. Professors, students, administrators, assessors, all show that a carefully rendered portfolio becomes an increasingly internalized standard against which learners check their own growth. Howard Gardner's theory of multiple intelligences suggests that culture, language, and environment influence how individual intelligence is expressed, and portfolio assessment can enable technical university educators to move from traditional testing methods to more authentic assessment that reflects each student's real progress. In addition to portfolios being a method to evaluate achievement of learning goals, this assessment also applies to other contexts such as including admission to universities, admission to teacher education programs, student teaching, job interviews, and in-service teacher evaluations.

1.1 Definition and key traits

A portfolio is a purposeful collection of student work that exhibits the learner's efforts, progress, and achievements in specific areas of the curriculum. The collection must include:

- Student participation in selecting contents.
- Criteria for selection.
- Criteria for judging merits.
- Evidence of student's self-reflection.

It unites and displays the learner's best efforts/ accomplishments, student-selected samples of work experiences related to the outcomes being assessed, and documents reflecting growth and development over time toward mastering identified goals.

The contents may depend on student or teacher preferences (within the range of the given subject and theme), on the didactic purposes of that specific portfolio and on the instructional goals it is designed to reflect.

Portfolios offer an ideal context for monitoring students' direct experience. They can record both final products and students' ongoing thinking reflections and decision-making processes while engaged in such tasks.

There are multiple reasons for using portfolios: monitor engineering students' mastery of a core curriculum; enhance the assessment process by revealing a key range of skills; reflect change and growth over a period of time; encourage student, teacher, and community reflection; and provide for continuity in education from one year to the next.

Professors use them for specific purposes:

- Stimulating self-directed learning.
- Enlarging the view on what is learned.
- Fostering learning about learning.
- Demonstrating progress toward identified targets.
- Uniting instruction and assessment.
- Students valuing themselves as learners.
- Offering opportunities for peer-supported growth.

Approaches to portfolio development may vary, but the focus is upon students' performance-based learning experiences, as well as upon acquisition of key knowledge, skills, and attitudes. Samples cover an entire marking period and address different assessment tools. They include evaluations by the student, peers, teachers, and the community.

Portfolios are necessary in the broader context of enriching and diversifying evaluation methods. Examination grades provide only a limited picture of students' academic abilities. An increasing number of employers have suggested that they prefer to have guarantees of applicants' competence in basic skills, and also information on those personal attributes pertinent to employment, such as perseverance, initiative, and the ability to relate to other people. Examination results do not provide such information and the ad hoc nature of references and testimonials is unlikely to produce consistency in point of content or judgement.

Portfolio assessment is a multi-faceted process characterized by the following recurrent qualities:

- Continuous and ongoing, both formative and summative in monitoring students' advance to target.
- Multi-dimensional, with a wide variety of samples documenting aspects of students' learning process.
- Leading to collaborative reflection, (students first reflect on their own thinking process, then meta-cognitive introspection occurs as they monitor their own comprehension, reflect upon their approaches to problem-solving and decision-making, and observe their emerging understanding of subjects and skills).

2 Problem Formulation

The opportunity for more extensive recording of intellectual and cognitive qualities can be enlarged by using portfolios; therefore, university level activities in English teaching in engineering should promote valuable personal and intellectual qualities, such as curiosity, the ability to express views orally and the capacity to work either in teams or independently.

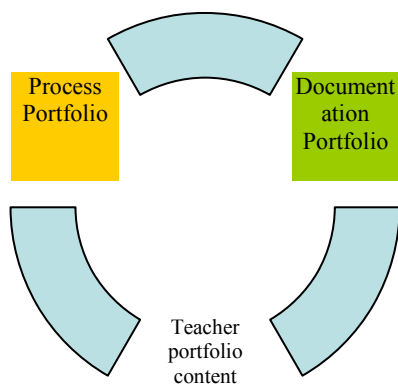
Thus, students whose achievements tend to be ignored or go unnoticed at present are likely to be more motivated by an educational process and system of recording which allows their individual

strengths to be recognised. This group traditionally contains learners who are disenchanted by the schooling process; such students form the bulk of early university leavers. Schools in general seem to have failed to provide them with a suitable curriculum which they could perceive as relevant to their anticipated needs. They leave the university without getting the degree, and, not unreasonably, feel that it diminishes their achievements both in their own eyes and in those of potential employers.

Evaluating students by means of portfolios seems to be an appropriate, feasible and effective answer to the requirements imposed on education by modern times, by the scientific and technological progress and by the current employment market.

2.1 Types of portfolios

There are different types of portfolios, each serving one or more specific purposes as part of an overall university or faculty assessment program.



- The *Documentation Portfolio* is also known as the working portfolio. It can include everything from brainstorming, to drafts, to finished products. It may also include the weakest pieces of student work. The collection becomes meaningful when specific items clarify particular educational experiences or goals. It contains the whole work of a learner who thus shows how he deals with daily class assignments. It has the advantage of containing both the process and the product over the year, but the disadvantage of not being carefully planned and organised to meet certain didactical purposes.

- The *Process Portfolio* documents all facets or phases of the learning process. It can show how students integrate specific knowledge or skills and progress towards both basic and advanced mastery. Additionally, the process portfolio emphasizes students' reflection upon their learning process, including the use of reflective journals, thinking logs, and related forms of meta-cognitive processing.

These assessment portfolios are focused reflections regarding some specific learning goals. The contents are often selected to show improvement over time. Each entry has to be chosen with both teacher and student input and it is evaluated according to criteria also specified by them both, in cooperation. Whereas the portfolio itself does not receive a grade or a rating, the different entries may be weighed to reflect an overall level of student achievement.

- The *Showcase Portfolio* is valuable in summative evaluation of students' mastery of key curriculum outcomes. It should include students' very best work, determined through a combination of student and teacher selection. It consists of completed work only, and it is meant to display best achievements to professors, administrators, employers, and to the whole community. In addition, this type of portfolio is most compatible with audio-visual artifacts, including photographs, videotapes, and electronic records of students' completed work. The showcase portfolio should also include written analysis and reflections by the student upon the decision-making process used to determine the works included. It points to the achievements but leaves out the path by which the students managed to create them.

2.2 Phases in developing a portfolio



1. *Organization and Planning* - This initial phase entails decision-making on the part of students and professors. By exploring key issues at the beginning of the process, students can fully understand the purpose of the portfolio and its status as a means of monitoring and evaluating progress. Essential steps for both the teacher and the student:

- Selection of times and materials to reflect learning

- Organization and display of collected materials
 - Maintenance and storage of portfolios
2. *Collection*- It involves gathering meaningful products reflecting educational experiences and goals, and making decisions on context and contents, all based on identified purposes, on evaluation criteria and on standards. Selection and collection of products should be based on various factors, such as:
- Particular subject matter
 - Type of learning process
 - Special projects, themes, and/or units.
3. *Reflection* - Wherever possible, there should be evidence of students' meta-cognitive reflections on the learning process and their monitoring of their evolving comprehension of key knowledge and skills, in the form of learning logs/reflective diaries, which focus on their experiences, on the thinking processes they have used, and on the habits of mind they employed at given points in time. In addition, teacher and/or potential employer reflections upon the products, processes, and thinking articulated in the portfolio should also be included, if appropriate. Without self-assessment and reflection on the part of the student, a portfolio is not a portfolio. That is, a portfolio is not just another assessment measure imposed on a student by a teacher. A portfolio is a unique opportunity for learners to monitor their own progress and take responsibility for meeting goals set jointly with the teacher. Thus, learners are more aware of their achievement, have broader views on what is being studied, become accustomed to seeing learning as a process, and acquire a developmental perspective on their efforts.

Three are the most popular and effective ways in which self assessment is performed: *documentation*, *comparison* and *integration*. In *documentation* the student provides a justification for the items selected in the portfolio. In *comparison* students compare a recent piece of work to an earlier one by looking for modalities of improvement. In *integration* students address their own learning in a more general way: they use the portfolio to provide examples of their growing strengths in oral or written language, or their independence as learners. All these forms of self-evaluation are important for English language engineering students as they master new skills.

2.3 Criteria for relevant portfolios

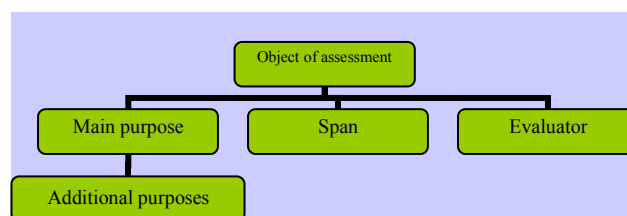
Portfolio assessments, unlike traditional methods, provide professors and students with an opportunity to observe learners in a broader context: taking risks, developing creative solutions, sharing ideas, judging personal performances, setting personal targets, and outlining future research.

It is especially important for both parties to work together for prioritizing the criteria to be used as a basis in evaluating learning progress. For effective assessment occur, there must be multiple scoring strategies. Criteria for a relevant portfolio:

- Thoughtfulness (evidence of students' monitoring their own comprehension, meta-cognitive reflection, and productive habits of mind).
- Growth and development in relationship to key curriculum indicators.
- Understanding and application of key processes.
- Completeness and correctness of the appropriate products / processes presented in the portfolio.
- Diversity of entries (use of multiple formats to demonstrate achievement of designated standards).

Over the year, students and professors can cooperate in identifying significant items to be captured in the portfolio, and in determining the grades or scores to be assigned. Rubrics, rules, and scoring keys can be designed for a variety of portfolio components. Finally, some forms of oral discussion or investigation should be included as part of the summative evaluation process. This component involves the student, the teacher, and if possible, a panel of reviewers in a thoughtful exploration of portfolio components, students' decision-making and evaluation processes.

2.4 Portfolio Planning Checklist



1. Who or what is being evaluated?
 - Student
 - Teacher
 - Curriculum/program
 - School
2. What is the purpose of the evaluation?
 - Display best work and current performance
 - Display growth over time
 - Determine if learning goals have been met
 - Determine quality of instruction
3. What are additional purposes?
 - Improved attitude toward school work
 - Learn to evaluate own performance
 - Increase critical thinking skills by developing evaluative criteria and using it to select the work to be included

- Improve instruction
 - To enjoy the academic area
 - Improve / demonstrate mastery of specific academic skills
(List which ones) _____
 - To Learn Processes
 - The writing process
 - Steps for attacking complex problems
 - The scientific method
 - How to write a research paper
4. What is the breadth of work to be covered?
- Number of school years
 - Number of subjects
(List which ones) _____
5. Who is responsible for evaluating portfolios?
- Students' classroom teacher
 - Another classroom teacher
 - In school panel
 - State appointed individuals
 - Other

2.5 Portfolios versus Test Essays

Now that the need for large-scale writing assessment is well received worldwide, engineering education has mandated outcomes assessment across all disciplines. Key goals of writing assessments are to implement specialized programs which actually help students compose better, and to measure the specific development throughout university years.

However, over the last few years there has been growing dissatisfaction in the profession with the single-test essay. Since it fails to account for the revision component of the writing process, portfolio assessment has become an attractive alternative. Briefly, in portfolios, essays written over a given period are collected and then evaluated.

The great advantage of the portfolio approach is that it emphasizes writing that occurs over time (the process), not simply the product. It can track the evolution of one piece of writing over the course of its development or, more likely, a variety of rhetorical tasks collected at intervals.

It can also become an option available to those students for whom time constraints or personal variables have prevented them from demonstrating writing proficiency in a single-test essay

. In the long run, it makes more sense for learners to compete with themselves using portfolios (aiming to achieve their personal best), than for them to compete with their peers on single-test essays.

Portfolios thus seem to be the ultimate assessment tool, because they legitimate the writing process and can represent a more complete picture of performance.

In addition to this, portfolios have been successful in placing incoming students. An innovative move for the university would be to invite students to submit writing portfolios through which credit / advanced placement may be awarded.

In doing so, one difficulty emerges: writing samples should be completed under similar conditions (time, instructional technique, amount and kinds of collateral reading, topics, and class climate). However, it would be a complicated if not impossible task to obtain equivalent portfolios from incoming freshmen or transfers, much less require common topics and conditions for writing them.

Second is the difficult problem of monitoring and certifying authenticity of portfolios. This can be a fatiguing and costly process, especially when portfolios arrive from off campus. Then there is the time limit expected by the academic advisors and the registrar's office. Both put pressure on the speed of such evaluations. Placement via portfolio requires more time. Only when administered during class time and scored by individual instructors, the single-test essay is fast and not costly.

Ideally, four pieces of writing representing a range of purposes and patterns of rhetorical development should be collected over the course of the semester. Both at mid-term and at the end of class, portfolios are exchanged, and graded by another member of the teaching staff, who holistically confirms or questions their quality. Within the classroom setting the difficulty of authenticating the accumulated material is largely overcome by integrating zero-level and intermediary drafts into the portfolio for instructor review.

When there are significant shifts in student population, writing courses and portfolio implementation should be delayed until after the second year of study, when the numbers remain fairly unchanged, so that the courses might genuinely introduce students to the advanced writing within their chosen fields rather than become merely remedial ones.

Thus, to insure writing competency, a second layer of assessment should be instituted. Portfolio assessment in the first two years acts as a check against decay in writing skills.

The content of single-test essays is general. However, they should be scored by representatives of the departments which will receive those students. Thus, the faculty ought to take responsibility for decisions on writing skills and competence for their prospective majors.

Furthermore, this is where portfolios will prove their greatest utility: in the content areas in which the conventions of discourse become

specialized. Pieces of interdisciplinary writing could also be included.

Keeping an *Academic and Career Resource Journal* which brings together student writing performance in various academic disciplines is also an effective modality of monitoring progress. In addition, business and professional communication, education, biology, chemistry, and psychology use portfolios to assess results in the major.

Majors could be asked to submit a portfolio consisting of few freshmen pieces and three critical papers: a technical analysis, a feasibility piece, and one other. The instructor signs and certifies to its authenticity.

Portfolios serve in a cross-curricular capacity whereby advisors within the major use them to certify literacy. Supplemented by an exit exam, portfolios must pass or be revised until they do.

Even if poor writing cannot prevent students from graduating, some universities go so far as to stamp students' writing status on their transcripts: competent, marginal, or unsatisfactory (enough to discourage anyone, employer or student).

In the absence of resources to support multiple measures in refining writing strategies, alternating the single-test essay and portfolio offers the best of both worlds.

The single essay provides a quick estimate of skill level for placement. The portfolio within the freshman course and as a pre-graduation check provides a broader and deeper look at student progress in relation to the professional future. At the lower level weak writers take the basic writing course. At the upper level they receive remediation in writing centers.

Clearly, without massive faculty reeducation efforts, curriculum would not change; much less assessment. Portfolios or single exams would provide little control over ratings and risk wide disparity among them.

3 Problem Solution

Portfolios mean different things to different people, and, although they have become popular over the past decade, most teachers still do not make the most of them.

Each portfolio entry may be scored using a checklist. The entries and the checklist are designed individually for each portfolio by student and teacher together, according to the requirements of the subject and the topic. The overall portfolio can be scored as well, based on the extent to which instructional goals have been met.

Despite its great potential and the numerous advantages it provides, this assessment technique has one major limitation, which is the amount of time required for the teacher to collect the information or to score the students' performance. Still, the extra time involved pays off.

The whole point of having portfolios is to individualise them as much as possible, not only to suit group goals, but to suit each student's goals as well. Because of this, no two portfolios may ever be alike. Such collections need to be carefully planned just like instruction (planning instructional goals, objectives, materials and activities requires a plan to gather evidence of student achievement as well).

The system for bringing all information together and the framework fit for sharing results with students, the other teachers, the program administrators, and the community is the portfolio.

It can also provide useful instruments for mediation between prospective employer and employee, thus reconciling students' aspirations with society's needs.

3.1 Impact of portfolios

Using portfolios helps document the needs and assets of the community, and also help clarify program identity, revealing the thinking behind the development of a program and throughout it. Ideally, the process of deciding on criteria for the portfolio will flow directly from the program objectives.

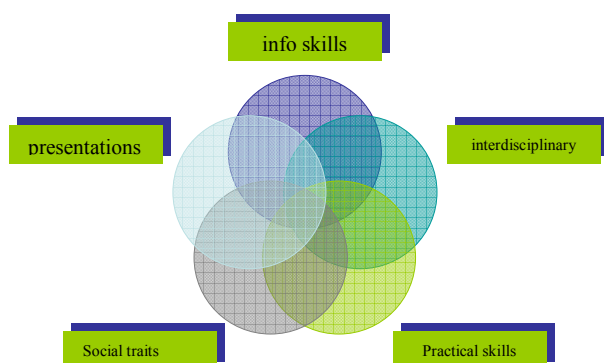
Portfolios have considerable impact on current activities, other than mere academic work.

Many perceive and emphasise the diagnostic value of this type of assessment: it is a record which can offer useful feedback to the student and teacher, allowing the identification of strengths and weaknesses, and providing an opportunity for explicit guidance and an appropriate shift in teaching and learning strategies. Therefore teachers can become more effective in adjusting to the needs of each new generation, and they can also influence the students' behavioural patterns, as well as their evolving learning styles.

Moreover, university policy itself could be slightly altered, focusing on real life activities of more interest and increasing appeal for students, in view of a better response to the demands of employment markets.

Employers and institutions receiving engineering graduates may acknowledge and support the value of such objectives. They better see the need for a comprehensive document that provides valid assessment of abilities, skills and competence, which are comparable and reliable.

Portfolios supplement traditional examination results by providing data on student performances never before taken into account by old scorings.



Examples:

- basic skills in selecting/combining information
- presentation skills
- practical skills (typing/phoning/using computers)
- cross curricular skills (listening and talking, exchanging information, cooperating in groups)
- social traits (punctuality, perseverance, interest)

Portfolios may encourage universities to discuss their curricula for avoiding inconsistencies such as: topics that fail to reflect teaching objectives or students' learning experience, restrictive or even punitive rather than stimulating homework, one sided exploration / exploitation of students' talents.

3.2 Steps of Portfolio Assessment

Step 1: Focus on the learning process, which documents growth over time toward a goal. Documentation includes statements of the end goals, criteria, and plans for the future.

This should include basic information/items describing the participant's performance or mastery level at the beginning of the program. Other items are works in progress, selected at many interim points to demonstrate steps toward mastery.

At this stage, the portfolio is a formative evaluation tool, probably most useful for internal information for the participant and staff.

Step 2: Focus on results and best pieces, which includes examples of the best efforts of a participant, community, or educational program, demonstrating target attainment.

Product/best pieces portfolios encourage reflection about change and learning. The program participants, individually or in groups, are all involved. For individuals and communities alike, this provides opportunities for a sense of ownership

and strength.

It helps to communicate accomplishments and, at this stage, the portfolio is an example of summative evaluation, and may be particularly useful in public relations.

3.4 Distinguishing characteristics

Portfolios used for assessment purposes are most commonly characterized by collections of student work that exhibit to the faculty and to the student the learning progress and achievement in given areas.

Included in the portfolio may be research papers and other process reports, multiple choice or essay examinations, self-evaluations, personal essays, journals, computational exercises and problems, case studies, audiotapes, videotapes, and short-answer quizzes. This information may be gathered from in-class / out-of-class assignments.

Information about the students' skills, knowledge, development, quality of writing, and critical thinking can be acquired through a comprehensive collection of work samples. A student portfolio can be assembled within a course or in a sequence of courses in the major.

The faculty determines what information or students' products should be collected and how these products will be used to evaluate or assess student learning. These decisions are based on the academic unit's educational goals and objectives.

Portfolio evaluation is a useful assessment tool because it allows faculty to analyze an entire scope of student work in a timely fashion. Collecting student work over time gives departments a unique opportunity to assess a students' progression in acquiring a variety of learning objectives.

Using student portfolios also gives faculty the ability to determine the content and control the quality of the assessed materials.

Portfolios are widely used at research institutions and have been a part of student outcomes assessment for a long time.

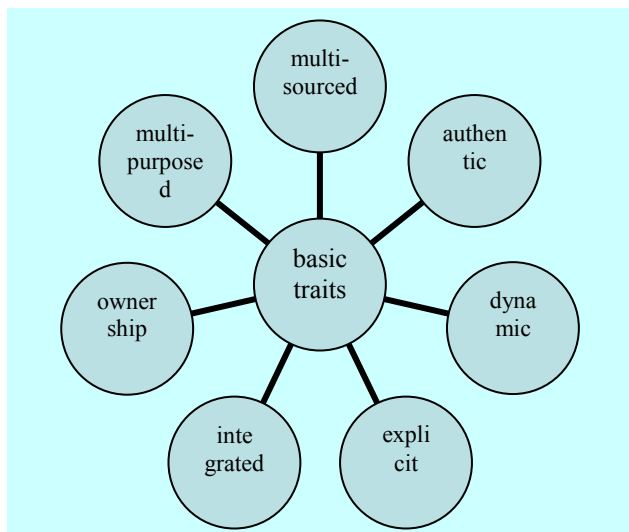
Departments using portfolio evaluations include foreign languages, electronics and telecommunications, power and electrical engineering, chemistry, as well as general education programs.

Another key factor is inter-rater reliability in large-scale portfolio assessments. The scores for language skills, mathematics, and science classes are mixed and, although portfolio assessment is becoming increasingly popular, it may not survive unless portfolio scoring can meet the demands of large-scale assessment standards.

Portfolios are student-centred and used to help increase learning, rather than to rank or punish students. They guide learners in taking a more active role in monitoring personal progress.

Foreign language engineering portfolios must be selective and collaborative in order to prove useful for assessment purposes, and should provide many opportunities for involving the community and program administrators in monitoring academic progress.

Characteristics:



- Multi-sourced (in evaluating specific evidence). Multiple data sources are investigated and they include artifacts and people cited with their own statements (observations made by participants, program staff, employers, community members).
- Authentic (context and evidence are directly linked). Collected products are related to the program activities, as well as to its goals and criteria.
- Dynamic (capturing growth and change). All data and evidence are added at many points in time, not just before and after measurements, as in the traditional approaches. Portfolios display different stages of mastery, some self-selected, in view of better understanding the process of change.
- Explicit (clearly defined purpose and goals). The students or program participants should know in advance what is expected of them, so that they can take responsibility for developing the evidence they will include in their own portfolios.
- Integrated (items show a correspondence between program activities and life experiences). Participants apply their skills and knowledge to real-life situations.
- Based on ownership (the participant helps with determining what items and issues to include and

goals are to be met). The portfolio assessment process should require that the participants engage in reflection and self-evaluation as they select the evidence and set or modify their goals. They are not just evaluated or graded by others.

- Multi-purposed (hereby allowing simultaneous assessment of program effectiveness, community utility and participants' performance). It can be passed on to the next teachers as the student moves to the next level.

3.5 Analyzing and reporting data

Like any qualitative assessment method, portfolio data analysis can be challenging.

Methods of analysis will vary depending on the purpose of the portfolio, and the types of data collected.

However, if goals and criteria have been clearly defined, the evidence in the portfolio makes it relatively easy to demonstrate that the individual/population achieved particular goals.

Certain aggregated or comparative results can be reported, even if participants have individualized goals within a program.

Subjectivity of judgments is often cited as a concern in this type of assessment. Nevertheless, in educational settings, professors using portfolio assessment periodically compare notes by independently rating the same portfolio to see if they are in agreement on scoring. This provides a valuable check on reliability.

Key portfolio framework assumptions are: designing authentic learning opportunities; interaction of assessment, curriculum and instruction; multiple criteria derived from multiple sources; transferability of skills; credibility and systematic teacher preparation, evaluation, and dependability.

Student portfolios are purposeful and organized collections of student work assembled over a period of time that tell the story of a student's efforts, progress, and achievement. They should be used for assessing student growth, overall learning, and the process by which work is done, as well as the final product.

Portfolios support assessment of difficult attributes, such as creativity and critical thinking, responsibility for learning, research strategies, perseverance, and communication skills.

Students participate in the selection of the items in the portfolio as well as the development of the guidelines for selection.

Most items in the portfolio are accompanied by reflections which explain why each item is evidence of some significant learning.

Section One: Introduction	
	Table of Contents
	Reflective Introduction
	Goal Sheet
Section Two: Scientific Inquirer	
	Work Sample #1
	Reflection #1
	Work Sample #2
	Reflection #2
Section Three: Maths Problem Solver	
	Work Sample #1
	Reflection #1
	Work Sample #2
	Reflection #2
Section Four: Creative Risk Taker	
	Work Sample
	Reflection
Section Five: Decision Maker	
	Community Service Overview
	Reflection
	Journal
Section Six: Self-Directed Learner	
	Research Sample
	Reflection
	Project Plan
	Reflection
Section Seven: Collaborator	
	Project Sample
	Reflection
	Peer Feedback
Section Eight: Communicator	
	Project Sample
	Project Summary
	Presentation Sample
	Presentation Summary
Notes	

Analysis Questions

- How have you organized your portfolio and why is it in this order?
- Why have you chosen these particular pieces to demonstrate your learning?
- Which piece in your portfolio are you most proud of? Why?
- What piece would you like to remove from this collection? Why?
- What makes this your best piece?
- How did you go about creating it?
- What problems did you encounter?
- How did you solve those problems?
- Of all the items included, which one was the hardest for you?
- What makes your strongest piece different from your weakest piece?
- What goals did you set for yourself? How well did you accomplish them?
- Why did you select this piece of work?
- What was particularly important to you during the process of creating this work?
- How does this relate to what you have learned before?
- Which piece would you most like to improve? Why?
- What is the one thing you would like someone to notice about your portfolio? Why?
- Do you feel that this collection of work really reflects your abilities and what you have achieved this year? Why or why not?

Change Questions

- How is your work at the end of the class different from your work at the beginning?
- Has the way you plan work changed over time? If so, how?
- How did you learn to do ... ?
- Has your persistence changed since the beginning of the class? How?
- What have you been working on this year to improve? Has it improved? Why or why not?
- What is getting easier for you?
- What do you still not understand?
- What do you feel most confident about?
- What was the most significant thing you learnt?

When undertaking the process of producing a portfolio, students take ownership and responsibility for their learning by establishing ongoing learning goals and assessing their progress towards those goals. Consider including the following items in the portfolio:

- An effective solution to a difficult problem

- A creative use of technology to demonstrate understanding
- An application to an out-of-school situation
- A piece showcasing higher-order thinking
- Something a student is proud of
- Something that demonstrates the attainment of a goal
- Something a student enjoyed learning or doing
- Something that shows great improvement over previous efforts (include the first piece for comparison)

Questions for establishing assessment criteria

- Does your portfolio show growth or change over time? Does it show how you've improved?
- Does it include the process of how you worked as well as the final product?
- Does it include thoughtful reflections on your achievements and learning?
- Does it include goals for future work?
- Does your portfolio contain an adequate amount of information?
- Does your portfolio show how well you do various tasks?
- Does your portfolio contain adequate variety in the types of items included?

Self assessment grid: 1 to 4 increasing complexity

Level 1

- I have included items that are routine and show little learning
- I have not organized my portfolio or thought about aesthetics
- My self-assessments are one-dimensional: either global statements or statements focusing on only one aspect of the work
- My work does not show commitment to improvement
- My problem solving process shows limited use of resources, lack of confidence and lack of motivation
- I have not set goals

Level 2

- I have some items in my portfolio that shows my learning, but they are incomplete
- I have given some attention to detail, organization and aesthetics, but it is not always clear
- My self-assessments may be multidimensional but lack specific details and breadth
- My work shows some commitment to improvement
- My problem solving depends on repetitive use of strategies and resources
- I have set goals but they are restrictive or have not grown or shifted over time

Level 3

- I included various items showing my learning
- My organization of the contents is clear
- My self-assessments are multidimensional and include reflections about most of the traits
- My work shows a commitment to improvement
- My problem solving uses various resources
- I have set goals and met them

Level 4

- I have included a wide variety of items in my portfolio that show my learning completely
- My organization of the contents is clear, detailed, and aesthetically pleasing
- My self-assessments are multidimensional including reflections about a wide variety of traits:
 1. process(self-direction,goals,collaboration)
 2. thinking(creative,critical,problem solving)
 3. products/performances (improvements)
- My work shows a strong commitment to improvement such as peer input, sharing, revisions, evidence of process
- My problem solving involves using various resources in expansive and meaningful ways
- My work shows that I've gone beyond the established criteria in setting goals and meeting them

3.6 When to use portfolio assessments:

- In evaluating programs that have flexible or individualized goals/outcomes. For example, within a program on enhancing students' social skills, some individuals may need to become more competitive or assertive. Each portfolio assessment would be geared to the learner's individual needs or goals.
- In allowing individuals / programs to be involved in their own change and decisions to change.
- In providing information that gives meaningful insight into behavior / related change. As portfolio assessment emphasizes the process of growth at multiple points in time, it is easier to see patterns.
- In providing a tool that can ensure communication and accountability to a wide range of audiences (participants, funders, members of the community, potential employers) who can often appreciate more visual or experiential evidence of success.
- Allowing more complex assessment of important aspects (not only the ones easiest to measure).

3.7 When to avoid portfolio assessment:

- In evaluating programs with yes/no uniform goals, where the evidence is generally straightforward.
- In ranking participants / programs in a quantitative or standardized way (evaluators/program staff make subjective judgments of relative merit in portfolios).

- Comparing participants / programs to standardized norms. A portfolio includes standardized test scores along with other kinds of evidence, but this is not its main purpose.

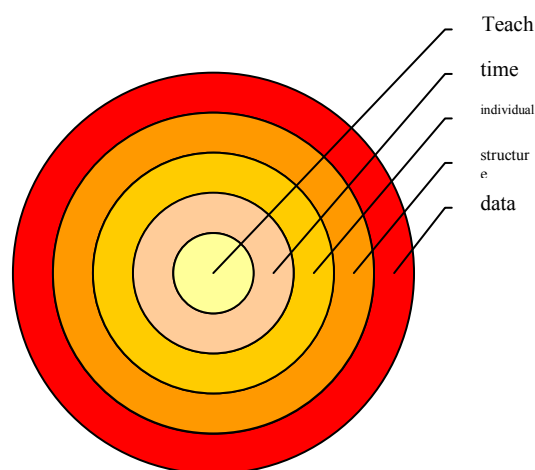
3.8 Advantages of using portfolio assessment

- Allows the evaluators to see the student, group, or community as individual, each unique with its own characteristics, needs and achievement levels
- Serves as a cross-section lens, providing a basis for future analysis and planning. By viewing the total pattern of the community or of the individual participants, one can identify strengths, weaknesses, and barriers to success.
- Serves as a concrete vehicle for communication, providing ongoing communication or exchanges of information among those involved.
- Promotes a shift in ownership; communities and participants can take an active role in examining where they have been and where they want to go.
- Offers the possibility of addressing shortcomings in traditional assessments.
- Covers a broad scope of information, from many different people who know the program or person in different contexts (participants, teachers, staff, peers, community leaders, employers, strategists)
- Links assessment with instruction. That is, student performance is evaluated in relation to instructional goals, objectives and university activities.
- Represents what students do in the classroom and reflects their gradual progress. Thus, portfolios can be said to have content validity.
- Goes beyond assessment, transforming instruction and learning.
- Models professionalism
- Enhances information technology skills
- Provides credit for learning beyond the classroom
- Connects formal and informal learning
- Increases the quantity as well as the quality of writing, contributing to cognitive development.
- Provides a multidimensional view on foreign language learner growth over time (unlike single test scores and multiple-choice tests). Portfolios reveal much more about what engineering students can do with what they know, making them reflect on their progress and set improvement goals.
- Can be tailored to suit not only individual classes but also individual students, and portfolio results can be used to plan instruction.

3.9 Disadvantages in portfolio assessments

- Less reliable or fair than more quantitative evaluations such as test scores.

- Time consuming for teachers who organize and evaluate the contents, especially if portfolios have to be done in addition to traditional testing and grading.
- Individualized criteria for each student can be difficult and unfamiliar to develop at first.
- Unclear goals and criteria may transform the portfolio into a miscellaneous collection, useless in showing patterns of growth or achievement.
- Data from portfolio assessments can be difficult to analyze or aggregate to show change.



3.10 Portfolios used for assessing professors

Professional teaching portfolios allow educators to authentically document their own competence, organization, skill and creativity. Portfolios become a record of on-going assessment and feedback.

They create a self-portrait of achievements as the years unfold, allow for reflection and growth, create an opportunity for meaningful dialogue with colleagues or supervisors and form a framework for career advancement.

In addition, they serve as a model for students. It is important for students to see that their teachers also keep portfolios.

Here are other reasons in favor of using the professional portfolio for educators:

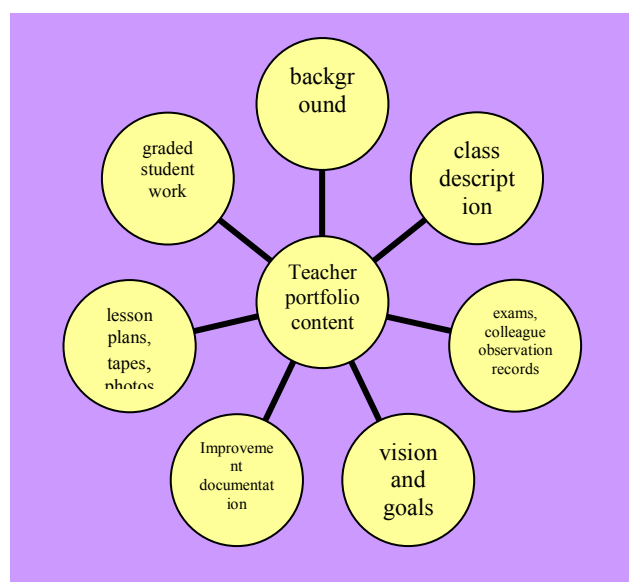
- captures the complexity of actual teaching
- promotes new approaches to teaching
- develops authentic evaluation
- creates concrete evidence of teaching that can be used for professional development and promotion strategies
- becomes a foundation for change, not only for individuals and colleagues, but also for institutional bodies such as departments, faculties and organizations
- re-examines hiring and promotion processes

- encourages review and evaluation of the reward process for teaching
- develops individual responsibility for the process and the product
- has the potential to create a culture in which thoughtful discourse on teaching becomes the norm
- creates a record over time, by documenting the development and unfolding of expertise in teaching

Teacher portfolios are built by teachers not only to highlight or demonstrate knowledge and skills in the field of teaching, but also to provide a means for reflection by offering the opportunity for critiquing work and evaluating lessons effectiveness or interpersonal interactions with students or peers.

What is actually included in teacher portfolios depends on how they will be used. A portfolio may contain some or all of the following:

- Teacher background.
- Class description: time, grade and content.
- Written examinations: national teacher's exam, state licensure tests.
- A personal statement of teaching vision and goals.
- Documentation of effort to improve one's teaching: seminars, programs, etc.
- Implemented lesson plans, handouts and notes.
- Graded student work: tests, quizzes and projects.
- Video/audio tape of classroom lessons.
- Colleague observation records.
- Written reflections on teaching.
- Photos of bulletin boards, chalkboards or projects.



A common misconception is that a teacher portfolio is a folder laden with teaching artifacts and evaluations. Ideally, it is a document that reveals, relates and describes the teacher's duties, expertise and growth in teaching.

Each assertion in the portfolio is then documented in an appendix or a reference to outside material, such as videotapes or lengthy interviews. The size of a portfolio varies, but it is typically two to ten pages, plus appendices.

A teacher portfolio is an education tool, which is primarily used in two ways. First, portfolios constitute a means of authentic assessment in evaluating a teacher's effectiveness for licensure and/or employment decisions. Second, such portfolios provide feedback, so that professors may improve the quality of their didactic performance.

As a form of authentic assessment, teacher portfolios may play a major role in the overall evaluation of a professional. Numerous technical universities now use this method to make personnel decisions. Many other institutions use portfolios to augment more traditional assessment measures, such as standardized tests and observation checklists.

However, the use of teacher portfolios for high-stakes decisions, such as certification and advancement, is not universally endorsed. The reasons for caution include the subjectivity involved in evaluating portfolios, their variability in content and construction, and the lack of consensus in what a teacher should know and be able to do.

The portfolio is an instrument for assessing the relationship between teacher choices or actions and their outcomes. In addition, teachers are encouraged to share their portfolios, during construction, with both beginning and experienced teachers. This continuous dialogue is designed to provide a rich context in which to experience the multifaceted nature of teaching.

Portfolios that are used to make personnel decisions tend to come under a higher level of scrutiny than the ones intended for professional growth, due to the importance of the consequences.

The construction is such that each portfolio is unique and tailored to the individual, therefore it has a high degree of flexibility and subjectivity. As a tool for professional development, this is a positive feature; as a tool for arriving at personnel decisions, where comparability between teachers (often from different subject areas) is desired, the lack of standardization is a problem.

It can be rectified by requiring certain items in the portfolio of a teacher seeking a position or a promotion. Other items may be included at the teacher's discretion. Mandatory items include:

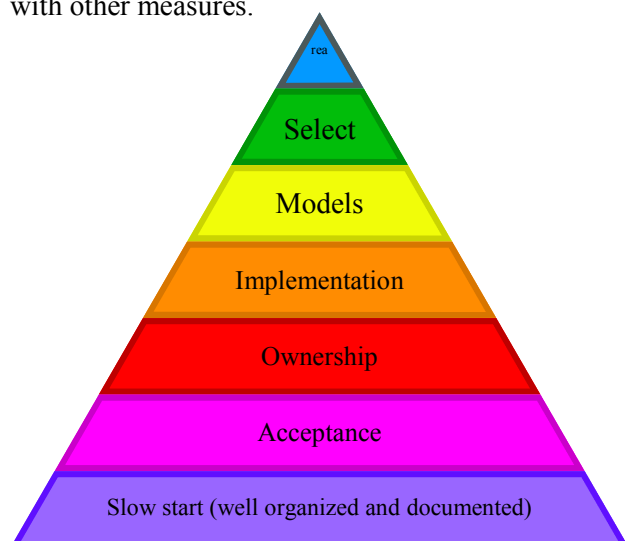
- Statement of teaching responsibilities.
- Statement of teaching views and methodologies.
- Description of efforts to improve personal activity.
- Representative course syllabi.

- Summary of institutional instructor evaluations by students.

To minimize subjectivity in teacher portfolio evaluation, an evaluation form with predetermined qualities, based on the mandated items is implemented. Questions are then grouped into categories, such as Instructional Design, Course Management and Content Expertise, and assessed. Ratings may then be combined to generate categorical and / or overall ratings.

3.11 Steps for implementing a portfolio program

1. Start slowly. Instituting portfolio assessment, either for advancement or growth, takes time. Allow one to two years for program development, implementation and regulation.
2. Gain acceptance. It is extremely important that both administrators and teachers should accept them.
3. Instill ownership. Teachers must be involved in developing the portfolio program, being responsible for program directions and use from the beginning.
4. Communicate implementation. Teachers must know explicitly how portfolios will be used. If they are used for advancement, then the expected structure and intended scoring methods need to be explained in detail.
5. Use models. Models of portfolios used by other institutions are readily available and they may easily be adapted and provide examples for developing personal portfolios.
6. Be selective. Portfolios should not contain everything a teacher does. It contains carefully selected items that reflect and substantiate a teacher's expertise and achievements.
7. Be realistic. Portfolios are only one form of authentic assessment. As such, they should be used as part of the assessment process, in conjunction with other measures.



3.12 Portfolio Assessment for foreign language literacy

Generally speaking, a literacy portfolio is a systematic collection of a variety of teacher observations and student products, collected over time, that reflect a student's developmental status and progress made in literacy.

A portfolio is not a random collection of observations or student products; it is systematic in that the observations that are noted and the student products that are included relate to major instructional targets. For example, book logs that are kept by students over the year can serve as a reflection on the degree to which students are building positive attitudes and habits with respect to reading. A series of comprehension measures will reflect the extent to which a student can construct meaning from text. Developing positive attitudes and habits and increasing the ability to construct meaning are often seen as major goals for a reading program. Portfolios are multifaceted and just begin to reflect the complex nature of reading and writing. As they are collected over time, they can serve as a record of growth and progress. By asking students to construct meaning from books and other selections targeted at various levels, the individual stage of development can be assessed. Teachers are encouraged to set standards or express expectations in order to assess students according to these reference points. Portfolios can consist of a wide variety of materials: teacher notes, teacher-completed checklists, student self-reflections, reading logs, sample journal pages, written summaries, audiotapes of retellings or oral readings, and videotapes of group projects.

3.12 E-portfolios

Portfolio assessment has become widely used in engineering education as a way to examine and measure progress, by documenting the process of foreign language learning as it occurs. Portfolios extend beyond test scores to include substantiated descriptions/samples of students' or teachers' evolution. It is fundamental in performance assessments based on the principle that the subjects should demonstrate what they can do, rather than talk about it. Documenting progress toward higher order goals such as application of skills and synthesis of experience requires data beyond the ones provided by standardized norm-based tests. Information is collected from various sources, by multiple methods, at many times. Contents include solutions to mathematics problems, social studies reports or science experiments, drawings, photos,

video/audio tapes, writing or other work samples, computer disks, copies of standardized or program-specific tests and seminar or lecture plans, alongside with relevant research in the field. Sources generally include the teaching staff, inspectors, community members, as well as self-reflections from students or professors themselves. Portfolio assessment is a strategy for systematically organizing and using the subjects' data, aiming at better connecting engineers with labor markets in perspective.

An e-portfolio is a digitized collection of artifacts, including demonstrations, resources, and accomplishments that represent an individual, group, community, organization, or institution. This collection can be comprised of text-based, graphic, or multimedia elements archived on a Web site or on other electronic media such as CD-ROM or DVD. They can also be defined as personalized, web-based collections of work, responses to work, and reflections that are used to demonstrate key skills and accomplishments for a variety of contexts and time periods.

There are mainly three types or applications of e-portfolios: Course portfolio, Program portfolio, and Institutional portfolio. Course portfolios are usually assembled by students for one course. They document and reflect upon the ways in which the student has met the outcomes for that particular course. They can also be part of course assessment. Program portfolios are developed by students to document the work they have completed, the skills they have learned, and the outcomes they have met in an academic program or department. Students can use them to show-case their work to prospective employers. Institutional portfolios are mainly used as personal development planning tools in which each individual's records are documented, including future plans and extra-curricular activities.

E-portfolios are being used to meet a variety of learning requirements such as:

- Assessment (demonstrate achievement against criteria),
- Presentations (evidence of learning in a persuasive way),
- Learning (document, guide, and advance learning over time),
- Personal development,
- Multiple owners (allowing more than one person to contribute and participate in the content).

Student e-portfolios are a product of faculty-assigned, print-based student portfolios from the mid-80s (typically used in art-related programs and in disciplines with mostly writing components, such as English and communication studies). They

gained prominence in higher education during the mid-90s and continue to be increasingly popular.

E-portfolios are an obvious extension to paper-based folios in this e-learning age with some added advantages. With digital portfolios, it is easier to rearrange, edit, and combine materials. They offer a variety of layouts and storage of different forms of content both multimedia and text-based. The student can use hyperlinking to connect documents together linking between the portfolio elements and also external sources and references. This makes it easier to make associations between different subject areas, learning experiences and artifacts. And finally, e-portfolios are portable and mobile. The e-portfolio can be potentially accessed anywhere in the world and can be replicated and shared with others.

If implemented well, e-Portfolios can encourage reflective practice, peer and self-evaluation, and assessment. They can provide an ongoing basis for student's planning and goal setting. They could enable and encourage professional learning and promote self-development. They can cater to a wide range of learning styles. Students have different learning strategies and e-portfolios can support this diversity. They can provide a framework for formative and summative assessment.

Reflection plays a key role in the successful implementation of e-portfolios especially in higher education. Reflection is an essential feature of a deep approach to learning. Structuring the practice of reflection transforms it into learning experience.

Various e-portfolio software allow for diverse activities that support this learning style. A *critical incident diary* also works well in e-portfolio software. The aim of developing reflective learners is to encourage students to be more self-aware and self-critical; to be honest about themselves, and open to constructive criticism and feedback. E-portfolios with reflective processes and mentoring by the teacher can develop these qualities in students.

The use of an e-portfolio over a whole program is becoming relatively common especially in American universities and colleges. E-portfolios have the potential to facilitate discussion among students and assessors on their work in the context of their prior activities, achievements, and future goals. Teaching students the skill of setting goals for themselves is useful all life long, and, like reflection, critical for adult learning proficiency.

E-portfolio provides the option for peer commenting and allows integrating it directly with student's work. Peer commenting on student work is usually a great incentive for improving the quality and effort that students invest in their activities.

Another process facilitated by e-portfolios is mentoring. A number of teachers have noted that while providing advice and guidance to students throughout the course via e-portfolios may seem to be very a time consuming activity, it is invaluable as a means of increasing students' understanding of their own learning.

E-portfolios are based upon a constructivist model of learning, allowing students to begin their learning at many different starting points. Formative feedback or critique challenges the student's original insights prompting reflection and revision. In this sense, the portfolio is a tool to support the process of learning, and assessment is formative. The portfolio becomes a story of learning owned by the learner. E-portfolios encourage students to construct new knowledge rather than show how much transmitted knowledge they have retained. This is the constructivist view, one which is very important in teaching and learning currently.

This pedagogical approach is frequently associated with e-learning along with student-centered learning. Moreover, if the student e-portfolio space is linked with the learning management systems like Blackboard, WebCT, or Moodle, then students will have access to full records of their performance both formative and summative assessments.

A number of issues associated with student e-portfolios still need further clarification:

1. Is a student e-portfolio considered an official representation of a particular learning experience? If the student is allowed to update or change the e-portfolio, is it still official?
2. As e-portfolios accumulate year after year, more servers and maintenance are required. How long should an e-portfolio remain at an institution after the student graduates? Should students be allowed lifetime access to e-portfolio after they graduate? Should alumni be charged a fee to keep their e-portfolios on an institution's servers?
3. Who owns the e-portfolio? Is it the institution? Should anyone other than the student be able to make changes to the student's e-portfolio?
4. How are e-portfolios evaluated so that they are valid? How do we validate the material added by students to e-portfolios as student's authentic work?

Other challenges are implementation driven:

1. How many and what kind of servers are necessary to hold increasing numbers of e-portfolios?
2. What policies are needed for governing information access, security, and privacy? How will they be determined and controlled?
3. How will an e-portfolio system authenticate that all the work, was created by the author?

4. Who owns the records? Can it all be transferred to another institution?
5. Can it be exported to another format for offline usage?
6. How likely is it that the students and faculty will accept and use the e-portfolio system?
7. What are the policies on long term maintenance and deletion of e-portfolios?

Just like any new technology, e-portfolios have drawbacks as well. The most significant is that it excludes students who are illiterate in technology, or who do not the right equipment and software in order to work on e-portfolios.

Moreover, learners might spend too much time focusing on the design rather than on the content. From an administrative point of view, it can be time consuming and labor-intensive for large groups. For an effective use, it requires proper student and staff training and instruction.

There might be some privacy issues as well. If it is available via the internet, it might enable plagiarism of original work, ideas, and thoughts.

The ability for the student to modify contents after evaluation may alter the intended purpose.

And finally, if used for grading purposes, it might require some sort of standardization so that it might become easier to evaluate.

There are very promising educational opportunities for e-portfolios across various disciplines, applications, and institutions.

Although many have begun to adopt e-portfolio technology, other numerous institutions are still struggling with the implementation of Learning Management systems. Nevertheless, it is essential to explore this technology as it has the potential to support various learning styles.

In this era of knowledge economy, where most of the future jobs are not yet defined, it is critical for students to plan ahead. E-portfolios, as a constructivist models of learning, further develop students' reflective practice, goal setting, self-evaluation and assessment skills.

4 Conclusion

Portfolios have a definite impact on teacher and students' roles. Despite the advantages of student self-assessment, many teachers do not feel comfortable with this idea because too much control is given to students, who are not always capable of constructive self-evaluation. This assumption calls for a change: both parties need to take up new roles. The new role for teachers includes providing time

for work that encourages decision making, drafting, reflecting, discussing, reading and responding. The new role for students focuses mainly on the improvement of their own capacity of selecting materials, on engaging in self and peer evaluation and on setting goals for learning.

Portfolio assessment is an alternative form of assessment that is particularly attractive to adult, career and vocational educators, because it includes the assessment of active learning and performance, rather than merely recalling memorized facts. It serves the interests of business and industry as well by forging a connection between activities in the classroom and the world beyond school.

Although portfolios can be time-consuming to construct and tiresome to review, they can capture the complexity of professional practice in ways that no other approach can. Not only are they an effective way to assess teaching quality, but they also provide teachers with opportunities for self-reflection and collegial interactions based on documented episodes of their own teaching.

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