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AN OVERVIEW OF THE ELECTRONIC PORTFOLIO PROCESS

ABSTRACT

Today's educators place special emphasis on learner-centered instructional techniques which consider learner interests and needs, reflects the development of the learner within a process, emphasizes learning and performance, uses modern technologies and encourages the on-going development of the teacher as well. It is widely accepted that teaching is a process that relates instructional techniques to the needs of learners. Instructional designers therefore aim to facilitate these processes so that they meet learners' requirements in full. To be comprehensive and inclusive of learners' requirements they must consider the skills and approaches thought necessary to implement appropriate teaching strategies and techniques, from planning through to assessment. Attention is also given to appropriate use of technology. Within this context it is useful to consider a popular tool in education, which, enhanced by the use of technology, is thought to facilitate the establishment of favorable education environments: the e-portfolio.

Keywords: Electronic Portfolios, Teaching and Learning Process.

ELEKTRONİK PORTFOLYO SÜRECİNE GENEL BİR BAKIŞ

ÖZET

Günümüzde öğrenen merkezli, ilgi ve ihtiyaçları dikkate alan, süreç içerisinde öğrenenin gelişimini yansıtan, öğrenmeye ve performansa vurgu yapan, çağdaş teknolojilerden yararlanan ve hatta öğreticinin de gelişimini sağlayan öğretim uygulamalarının önemi artmıştır. Öğretim sürecinin hem öğretim uygulamaları hem de öğrenenlerle doğrudan bir ilişki içerisinde olduğu bilinen bir gerçektir. Öğretim süreci ile öğrenenler arasındaki bu kuvvetli ilişki öğretim sürecini tasarlayanların ve uygulayanların, öğrenenlerin tüm özelliklerine uygun bir süreç yürütebilme kaygısını arttırmaktadır. Bununla birlikte günümüzün değişen yeterliklerini bireylere kazandırabilmenin ve teknolojiyi öğretim amaçlı kullanabilmenin önemi oldukça artmıştır. Bu iki durum, öğretim stratejilerinden tekniğe, planlamadan değerlendirmeye kadar geniş bir yelpazede farklı yaklaşımların sergilenmesi gerekliliğini ortaya çıkarmaktadır. Bu bağlamda eğitim alanında son zamanlarda değişen anlayışların etkisi ve teknolojinin katkısıyla birlikte kendini gösteren e-portfolio öğretim süreçlerinin, arzu edilen öğretim ortamlarının oluşturulmasında kolaylıklar sağlayacağı ifade edilebilir.

Anahtar Kelimeler: Elektronik Portfolyo, Öğretme ve Öğrenme Süreci.



1. INTRODUCTION (GİRİŞ)

Etymologically, the word portfolio is made of the combination of the Latin words "portare" (to carry) and "folium" (paper, sheet) into the Italian word "portafoglio", and then transferred to English as "portfolio" (OED, 2007). The use of portfolios in daily life is not a new phenomenon. For instance, the financial services industry uses portfolios to help manage the value of investments. They are also used in areas such as fine arts, marketing or architecture. Portfolios were introduced in the field of education as an instructional tool in the 1970s (Reckase, 1995; Danielson and Abrutyn, 1997; Underwood and Murphy, 1998; Callahan, 1999; Lawrenz, Huffman and Welch, 2000; Briscoe and Wells, 2002). Since then, the use of portfolios has become common in teaching.

Various definitions of portfolios are possible as they have different features depending on their aims and uses. However, a general definition of portfolios used in education has been given by Paulson, Paulson and Meyer (1991:60): "a purposeful sum of learner works reflecting their efforts, improvement and successes". In another effort, Arter (1990:27) defined a portfolio as a purposeful accumulation of the evidence of student efforts and successes reflecting selection and assessment criteria. In addition to these definitions, it should be said that educational portfolios reflect the development of cognitive gains and mainly serve to document student learning (Danielson and Abrutyn, 1997:5).

Within this context, Barton and Collins (1997) list the works that may be found in a portfolio:

- Artifacts: Documents produced during the normal academic studies.
- Reproductions: Learner works produced outside the program.
- Attestations: Documents reflecting learners' academic improvement.
- Productions: Documents prepared for the portfolio. These include objective statements and learner reflections.

Danielson and Abrutyn (1997:5) write that portfolios serve to make learners work through the satisfaction of learning, help the self-evaluation skills of learners and show them a reflection of their learning in areas not traditionally tested.

With the use of portfolios, more clear data is collected about the improvement of the learners and they are encouraged to contribute to the decisions made during this process of change. At the same time, learners are given new ways to display their successes and talents (Demirli, 2002). For these reasons, portfolios include not only the products of learners' academic studies but also their reflections on learning (Piantanida and Garmen, 1997:4). By doing so, portfolios contribute to the implementation of reflective pedagogy which is considered so important in our day as to inspire different models (Kuit, Reay and Freeman, 2001; Hooijberg et al., 1997), and they also help the development of future teachers (Senne, 2003).

Today, portfolios are used not only for instructional purposes but also for the assessment of performance. With the help of portfolios, learning is assessed not only through tests and quizzes but through multiple modes such as projects, pictures and photographs.

2. RESEARCH SIGNIIFICATION (ÇALIŞMANIN ÖNEMİ)

The use of portfolios in education started as an assessment approach, owing to some extent to post-modernism. In this era, the attitude towards knowledge and its nature changed from being seen as an absolute to being seen as relative. Such an epistemological change



resulted from a decision to focus on the knowing subject, rather than the known object (Arslan, 1996; Bredo, 2000). This attitude was translated into educational environments and programs through constructivism (Cobb, 1996; Richardson, 1997).

In the traditional subjective epistemology, knowledge is transferred as it does not change. According to this, the absolute and unchanging knowledge can be transferred from a resource (the teacher) and can be internalized by learners. According to subjective education, learning happens to the extent which the absolute knowledge is known, and assessment is related to how much of the absolute knowledge the learner has internalized. Therefore the emphasis is on the objective evaluation of the transferred knowledge and this is limited by what teachers teach.

On the other hand, in the new educational applications that emerged with constructivism, the emphasis is on the subjectivity and construction of knowledge, as opposed to its transfer (Jonassen, 1991; Richardson, 1997). Since meaning is constructed subjectively, the important points are how the basic notions are understood, the different points of view and individual processes in the construction of knowledge. Similarly, in such an assessment approach, the learning process of students, how they construct knowledge, cognitive processes and habits gain importance (Shavelson and Bakter, 1992). As absolute knowledge is not a possibility in such an understanding of assessment, the emphasis is on the basic notions, various points of view, and the internalization, construction and perception of knowledge, rather than its acquisition.

3. ELECTRONIC PORTFOLIOS (ELEKTRONİK PORTFOLYOLAR)

Recent advances in computer technologies have contributed to the traditional pen-and-paper portfolios by carrying them to the electronic environment. In addition to having all the advantages of traditional portfolios, electronic portfolios present a richer, fuller and more comprehensive picture of learner improvement. Stating that e-portfolios reflect a complete view of learning and improvement over time, Chang (2001) defines them as a computer-readable form of all artifacts.

With e-portfolios, the contextual dimension of work is presented more effectively and monitoring is made easier. Additionally, the process continually supports cooperation between teachers and students (Tezci and Dikici, 2002). Therefore it can be argued that e-portfolios allow for communication with learners in different ways.

Students can reflect their continuous development and change by supporting their portfolio documents with multimedia features such as pictures, graphics, sounds, films, animations and texts. This means that students are able to materialize educational development in a more portable format (Pullman, 2002:152). Naturally this is not a random collection of learner work (Barrett, 2000). On the contrary, e-portfolio presumes that students will purposefully select pieces of work and bring them together by using different tools in electronic media (Buzzard and Kaunitz, 2001). This eases the portfolio process and gives learners more options (Tezci and Demirli, 2004).

However, the process of the traditional and technology enhanced portfolios needs to be distinguished from each other. The main differences are that e-portfolios support the technological skills of learners and their life-long learning; they help artifacts to be stored and carried more easily; and they reduce the need for portfolio storing space. Last but not least, the design of an e-portfolio can be adjusted as new technological options become available.



4. TYPES OF PORTFOLIO (PORTOLYO TÜRLERİ)

The literature cites different types of portfolios depending on their aims and uses (Danielson and Abrutyn, 1997; Rybacki and Lattimore, 1999; Rolheiser, Bower and Stevahn, 2000; Bers, 2001; Briscoe and Wells, 2002). However different these types may look in theory, they are all related in practice. These types may be used together to fulfill different aims. For this reason, it is important for educators to clearly state their aims in using portfolios, choose the right type of portfolio and involve the learners as much as possible.

The next section will center on three different types of portfolios mentioned in the literature. This categorization is not based on the teaching of a specific field or subject; rather, it provides an overview of different portfolio types.

4.1. Business, Presentation and Evaluative Portfolios

Portfolios are classified according to the purposes they serve. Such a categorization commonly leads to three different types of portfolios, known as business portfolios, presentation portfolios and evaluative portfolios (Danielson and Abrutyn, 1997:2-8).

Business Portfolios: These are used to reflect learner improvement within a process. They are called business portfolios as they store all pieces of work created within the process. However, these portfolios are not aimless collections of information because they involve a controlled selection process which is not limited to learners' best work. The works completed are used for continuous assessment and future portfolio presentation. These portfolios are also used to identify student needs.

In general, business portfolios are structured within the framework of a particular content area. Therefore, collecting evidence of learner success may inform the future direction that instruction should take.

Presentation Portfolios: These portfolios include learners' best work. They aim to reflect the highest level of learner accomplishment. They thus contain the pieces of work that document learner success within the process. Presentation portfolios may be continued for longer than just a school year and document learner success at school, at home and at the workplace. A presentation portfolio may include written documents, video recordings, audio recordings, projects and so on. Whatever it is that learners wish to portray about themselves, they are free to make choices for their portfolio to reflect these.

Evaluative Portfolios: The major aim of these is to document learners' attainments. In this case, the contents of the instructional program determine the contents of the portfolio as well. For example, if the instructional program aims to teach writing skills, learners can put into their portfolios samples of articles, diaries, short stories, letters and similar other written texts to illustrate the writing skills they have acquired.

4.2. Documentation, Process and Showcase Portfolios

Another common categorization of portfolio types is: Documentation Portfolios, Process Portfolios and Showcase Portfolios (Prince George's Country Public Schools, 2004). Despite different names, these types of portfolios are very similar to the ones mentioned above.

Documentation Portfolios: Also known as business portfolio, this type contains reflections on learner attainments and those pieces of work that document learner success over time. This may include any piece of work from aimless activities to drafts or complete pieces.



Such a collection becomes meaningful when selection is made depending on certain educational experiences and objectives. Naturally, these pieces may show both learner strengths and weaknesses.

Process Portfolios: These portfolios include all stages of learning processes and are especially useful in documenting learners' entire learning processes. They aim to reflect how learners' particular knowledge and skills are incorporated from basic to advanced management. In other words, Process Portfolios emphasize learners' learning processes, the incorporation of their daily thoughts into education and the relationships between the different forms of their cognitive processes.

Showcase Portfolios: For these portfolios, the output of the instructional program is the key. They contain learners' best work so that learner selections and reflections can be evaluated against program outputs. Learners and teachers together decide what should go into a showcase portfolio. It only includes complete pieces of work including elements such as photographs or audio-visual recordings. Accompanying these may be learner analyses and reflections about their selection and decision-making processes.

4.3. Best Work Portfolios and Developmental Portfolios

In addition to the categorizations mentioned above, two other categories exist, which are known as best work portfolios and developmental portfolios (Rolheiser, Bower and Stevahn, 2000:4-5).

Best Work Portfolios: These portfolios include the evidence of learners' best and outstanding work. They are also known as presentation or showcase portfolios. They contain not only the best pieces of work themselves, but the processes that lie behind them. Here, learners can choose evidence of their own best effort and high accomplishments, and at the same time explain what makes them think that way.

Developmental Portfolios: These portfolios present individual development over time. Such development may be in academic or cognitive skills, content knowledge or another area. At the same time, it is important that there is a direct relationship between each focus area and the pre-specified educational objectives. Developmental portfolios may also be completed to underscore learners' best work. This helps learners identify targets and evaluate their own success.

5. THE STAGES OF THE PORTFOLIO DEVELOPMENT PROCESS (PORTFOLYO GELİŞTİRME SÜRECİNİN AŞAMALARI)

Portfolios may be seen as a combination of two components: process and product (Rolheiser, Bower and Stevahn, 2000:4). The portfolio development process is at least as important as the resulting portfolio itself. To benefit fully from the portfolio process, the relationship between product and process needs to be very clear. The results obtained by using portfolios in education are in direct proportion to a successful portfolio development process.

The portfolio development process has four main stages. Some of these stages are more important in some portfolio types when compared to others. However, each stage is existent in all portfolio types, albeit to varying degrees. Danielson and Abrutyn (1997: 10) list these stages as collection, selection, reflection and presentation.

Collection: The first step in developing a portfolio is to collect various pieces of learner work. This stage needs to be planned carefully by teachers; otherwise learners will end up collecting too many artifacts. Teachers need to give learners a place and an appropriate amount of time to collect their work, and also provide them with an adaptation period so they can develop their portfolios.



This is especially important because the portfolio process is very different to other traditional methods. In traditional classrooms, teachers assign work and learners complete this work in a way that is favorable to the teacher. In return, teachers correct learner pieces, provide feedback and return them. This is not the most productive way to learn because learners do not generally keep teacher feedback or spend as much time on understanding this feedback as the teacher did writing it. Instead, learners need to become aware of how much more they can gain by keeping their pieces of work and revisiting them from time to time.

The collection stage starts with the identification of the aim. The aim should provide information about the outcomes of the collection stage and the type of portfolio. Following this, documents in line with the aim and type are collected. It may not be best to collect all learner work during this process. To facilitate this process, teachers can occasionally distribute worksheets or instructions containing exercises to apply selection skills and order the pieces of work. The collection stage ends when learners have enough samples and documents.

Selection: The second stage of the portfolio development process, selection, involves learner -and sometimes teacher- efforts to make final selections among collected work. For instance, learners choose their best work for a presentation portfolio to document their learning. These independent learner selections are important as they reflect learner perceptions of best work.

Selection for any type of portfolio involves a combination of instruction and assessment. To illustrate, teachers should define writing skills clearly through criteria for both instruction and assessment purposes. When these criteria are used for selection, the end result is that learning elements are explained in a different way.

The number of selections to be included in a portfolio depends on the type of portfolio. As a general rule, although learners are free in making their own selections, teachers may specify the lower and upper limits for the number of selections. These pieces of work should then be subjected to a rigorous selection process; however they should provide an adequate number of samples to document learner improvement.

Reflection: Although this is the third stage of portfolio development, it is at the same time an indispensable part of selection process. The reflection process helps the development of self-awareness in learners. The reflection process has been divided into four sub-stages by Darling (2001:113-117): the first response to the portfolio task, structural and stylistic approach to form meaning, forming a bridge with the theme for discourse, and deciding on presentation for final products.

Correcting student work in the classroom is both difficult and time-consuming for teachers. On the learners' part, they cannot make full use of teacher comments. However, an instructional environment with the portfolio process helps these issues by enabling teachers to offer various special solutions to learner problems. This also allows for a direct relationship between the instruction and personal student learning. Naturally, a positive class atmosphere is important for the effective evaluation of learners' reflective pieces.

Teachers may need to develop certain activities for an effective reflection process. By engaging students in a cooperative learning environment, teachers may help the further improvement of the comments obtained through reflection. To materialize this, it is crucial to have an environment where students can express themselves freely. Teachers can additionally give students extra tasks within the



instructional program and set a special timetable and deadlines for these tasks.

Presentation: This is the final stage in the portfolio development process. It requires students to decide on the content of their portfolios and its presentation in their collaborative groups. Teachers should guide students in this stage as well, perhaps through a portfolio review form or rubrics. Such documents would also help identify standards for the process and show its importance.

6. ASSESSMENT IN THE E-PORTFOLIO PROCESS (E-PORTFOLYO SÜRECİNDE DEĞERLENDİRME)

Assessment is an important component of teaching and learning processes, used in the evaluation of instructional programs and student performance alike. In other words assessment can be defined as a way to confirm student learning (Bintz, 1991:308) with the aim of judging the effectiveness of the instructional program (Yılmaz, 1997:25). This brings to mind the age-old question "How do we decide a student's learning and grades?" On the other hand, the questions "What should our assessment approach be?" and "Do we need new assessment approaches?" continuously inspire new answers depending on the changes and innovations in education.

Therefore approaches to assessment have always been questioned and alternative approaches have always been sought after. Anderson (1998:5) argues that the emergence of new assessment approaches is due to the ever-changing beliefs about how learning happens, the concern for objective assessment and the increasing differences between students.

Another reason why alternative approaches emerge is that assessment becomes increasingly more authentic. This happens because teachers become aware that knowing something is not the same as being able to apply it in real life (Tekin, 2000:221). This is why alternative assessment methods attempt at supporting student learning and offering them opportunities to amend their weaknesses.

Another pressing reason for alternative methods of assessment is the need for assessing students' decision making skills. This is important as decision making is an indicator of individuals' awareness of knowing how to be successful. Using portfolios may therefore advance students attainments through a process of making appropriate choices.

Proponents of performance assessment believe that traditional ways of assessment are insufficient in reflecting student accomplishments and emphasize what the teacher expects rather than what the student has learned. Additionally the failure of traditional methods to emulate real-life situations and their tendency to be perceived as an isolated activity from instruction also invite criticism (Tezci, 2004). In contrast, performance assessment contends that learning is a part of life and it concerns itself with what, how and why the student learns (Linn, Baker and Dunbar, 1991; Herman, Aschbacher and Winters, 1992). These make performance assessment to be known also as authentic or direct assessment. These names reflect the nature of the approach as it emphasizes the skills needed for the solution of students' real life problems. While students are encouraged to implement their skills and knowledge in real life, they are also taught how to think critically (Blatter and Frazier, 2002). At the same time, teachers can evaluate their problem solving skills effectively (O'Neil, 1999).

Another important contribution that performance assessment makes towards maximizing the benefits of instruction is the emphasis it places on continuous development. The aim of assessment is not only to



categorize students as successful and not successful but help their improvement in line with their aims. This also helps them adjust their learning objectives, evaluate themselves, become aware of their strengths and weaknesses and thus amend these weaknesses (Wiggins, 1990).

The differences between performance assessment and traditional assessment are caused basically by the changes that occur in educational approaches. It can thus be argued that the main difference is the extensive support performance assessment gives to integrated learning rather than identifying student skills in an artificial environment.

Put in a different way, while traditional tests are built on the idea of exposing what students do not know, performance assessment includes the evaluation of learning outcomes. The authentic contexts of performance assessment offer students real life problems. In addition to this, the skills of self-evaluation, creativity and responsibility are emphasized (Slater, Ryan and Samson, 1997:255-256).

Thus it is obvious that performance assessment differs from traditional assessment in their aims and their assessment criteria, and in their implementation and outcomes. This is not surprising given the different outlooks of the two approaches on knowledge and learning, the links they assume between instructional processes and products, their emphases in assessment, aims and control mechanisms. Table 1 summarizes the differences between the two approaches.

Table 1. A Comparison of traditional and performance assessment
(Tablo 1. Geleneksel ve performans değerlendirmenin karşılaştırılması)

	Traditional Assessment	Performance Assessment
Knowledge	One common meaning	Multiple meanings
Learning	A passive process	An active process
Process/Product	Separate	Together
Focus	Fragmented knowledge	Research
Aim	Reporting learning	Facilitating learning
Assessment	Objective and independent of values	Subjective and dependent on values
Power	Hierarchical	Horizontal
Individualism versus Cooperation	Learning is individual.	Learning is cooperative.

Resource: Anderson, R.S. (1998). Why Talk About Different Ways to Grade? The Shift from Traditional Assessment to Alternative Assessment. *New Directions for Teaching and Learning*. Summer 1998. No:74. 5-16.

In order to better illustrate these differences, Anderson (1998) explained each of the components above.

Knowledge: The traditional approach assumes that knowledge is one and absolute, and that it carries the same meaning for everyone regardless of time and place. Performance assessment, on the other hand, claims that knowledge has multiple meanings and that individuals construct their own meanings depending on their relative contexts.

Learning: The traditional approach views learning as a passive process. It views learners as blank slate with no previous knowledge or experiences. Therefore the role given to instruction is to transmit the truth and knowledge to students. Instead of teaching how to learn, this approach spoon feeds students. In the performance approach, learning is natural, necessary and incorporated into all walks of life. It cannot be transmitted from one to another. Instead, students need to be actively guided to construct their own meaning. In other words, products of learning are derived from reproduced knowledge.

Process/Product: The traditional approach separates the process from the product. The product usually consists of the tests given at



the end of instruction. These final products are indicators of student learning. How and why students learn is not important. However, in performance assessment, the process is at least as important as the product. That is why it is important to know why and how students learn.

Focus: In the traditional approach, the emphasis is on a hierarchical presentation of fragments of knowledge consisting of lower-order thinking skills. Students are expected to have mastered the skills of one stage before proceeding to the next one. In performance assessment, the focus needs to be on research and skills needed to solve real-life problems.

Aim: Assessment in the traditional approach is equivalent to control. This is done by categorizing a student as on who "knows" or "does not know". However, in performance approach, assessment is seen as a tool to support and advance learning. Tests provide students with feedback about their learning and how to improve it. This approach therefore does not involve strict categorizations of students.

Assessment: The traditional approach believes that values are absolute and thus can be tested objectively. When making instructional and assessment decisions, the values these represent are not usually considered. In the performance approach, values are given priority in making these decisions because the system of values is not used solely to make decisions about what the answers to the questions should be, but also what question to ask. This becomes especially important when values are emphasized in instruction (Schultz, Durst and Roemer, 1997:131).

Power: The traditional approach gives the teacher the power to make decisions about instruction and assessment. Students are not involved in deciding what is important for their own learning and how they can learn best. In performance assessment, though, there is equal power distribution in making these decisions. Thus the process of instructional decision-making becomes more democratic.

Individualism versus Cooperation: The traditional approach is focused on individual success. Students are generally expected to complete the tasks without help from others. Such an understanding promotes competition. In contrast, performance approach sees students and teachers as cooperative learners. Students can thus form strong bonds with other students and the teacher, consult each other freely and hold discussions. Such a social environment gives students a cognitive responsibility to materialize learning.

An alternative performance approach to assessment is portfolio assessment. In other words, portfolio assessment takes into account student performance. It particularly opposes the limitations of commonly used multiple choice tests in reflecting student learning and accomplishments. At the same time, it favors the evaluation of productive performance rather than choosing a pre-specified option.

In the portfolio process, students have the opportunity to choose their own learning outcomes. As portfolios are not constructed in one sitting, they include more than just one or two tasks and give the students the opportunity to put into practice theoretical information. Students at the same time actively participate in the identification of content and selection criteria. By emphasizing the active participation of students, their interest and learning outcomes are also valued (Tezci and Dikici, 2002; Chang, 2001).

The opportunity for self-evaluation also contributes to student learning. Through this, students become aware of the quality of the pieces of work they have produced. This increases their self-esteem and confidence. The contributions of self-evaluation to student success can be exemplified as follows:

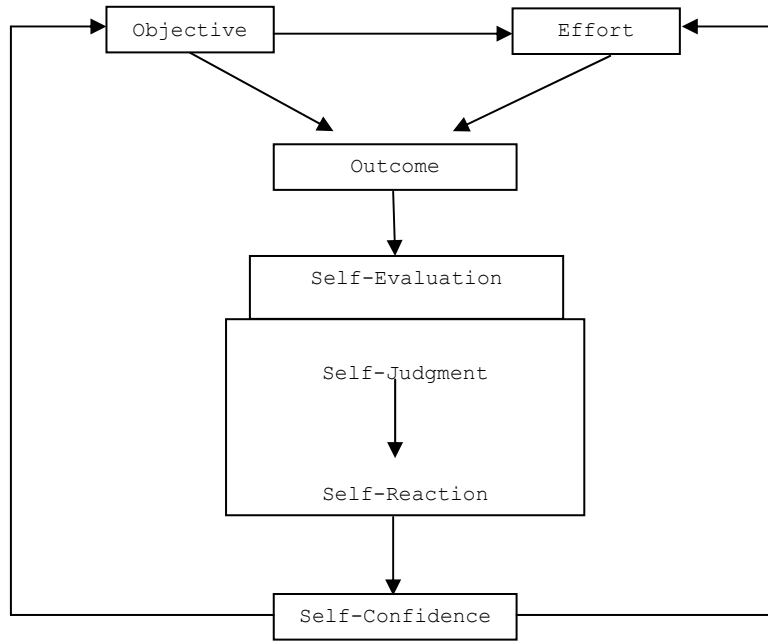


Figure 1. The Contribution of Self-Evaluation to Self-Confidence
(Şekil 1. Kendini değerlendirmenin kendine güvene katkısı)

Resource: Rolhesier, C., Bower, B. and Stevahn, L. (2000). The Portfolio Organizer: Succeeding with Portfolios in Your Classroom. Alexandria, Virginia. USA: Association for Supervision and Curriculum Development (p:77).

When students are expected to evaluate their own performance, they set themselves high targets and show more individual effort. The combination of objectives and effort gives birth to products (accomplishment). Accomplishment is judged by students through answering the question 'Have I met my aims?' What results from such self-judgment is self-reaction or answering the question 'How do I feel about this?'. What brings self-confidence is a combination of targets, efforts, products (accomplishment), self-judgment and self-reaction. Portfolio assessment thus allows students to evaluate themselves in a more holistic way.

At this point, the main components of the portfolio assessment process need to be further explained by citing studies from the literature (Barton and Collins, 1997; Aschbacher, Koency and Schacter, 1995; Martin-Kniep, 1999):

Aims: The aims that the portfolio assessment will serve need to be specified at the very beginning. Aims are very important for the construction of the portfolio and impact the entire process. They are used to specify student needs, show improvement over time, identify success levels, and see the efficiency of the program and instruction. Naturally, they also specify the limits of the contents of the documents to be collected.

Aims are negotiated with students before they are shaped into their final forms. These negotiations inform students about self-judgment. They therefore assume responsibility for their own learning (Barton and Collins, 1997) and obtain clues about the technologies to be used in the portfolio (Barrett, 2000a). Students discuss aims between themselves and with the teacher both simultaneously and non-simultaneously. Today's technological advances enable students to hold these discussions over electronic chat programs, bulletin boards or e-mail.



Aims also influence the type of portfolio to be used. They act as a guide in portfolio content selection and evaluation. They are general statements which help students and the teacher to better understand what they are supposed to do. They also specify whether evaluation will be based on specific criteria or national standards, or whether process or product will be more important (Tezci, 2004).

In conclusion, aims help students understand the portfolio purposes, what they are supposed to do, and how their accomplishment will be documented. For these reasons, it is of paramount importance that aims be stated before the portfolio process starts.

Evaluation Criteria: Once aims have been clearly specified, criteria for success need to be discussed. The standards required to materialize the aims need to be taken into account, and thus standards for excellence need to be specified. These standards form the basis of evaluation criteria and help distinguish excellent work from others (those completed with less effort or those less successful).

In specifying evaluation criteria, negotiations take place among students and between students and the teacher. This will make students responsible for, and aware of, their own development and learning. They will know what is expected from them and how they will be assessed, and they will also be able to evaluate their own success (Aschbacher et al., 1995; Danielson and Abrutyn, 1997).

Aschbacher et al. (1995) state that three factors are crucial in specifying evaluation criteria. These are as follows;

1. Dimensions: The characteristics of excellence in content are specified.
2. Scale: Differences to be identified are specified. Decisions are made about issues such as using letter grades such as 'A, B, C' versus using analytical point grades such as 'Over 100 possible points, 10 for writing, 20 for organization, etc.
3. Performance standards: Decisions are made about what "good enough" means. Requirements, characteristics or points needed to obtain an "A" level are specified.

On the other hand, the presentation of standards is particularly important. Questions such as "Will standards be based for benchmarking or rubrics?" or "Will the criteria be analytical or holistic?" need to be answered. Generally, portfolio assessment favors holistic criteria as they make the assessors' job easier and provide a more general outlook on accomplishment. Such decisions need to be made in this stage.

After deciding on evaluation criteria, they need to be written down clearly so they can be used reliably and independently from subjectivity. The following may be done to ensure this:

1. Identify the basic components of desired student performance,
2. Turn these components into measurable evaluation items,
3. Develop definitions of performance levels for each item (Herman, Gearhart and Baker, 1994; Custer, 1996; Moskal, 2000).

While developing the criteria, point allocation for each component needs to be specified for the sake of measurable evaluation (Tezci and Dikici, 2002). For instance, point allocation may increase in two-fold from 0 to 10.

When portfolios are assessed electronically, evaluation criteria specify not only the portfolio contents but also the storing options and software to be used. For instance, an interview with an expert or a trip to a historical site may require using audio-visual documents. This, in turn, may necessitate the storing of files on a CD instead of a simple floppy diskette, or the use of some compression programs if file sizes are too big (Hartnel-Young and Morriss, 1999). As can be seen, evaluation criteria would guide the content selection, its



presentation and the programs and hardware to be used. These may be presented to students through web pages which guide students throughout the entire process.

Evidence and content: How much data is needed to document accomplishment? What type of evidence is adequate and how frequently should it be collected? Questions like these help decisions about evidence. Parallelism between products, aims of the instructional program and the portfolio process is important.

As has been mentioned earlier portfolio evaluation may focus either on process or products. If a process approach is to be used, the evidence should be about the development of students throughout the process. If evaluation is product-based, portfolios should include the final products of students.

The use of evidence guides decisions about the portfolio content as there is a close connection between supporting or source information and contents. Naturally, contents selected in line with the aims should reflect how students perceive high level ideas (Aschbacher et al., 1995) because content includes all stages of attainments and reflections throughout the learning process.

Contents may include elements such as photographs, pictures, audio-visual recordings, text, notes, reports, references, interviews, discussion minutes, and so on. When portfolios are constructed cooperatively, students should be allowed to add their individual pieces to the common content. Multimedia features would be useful in materializing this.

The level of contents should be specified by standards. If the standards focus solely on students' technology skills, the important thing is the structure of the tools and programs, and the way these are designed and used by students. When standards focus on subject area and the use of technology, the assessor needs to pay attention to the best choice and use of technology for that content (Barrett, 2000; Baron, 1996).

Storing: How students will store their portfolios is important. Decisions should be made as to whether the portfolio will be a file containing pen-and-paper pieces, whether it will be kept in an electronic format such as a CD or DVD, or on a web server.

The storage decisions depend on the type of portfolio. When student improvement and processes are assessed through a portfolio, storage needs to be chronological and in the same format that the portfolio was constructed. When the products are assessed, only the selected pieces are stored and drafts become irrelevant.

The advanced information technologies of our day have made electronic storage of data easy and popular. Diskettes, high capacity storage environments and web servers are used for this purpose. Additionally, content documents may be prepared in the electronic format by using the technological opportunities within the scope of local, national or international networks. These increase the cooperation between students and allow them to gain first-hand experience of technology, content area knowledge and design skills (Baron, 1996).

However, problems may emerge when storing documents electronically and yet making them accessible as part of a portfolio. To illustrate, while diskettes may be used to prepare some portfolios, others with big files such as video recordings necessitate other solutions. In such cases, one may use compression technologies or a high capacity storage tool such as a DVD or a CD. Therefore it is important that all storage tools and programs, and the way they are used be identified.



Presentations: After completing the documents, it is important to decide on the presentation of these artifacts. Meeus (2000) defines portfolios as a story of students' mastery. In order to be able to document their mastery, students need to structure the archive and reflections of their materials. Therefore the following may be used when designing portfolio presentation (Ivers and Barron, 1998):

A cover letter at the beginning: Students write a cover letter introducing their work and aims. Any reader needs to be able, after reading this cover letter, to answer the questions 'Why was this portfolio created?' and 'What purpose does it serve?'

Portfolio documents: This stage is concerned with limitations, aesthetics and style. The process or product orientation of the portfolio is important in deciding these. In process portfolios, all work needs to be presented chronologically and the relationships between pieces needs to be clarified. For example, in an e-portfolio of this type, each piece of work may be presented in a separate folder, chronologically from the earliest drafts to final versions.

Conclusion: This includes students' self-evaluation and reflective pieces, which present the meanings constructed by individual students during the instructional process. Thus this section shows the students' knowledge construction and change processes.

As a result, the presentation of a portfolio is a reflection of the growth level of students. It is dictated by the content, dimensions, design and evaluation criteria of the portfolio. Therefore students need to consider the interaction between these when presenting their portfolios.

7. THE CONTRIBUTIONS AND LIMITATIONS OF PORTFOLIOS (PORTFOLYOLARIN KATKILARI VE SINIRLILIKLARI)

The portfolio process has been widely favored and accepted as it leads to quality instruction and large-scale assessment. The justification for their use in education has been given below (Paulson et al., 1991; Danielson and Abrutyn, 1997; Darling-Hammond and Snyder, 2000; Martin-Kniep, 2000; Richardson, 2000; Chang, 2001):

- The portfolio process meets the exact aims of education. It enables students to put theoretical information into practice.
- It emphasizes student growth and offers activities that support development.
- It allows students to adjust their own learning aims within the general aims of the instructional program or course.
- It gives students an opportunity to document their efforts within the learning process. These can then be used for assessment purposes.
- It reflects student performances or work related to their own learning. The entirety of these performances or pieces of work contains processes related to cognitive and skill-based progress. These are a reflection of learning outcomes.
- Students can document the evidence for their self-judgment. Constructive self-judgment enhances self-confidence.
- Students can make choices about what to include in their portfolios with the teacher's guidance. This enables them to develop a sense of ownership related to the portfolios. The portfolio process thus teaches responsibility to students.
- The process helps students to document the learning outcomes that they feel are important in their own learning. They can reflect what they have learned genuinely, rather than what



teachers expect. This helps teachers see student growth more clearly.

- Students can evaluate their own progress. Identifying their own strengths and weaknesses at the same time enable students to develop an eye for high quality work.
- Students learn how to cooperate with other students and become more sociable.
- The process is not a threatening one as it emphasizes continuous development and change. In other words, the process eliminates test anxiety and other negative, threatening feelings. Its aim is not to differentiate between success and failure but provide feedback to support development.
- Communication within the classroom is supported. The relationship between students and learners is not hierarchical but collective.
- The process serves the aims of both students and teachers. While students obtain more information about their own development, teachers make a healthy evaluation of student progress and accomplishment.
- Authentic use of knowledge is supported. Student learning is assessed not only through teachers' tests and quizzes but through multiple modes such as projects, pictures, photographs.
- The process enables students to understand more about their own learning interests and how to build self-confidence. This encourages and motivates students to learn more (Slater, Ryan and Samson, 1997:270).
- Students can be evaluated both quantitatively and qualitatively (Johnson, McDaniel and Willeke, 2000:68).
- The process allows teachers to evaluate not only student growth but also their own instructional techniques and programs. Such critical information helps teachers evaluate and re-adjust their classes (Shay, 1997:36).
- Students gain a wide perspective into the subject matter. The process also encourages them to see and develop different points of view.
- The process also allows students to see how they construct knowledge, view the subject matter and deal with concepts.
- However, the portfolio process also has its limitations. For instance, teachers spend more time and effort when using portfolios for student assessment. At the same time, they strive to find appropriate educational tasks, organize portfolios and prepare for instruction, which may amount to more stress on the teachers' part. With fatigue, teachers' motivation may decrease. Another disadvantage of portfolios may be the difficulty of marking them (Koh and Koh, 1998:300). Other drawbacks have been listed below (Song and August, 2002):
- More time is needed for instruction and assessment and other tasks such as organizing tasks and marking portfolios.
- Some readjustments are needed in classroom instruction and organizing learning activities.
- Extra effort is needed for storing and structuring portfolios whereas in traditional instruction, materials are generally not the responsibility of teachers.
- Assessing student portfolios may cause difficulties in developing specific and feasible marking criteria. Assessment may also be complicated and time-consuming



- Teachers may need to make an extra effort to reduce student, colleague and administrator anxieties from the beginning through to the end of the process.

8. CONCLUSION (SONUÇ)

The general aim of educators to develop skilful individuals is particularly important in our fast-changing world. However, in seeking to offer an optimum educational environment, institutions need to strengthen and extend their existing educational systems. The e-portfolio process has a unifying role in developing students' information and technological skills and enabling them to put theoretical knowledge to everyday use. Additionally, the process enhances students' academic and vocational skills, and equips them with problem-solving, creative, reflective and critical thinking skills. Portfolios enable students to identify their own strengths and weaknesses over time and evaluate their development effectively and from multiple perspectives. It also facilitates the evaluation of instructional programs. However, appropriate application of the e-portfolio process is necessary to ensure the flow of benefits to learners and assessors, and to counter the perceived drawbacks.

NOTICE: "An Overview of The Electronic Portfolio Process" Paper Presented at International Conference on E-Portfolio Process in Vocational Education; Present and Future, May, 2007, Bucharest-Romania.

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