

E-PORTFOLIO APPLICATIONS IN EDUCATION

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Abstract: Continuous developments in education technologies are accompanied by diversity of methods and applications in education. The process starting with computer-assisted learning is now in a different dimension via increasing internet possibilities. Another important factor in this issue is that learnercentred approach has been accepted widely and become widespread. Transition from portfolio to eportfolio is one of the current examples to be given about changing process in education technology. The approach which places learners and assignments at the centre has turned into a “learner work file” or in other words “portfolio” format through developing. Portfolio is a big assignment and study collection where a learner collects his studies. The concept of “e-portfolio” has replaced portfolio as information and communication technologies have become main components in education. In this study, information will be given about types of e-portfolio and using them in education.

Key words: Portfolio, e-portfolio, education technologies, electronic work file, learner work file.

Introduction

While information societies have the every kind of power today, revealing a profile of thinking and producing individual primarily depends on an effective education system. The failure of the students who learn superficially, memorize and are listeners in the real life conditions is a known fact. In addition, it is not expected to realize the transformation and production of information in a society including these individuals. Training students who can relate the new information and the skills to the old ones, rely on themselves and are participating, thinking, investigating is the indicator of an effective education. Effective education can be realized with the different approaches according to the technological developments, expectations, and the needs of the society. When considered from this point of view, learner-centered education is a significant approach accepted in the recent years. Because, learner-centered education is a very effective phenomenon for becoming an information society. In this approach, individual development, learning the learning and active participation of the students are basically taken into consideration. Also, prioritising the assignments and studies of the students are among the principles of this approach. Student-centered education; the education period for the individuals who have the skills of scientific thinking, have learnt to learn, productive, can reach the information and use it, have communication skills, have adopted universal values, use the technology effectively and have realized themselves is a reconstruction which will supply the participation of the students at every stage (M.E.B, 2003). As can be seen from the definition above, student not only learns and listens but also participates actively and takes responsibility. S/he learns via questioning and discovering. Also, s/he gains experience in both individual and group work. Furthermore, s/he can apply what s/he has learnt in the school environment to the real life conditions. Since the evaluation is realized according to the learning process, criteria and individual

development of the student, it has been much more objective and healthier in such an educational approach (<http://talimterbiye.mebnet/ogrenci%20merkezli%20egitim/ogrencimerkezliegretim.html>).

Information and communication technologies are one of the significant contributors of learner-centered education approach. Besides the traditional stationary, computers, datashow, portable memories and modems, iPods and tablets, and also with the technological tools like internet have started to be utilized. Especially, with the introduction of the internet to the education life, some educational tools have been replaced by the electronic versions. For example, the portfolio which is defined as a large collection of the student's homework and studies has been replaced with e-portfolio by the development of information and communication Technologies. E-portfolio is also known as "electronic business zone". Development in information and communication technologies, the increase of the numbers of users in these technologies, easily adaptation of the new generation to these technologies has facilitated the use of e-portfolio. E-portfolio that is foreseen to be used in the coming years as an indispensable part of the education has been used as both an education tool and evaluation material in many countries. With the development of infrastructure of the education technologies, the increase of portfolio applications will enable learner-centered education approach to improve.

The Importance and the Aim of the Study

In this study, the advantages and disadvantages of using an e- portfolio for the students are mentioned and explaining the concepts of portfolio and e-portfolio, the differences and similarities between them are demonstrated. Sample e-portfolios are presented as well as presenting the benefits of using e-portfolios in education. Thus, it was aimed to form a base for e-portfolio concept and explain that e-portfolios could be used in different format in education. In accordance with these aims, this study will be an important and a good resource for the special interest group.

Method of Research

For the information related to the use of portfolio which is the topic of the study in education, the national and international literature review was realized. The study was realized by compiling the obtained information from published and electronic resources.

What is E-Portfolio?

It is seen that the word portfolio comes etimolgically from the originally Latin words "portare" (to carry) and "folium" (paper,sheet) which came together as "portafaglio" in Italian and then it was formed as "portfolio" in English (OED, 2007). Portfolio is a collection or a personal archive which indicates the development process of the student by examining it from the very beginning in detail with the outcomes. Arter and Spandel (1991) define the portfolio as the reflection of the students' studies with the aim of presenting their success in one or more areas. According to another definition, portfolio allows students to evaluate their own work, provides students to see their personal development and creates a basis for evaluating their performances

individually (Grace, 1992). Collins (1991) defines this issue with a pedagogical approach that portfolio is learner-centered and enables the student to indicate his/her individual efforts, achievements, developments in one or more learning intervals (Gun & Peddie, 2008). According to another definition, portfolio is a personal collection in which the person depicts and documents his/her successes and learnings (<http://www.wikipedia.com>, 2007). At first, while the studies used to be realized on papers were archived in general, by the development of the technology, they started to keep these studies in electronic environments such as tapes, floppy disks, CDs, DVDs and removable disks. This type of portfolio which is more effective, striking and appealing with the audio and video materials is called as electronic portfolio (e-portfolio). Even though it is called as ‘Digital portfolio’ or ‘Digital Development (product) File’, generally the term e-portfolio is preferred. According to portfolio expert David Niguidula, e-portfolio is software which helps students to present their mastery and skills in a richer way.

As Özyenginer (2006) quoted, NLII (2003) defined the portfolio as an authentic and reliable collection obtained from development of an individual and a group over time in accordance with special purposes designing with the aim of presentation to one or more than one person and reflection.

“_ the question ‘What does ‘e- prefix’ add to the term of portfolio?’” can be answered by using the results of comparison portfolios and e-portfolios. Accordingly e-portfolio has extra features such as;

- a wider context
- serving different groups (individual, student associations, regions and cities, social communities)
- archiving
- link building /thinking
- cooperation
- reorganization
- publication

A linear organization in which the works and the targets are listed done by one is available in the traditional portfolio (Figure. 1).

Figure1. Linear structures of traditional bag development file (Heath, 2005).

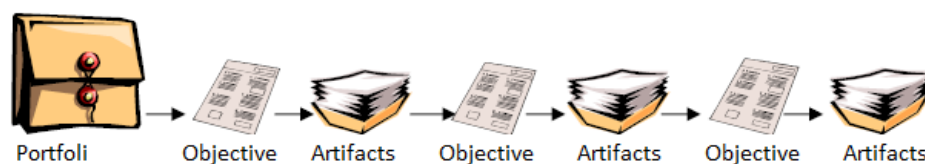
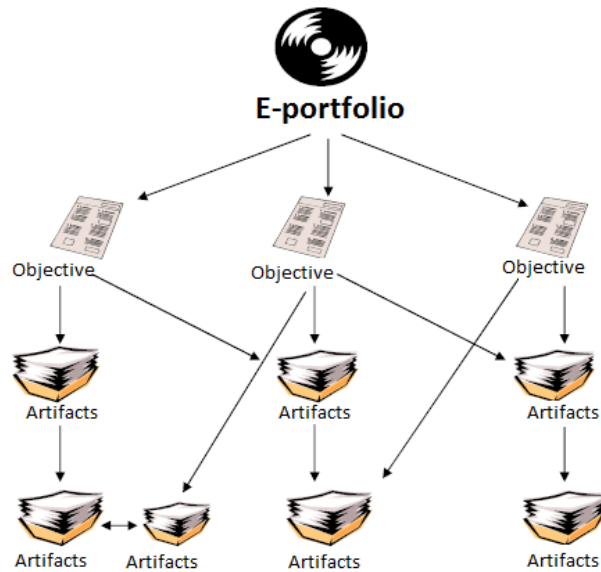


Figure 2. Multifaceted Structure which can establish complex and multiple connections of Electronic (Digital) Development File (Heath, 2005).



There is a hierarchical structure that allows multiple and complex relations in e-portfolio (Figure 2).

As Çayırıcı (2007) quoted from Downing (2000) and Chang (2001), similarities and dissimilarities between portfolio and e-portfolio are like in the Table 1.

Table1. The similarities and dissimilarities between portfolio and e-portfolio

Similarities	Dissimilarities	
<ul style="list-style-type: none"> -Using goals -Process operation -Security problems -Learner-centered -Exchanging ideas -Continuously updating -Reflective thinking -Multimedia -Presentation of the studies, reflective learning, reflection and sampling -Ensuring the transition to life-long learning -Emphasizing the successful results 	Media-Communication Environments	
	Portfolio	E-Portfolio

According to Table 1, portfolio and e-portfolio show similarities at some points and show dissimilarities at some other points. In spite of similarities and dissimilarities, all portfolios serve for the common aims. Continuously developing information and communication technologies, easily obtaining them, and meeting of new generation with these technologies as soon as they are born cause the portfolio to become highlighted. It has been no longer difficult to use e-portfolio in the education of such a generation that uses technology properly.

Use of E-Portfolio in Education

“Why should e-portfolio be used in education?” this question can be answered with the words of Anne Gilleran ‘People should introduce themselves digitally in a digital world’ can be an answer. EIFEL (European Institute for E-Learning) answers this question as ‘in an information economy, information workers need tools of personal information management (<http://www.eife-l.org>). Zeynep Kazan stated in her master thesis (2006) that Australian teachers with the network of Australian State Schools explained their aims at using development files in education (Demirli, 2007) as follows:

- Defining and evaluating the student as a learner
- Forming tasks and paralel structures considering learning goals
- Making students reflect what they have learnt
- Encouraging students to talk about what they have learnt
- Showing the students what, how and why they learn
- Providing students with help and information during the transition between levels.
- Developing evaluation techniques.

We can count many reasons for the use of e-portfolio in education besides the ones listed above. The main ones of these are storage/access, multi-media usage, computer usage skills and evaluation (Regis University Electronic Portfolio Project).

Storage/Access: Information in e-portfolio is stored in digital environments such as hard drives, server, and portable drives. This also means a very physical space. It offers the opportunity of storing the information full of folders in large volumes in asmall space. However, the required information can be accessed very quickly and easily thanks to simple tools to be added to the e-portfolio. The lost information can be regained easily and the new study of the student can be easily added to the e-portfolio.

Multi-media Usage: The paper-based portfolios both have low interaction and are not the efficient environments to show the various abilities of the students at the same time. In e-portfolio, the user can upload multi-media objects such as audio, images, animation, moving images to his/her new study so this makes his study more effective as well as allowing his/her abilities to present.

Computer Skills: While students are forming their e-portfolio contents, they can also improve the ability of using computers.

Evaluation: The study of the student is evaluated with the pre-determined standards and criteria in e-portfolio. This makes the student obliged to make a specific plan and continue his work in accordance with this way.

E-portfolio has been used developing since 1990s and become widespread depending on the developing technology. Many universities try this new education and evaluation approach and do academic studies on this topic. Kazan (2006) has listed the advantages and disadvantages of e-portfolio as follows.

Advantages

Electronic Development Files Strengthen the Active Learning: Learner-centered education and active learning occur when the students take their own learning responsibility and manage their own learning. Development files

also help students have goals relating to learning and examine these goals regularly and take their own responsibility.

Electronic Development Files motivate the Students: Knowing to present the studies they have done to the audience, students create their studies more carefully and thoughtfully. At the same time, accessing the previous studies, they can take steps more consciously evaluating themselves.

Electronic Development Files are Feedback Tools: The efficiency of learning goals forms a feedback system which allows the effectiveness of learning strategies and the clarity of information presentation. This gives feedback not only to students but also to teachers, school, parents, and other people allowing the information exchange between them.

Electronic Development Files are Evaluation Tools: They form a very effective method which reveals the students' studies and learning process can be measured in a determined way from the beginning to the end according to the target behaviors. Evaluation becomes a part of learning. They also allow the research elements, education and guidance activities, students' studies and products and at the same time studies done outside the education system to be evaluated more integrated and understandable.

Electronic Development Files allow the Students Studies to be Shared: The dynamic nature of internet pages and easily sharing feature of electronic media enable the student's studies to be shared with a wide audience in a meaningful way. Information and material sharing between the students who have done the similar studies will remove the workload and unnecessary repetition. Development files improve students' responsibility and autonomy sense. It is a better way of self-assessment, self-expression, monitoring and updating changes.

Electronic Development Files improve the Concept of Lifelong Learning: They also allow the students to review and renew his/her every information and skill accumulation during lifetime.

Electronic Development Files are Discussion Tools about the Acts of Students: Development files are concrete tools reflecting the communication between the teacher-student, parent-teacher, parent-student, and student-student.

Development Files allow complicated arrangements for the studies to be documented effectively: This is one of the unique features that electronic development files offer.

Thanks to links, whenever wanted, they can pass from one step to another or to retrospective studies within the process. Studying in this way becomes more creative and offers many other changes.

Electronic Development Files allow the Students to Recognize the Technology: They make the students who are far from the technology close it and improve the skills of using technology.

Electronic Development Files can store a Wide Variety of Data: Electronic development files have a very flexible structure. Students can create and store their own oral and written work, image files, artistic work, and animations via them. This expands the student's point of view as a learner and makes the learning more exciting.

Electronic Development Files are easily Accessible: They are stored in a way that students, teachers and parents can easily access every time. Furthermore, they can be accessed from all over the world and shared by everybody via internet.

Electronic Development Files take up less Space and are Portable: Student products can be stored and carried easily in the memories which have high capacity with the current technology but have a very small physical size.

It is easy to save, copy, back up, and update Electronic Development Files: Student file develops with the student himself/herself. In the direction of this development, the nature of electronic development files is convenient to add something and make changes easily in a short time.

Disadvantages

In addition to the advantages mentioned above, e-portfolios have some disadvantages as well. They can be cited as follows:

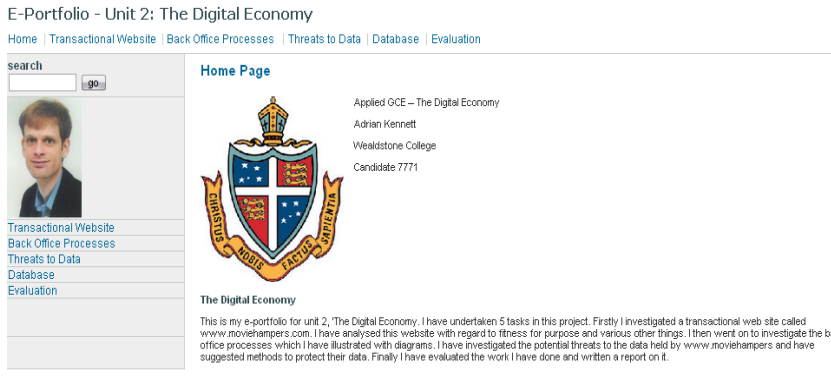
- Self-learning methodology that is available in the nature of the development files depends on the maturity and motivation of the student. For this reason it may not be convenient for the all types of learning styles.
- If the teachers do not direct the students enough about reflection and not support them, students cannot be sure about how reflections they will make and this can cause shyness.
- Development files consist of both process and product. If necessary time is not spent on the process of development files, the resulting product (outcome) will be poor. In this respect, development files are time-consuming.
- If the necessary software, hardware and devices are easily obtained to create electronic development files, it can be costly for a person to obtain them by himself/herself.
- Creating electronic development files requires technological knowledge and skills.
- Preparation process of electronic development files can sometimes be stressful and annoying.
- Creating electronic development files takes time.

Gülbahar and Köse (2006) list the advantages of using e-portfolios in education as follows:

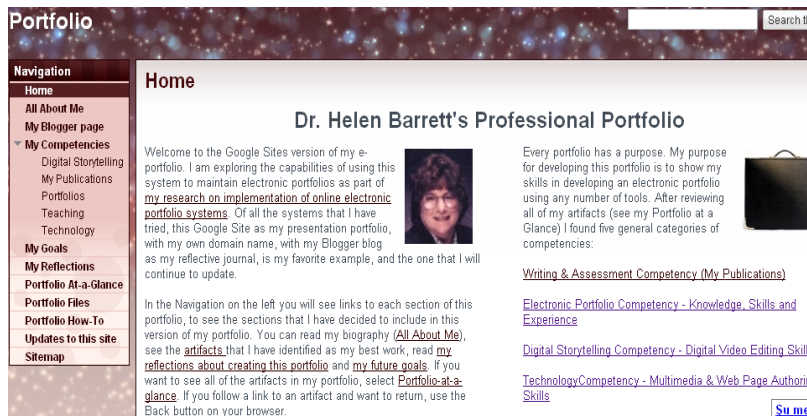
- The process of creating e-portfolios encourages revealing clearly all learning achievements and expectations of all individuals in school.
- Students are supported to reflect their learning levels during the process of creating their e-portfolios.
- Teachers can have an opportunity to give feedback relating the studies of students and direct them.
- E-portfolios allow students to indicate their personal developments by organizing learning materials.
- Students can use multi-media components according to their will so they can improve their information and communication skills.
- Students studies can be shared by teachers, friends and other related people comfortably and can have a shape to give feedback.

In spite of the disadvantages, studies regarding the use of e-portfolios in education still continue. In this context, it is possible to encounter with many amateur and professional samples of e- portfolios. Some examples of e-portfolios designed with educational aims are as follows:

Example 1. An e- portfolio examining digital economy prepared by Adrian Kenett.



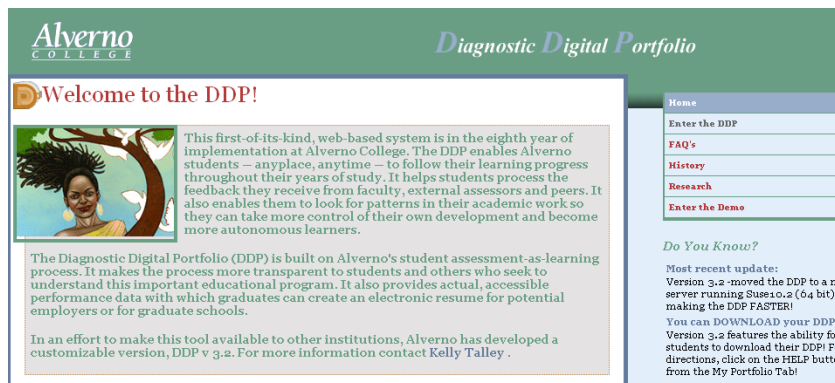
Example 2. Professional e-portfolio of Helen Barrett who is one of the pioneers of e-portfolio (<http://sites.helenbarrett.net/portfolio/>).



Example 3. Student interface of e-portfolio prepared for an academic study in Portugal (http://eportefolio.ese.ipsantarem.pt/repe_en/).



Example 4. A sample e-portfolio in which students can introduce their own studies prepared by Alverno College (<http://ddp.alverno.edu/>).



The number of these samples is increasing day by day. E-portfolios are getting more important in traditional, distant, and mobile education. Additionally, under the umbrella of lifelong learning, it is possible to encounter e-portfolio samples not just in schools but in workplaces and education centers. Besides the examples given above, e-portfolios can be examined in the following sites.

- http://eportefolio.ese.ipsantarem.pt/repe_en/
- www.efoliomn.com
- www.cte.jhu.edu/epweb
- www.vismt.org
- www.union.edu/PUBLIC/ECODEPT/kleind/conncoll/
- www.ddp.alverno.edu/
- www.iwebfolio.com
- <http://portfolios.education.wisc.edu/>
- www.stolaf.edu/depts/cis/web_portfolios.htm
- www.taskstream.com

Conclusion

Changing and developing by means of technology, the term portfolio which has been used since the 1970s has been called e-portfolio. It was previously used for promotional purpose, later on; it has taken place in many different areas. After the 1990s, having used for educational purposes, e-portfolio is actually an advanced homework archive. According to another definition, e-portfolio is a collection that offers and supports personal development. The student can monitor his/her personal development and see the development stages by using e-portfolio. S/he gains self-confidence and responsibility with individual and group work. Furthermore, s/he can adapt the information and skills s/he has learnt to his/her private and business life in the future. Students can improve their computer, internet and information literacy skills using e-portfolios as well. It is an important issue to create the content and configuration of e-portfolio platform to realize these returns. For this reason, a lot of software and hardware are needed. Although there are free software and hardware, a lot of commercial software and hardware are also available in this area. It is an important issue to create the

content of an e-portfolio as well as creating it. It will not be hard to motivate the student with a well-prepared e-portfolio and content. Additionally, motivation will bring success. E-portfolio, allowing the student to become in the center and introduce his/her products, will be a tool that many educators will prefer more in the coming years. Most probably, high school and higher school graduates will be using e-portfolios instead of their CVs in their job applications. For the next researches, different types of courses can be taught with e-portfolio support in different education levels. The effect of e-portfolio on student's academic success and skills can be explored. Additionally, it will be very easy to use e-portfolios for a new generation that lives closely with information and communication technologies. In order to encourage the students to use e-portfolios, all these applications should be graded. An understandable language should be used in interfaces and contents and interfaces should be created according to the design rules. If it is possible, the effectiveness of e-portfolios can be increased integrating in the social networks (blogs) that new generation commonly use such as Facebook, Twitter, etc.

E-portfolios can also be utilized in workplaces for different purposes besides education. For example, business products of workers such as projects, reports etc. can be archived with e-portfolios. It can be used to determine the incentives like promotions, premiums, upgrade. In addition to these, it can be used for documentation of the past experiences in business applications.

The knowledge and skills of the managers and educators regarding this issue should be primarily developed to use e-portfolio in education and business world effectively and desirably. They should be persuaded that using e-portfolios will be profitable for themselves, students, and employees. Designing, developing and introducing of e-portfolio and its content should be systematic and suitable for the criteria. In this way, a wide adoption and productively use of e-portfolio by the society will be possible.

P.S.: Some part of this study was presented as a paper named "E-portfolio Applications in Education" in the 'New Horizons in Education, 2010 Conference.

Resources

Çayırıcı, Ç. (2007) İlköğretim 7. Sınıfta Web Tabanlı Portfolyo Uygulaması: Fen Bilgisi ve Sosyal Bilgiler Örnekleri. Dokuz Eylül Üniversitesi, Eğitim Bilimleri Enstitüsü, Eğitim Bilimleri Ana Bilim Dalı, Eğitim Programları ve Öğretim Programı Yüksek Lisans Tezi, İzmir.

Demirli, C. (2007) *Elektronik Portfolyo Öğretim Sürecinin Öğrenen Tutumlarına ve Öğrenme Algılarına Etkisi*, Fırat Üniversitesi, Elazığ.

Grace, C. (1992) *The Portfolio and Its Use: Developmentally Appropriate Assessment of Young Children*. ERIC/EECE Publications — Digests. Pages 1-4.

Gunn, C.,& Peddie, R. (2008) *A Design-Based Research Approach For Eportfolio Initiatives*. University of Auckland, Melbourne, Australia.

Gülbahar, Y., Köse, F. (2006) *Öğretmen Adaylarının Değerlendirme için Elektronik Portfolyo Kullanımına İlişkin Görüşleri*. Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi, Yıl: 2006, Cilt: 39, Sayı: 2, 75-93.

Heath, M. (2005) *Are You Ready to Go Digital? The Pros and Cons of Electronic Portfolio Development*. Library Media Connection.

Kazan, Z. (2006) *Elektronik Gelişim Dosyasının Eğitim Amaçlı Tasarlanması ve Öğretmenlik Uygulaması Dersinde Kullanımının Değerlendirilmesi*. Ankara Üniversitesi, Ankara.

M.E.B. (2003) *Öğrenci Merkezli Eğitim Uygulama Modeli*. (Ankara: M.E.B.Yayımları).

OED (2007) *Online Etymology Dictionary*. Retrieved March 13, 2007 from the World Wide Web: <http://dictionary.reference.com/browse/portfolio>

Özyenginer, E. (2006) *Bilgisayar Dersinde Elektronik Portfolyo Yöntemi Kullanımı Üzerine Bir Çalışma*. Dokuz Eylül Üniversitesi, Eğitim Bilimleri Enstitüsü, Eğitim Bilimleri Ana Bilim Dalı, Eğitim Programları ve Öğretim Programı Yüksek Lisans Tezi, İzmir.

Regis University Electronic Portfolio Project, <http://academic.regis.edu/LAAP/eportfolio/index.html>

<http://talimterbiye.mebnet.orgrenci%20merkezli%20egitim/ogrencimerkezliegitim.html>

<http://www.wikipedia.com>

<http://www.eife-l.org>

<http://sites.helenbarrett.net/portfolio/>

http://eportfolio.ese.ipsantarem.pt/repe_en/

<http://ddp.alverno.edu/>