

# THE APPLICATION OF ELECTRONIC PORTOFOLIO ASSESMENT (APE) IN TEACHING

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## ABSTRACT

*Electronic Portfolio Assessment (APE) is a collection of works, activities, and processes in electronic form compiled by the user as a form of progress notes in an activity. The term E-Portfolio generally refers to an electronic device that supports the concept of goals, pedagogical. Implementation of E-Portfolio can actually be applied in teaching and learning in all subject areas. Because the E-portfolio has several advantages: (a) an electronic portfolio assessment can be more effective and efficient portfolios; (b) E-Portfolio is easily published; (c) E-Portfolio is the foundation that can be used to connect the whole curriculum; (d) E-Portfolio is generally designed to support Personal Development Planning and improving the skills of reflective practice and self-contained; (e) E-Portfolio is centered on the user; (f) E-Portfolio allows for discussion with a number of parties. This is study of literature in which the authors use several sources of current journals and books as references. By applying Electronic Portfolio Assessment are expected teachers and educators to improve the quality of teaching in the face of the challenges of the Asean Economic Community (AEC) in 2016.*

**Keywords:** *Electronic Portfolio Assessment (APE), Teaching*

## INTRODUCTION

In the collection of scientific works of students requires the existence of an evaluation tool to assess. Assessment of the portfolio is one alternative that can be used in the assessment of student practicum (Ramlawati, 2012). Compared to other forms of performance assessment, assessment of the portfolio has a privilege because it presents a document as evidence of the process and students' learning outcomes.

Traditional portfolio assessment has some drawbacks. The disadvantage are firstly it requires a lot of storage for documents, secondly it takes a lot of time to give feedback, third it cannot be implemented in a short time and immediately, thirdly it needs much teachers' attention. For example teachers have to collect student work carefully, sorted by chronologically and makes interpretation of theirselves (Juhanda., 2015: 319).

On the other hand, the weakness of the portfolio is that it requires extensive document storage, therefore it doesn't make a pile of books (document portfolios). In addition, the students need costs to make portfolio. Facing the problems related to the portfolio above, we need a media that is not only able to facilitate a comprehensive assessment concerning aspects of knowledge, skills and attitudes but also simple, efficient, and more dynamic.

The use of technology in education is done in order to improve the efficiency and effectiveness of the learning process (Sulisworo & Toifur, 2016; Sulisworo et al., 2016). One utilization of assessment technology teacher can uses is an electronic portfolio. Electronic portfolio is a system that collect artifacts that represent individual, group, community, organization, or institution (Lorenzo & Ittelson, 2005). Many tasks that can easily be attached by using an electronic portfolio (Ramlawati, 2012). Barker (2005) also states that the electronic portfolio assessment can be made more effective and efficient (Ramlawati, 2012: 12). Through e-portfolio, learners collect select, and reflect inside and outside learning at the classroom (Lakin, et al., 2003). E-portfolio assessment also can be used to encourage learners to evaluate themselves (self-assessment) (Sweat-Guy and Buzzetto-More, 2006).

## **DISCUSSION**

The concept of E-Portfolio or Electronic Portfolio was born to answer the educational challenge of globalization, in which the Internet becomes an epidemic that cannot be inevitable for the young generation of this nation is a milestone educational establishment in Indonesia. E-portfolios can be called as a complement of E-learning that generally refers to using computer-assisted learning activities or in English called Computer Enhanced Learning. E-learning and E-portfolio is an activity that is closely related to high-level learning technology or Advanced Learning Technology (ALT). This technology is taught how to use technology to improve learning and assessment, among others via blogs and multimedia technology.

Electronic Portfolio and portfolio-based computer is used to describe the process and results of the portfolio tasks are stored in electronic format. Electronics Portfolio is a document students in electronic format containing information on students (such as transcripts, letters of recommendation, and a historical record of the work) and the selected works of students (such as text, multimedia projects, and works of art) are made in a variety of media formats including blogs and websites (Dudeney & Hockey, 2007). Sutherland and

Powell in Gray (2008: 7) states that an e-portfolio is a purposeful aggregation of digital items ideas, evidence, reflections, feedback etc, which presents a selected audience with evidence of a person's learning and ability."

Based on the quote above, it can be analyzed that the e-portfolio is a result of students' work in the form of tests, performance tasks, and projects created by students working alone or in groups in the form of digital evidence that reflect experience, performance, and learning. Meanwhile, according to Gray (2008: 8) assessment e-portfolio should contain:

- a. **Application** - providing evidence in support of an application for a job or for admission to further study
- b. **Transition** - providing a richer and more immediate picture of learners' achievements and needs as they progress to a new environment, and supporting them through the process of transition
- c. **Learning, teaching and assessment** - supporting the process of learning through reflection, discussion and formative assessment, and providing evidence for summative assessment
- d. **Personal development planning (PDP) and continuing professional development (CPD)** - **supporting** and evidencing the pursuit and achievement of personal or professional competences

From the above quotation can be analyzed a variety of e-portfolios purposes, ie a) application, providing proof, b) Transition, provides an overview to support the transition, c) Learning, teaching and assessment, and d) personal development.

Duffy in Widodo (2009: 3) argues that there are four types or levels of the portfolio based on the student's responsibility of work and how teachers help students, namely:

**a. The Everything Portfolio**

It is a collection of student work across a wide variety of students, class, semester, or year. This portfolio contains works of students, both during the process and the final draft. Selection of works in the portfolio of this type is not the main goal. In general, this portfolio evaluated as an example of student work in various levels of competency achievement. So this portfolio tends summative.

**b. The Product Portfolio**

In the product portfolio, the teacher provides a list of the contents of a topic or product. Then, students incorporate examples of his work in the area of content. Evaluation of this portfolio in the form of meetings between teachers and students. In the meeting, the teacher provides summative feedback but this feedback is as a formative information for students. Teachers select students' best work and explaining why it is best. Information from the teacher's explanation is very helpful for students to develop the next portfolio.

**c. The Showcase Portfolio**

In the showcase portfolio, the teacher provides a list of the contents of a topic and students evaluate the elements to his portfolio and give a rational reason for each selection. Students are reminded to not only enter the work assessed either by the teacher but should also consider the audience and purpose of the portfolio. In the evaluation of the portfolio, the teachers met with students and teachers give feedback on the students' summative product and formative feedback on students' reasons for his selection process.

**d. The Objective Portfolio**

The final level is the objectives portfolio. In this portfolio, teachers formulate a list of objectives or statement about the quality of performance. Students select from a collection of his work to bring together the best work with these objectives. The portfolio of this type should not be limited to written works alone, but all the artifacts and student performance (eg, in a variety of media formats) that pertain to the purpose or quality of performance required. The portfolio of this type requires a student's ability to analyze the goals, determine the possibility of work, selecting the best examples of the skills required in the goals, and give the reason of his selection. For every goal that has been completed, the teacher gives individual qualitative feedback. For purposes that have not been completed, teachers provide formative feedback that allows students to get a better understanding about the purpose.

**Table 1** comparison between traditional portfolio and e-portfolio (adopted from Wanchid, 2011)

<b>Criteria</b>	<b>Paper based Portfolio</b>	<b>Electronic Portfolio</b>
<b>Place for portfolio development</b>	<ul style="list-style-type: none"> <li>• The students' work is assigned, and stored on scrapbooks, paper folders, or paper binders,</li> </ul>	<ul style="list-style-type: none"> <li>• The students' work is assigned, assessed, and stored on the computer or website</li> </ul>
<b>Type of communication</b>	<ul style="list-style-type: none"> <li>• One way communication</li> </ul>	<ul style="list-style-type: none"> <li>• Two way communication (without time and place restrictions)</li> </ul>

<b>Audience</b>	<ul style="list-style-type: none"> <li>• Teachers and classmates</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers, classmates, parent, employers, and other</li> <li>• A privacy feature to limit the audience</li> </ul>
<b>Level of interaction</b>	<ul style="list-style-type: none"> <li>• Less interaction and negotiation of meaning</li> </ul>	<ul style="list-style-type: none"> <li>• More interaction and negotiation of meaning with unlimited participation online.</li> </ul>
<b>Assessment condition</b>	<ul style="list-style-type: none"> <li>• Handwritten feedback and assessment of papers</li> </ul>	<ul style="list-style-type: none"> <li>• Typewritten feedback assessment by posting on students' electronic portfolio website</li> </ul>
<b>Rate of response</b>	<ul style="list-style-type: none"> <li>• Less immediate response from teacher and peers</li> </ul>	<ul style="list-style-type: none"> <li>• More immediate response from teacher and peers</li> </ul>
<b>Communication environment</b>	<ul style="list-style-type: none"> <li>• Less support and lack of a sense of learning community</li> </ul>	<ul style="list-style-type: none"> <li>• Greater support and sense of learning community</li> </ul>
<b>Degree of cultural barriers</b>	<ul style="list-style-type: none"> <li>• Greater cultural barriers in term of face-to-face communication, peer response process, and teacher feedback</li> </ul>	<ul style="list-style-type: none"> <li>• Fewer cultural barriers</li> </ul>
<b>Other facilities</b>	<ul style="list-style-type: none"> <li>• No other facility supports</li> </ul>	<ul style="list-style-type: none"> <li>• Writing facilitated by computer technology functions, such as cutting and pasting</li> <li>• Allowing students to collect and organize their portfolios in many media such as audio, videos, graphics, and texts (Barrett, 2005)</li> </ul>
<b>Content permanence</b>	<ul style="list-style-type: none"> <li>• Fewer potential feeling of content permanence</li> </ul>	<ul style="list-style-type: none"> <li>• Greater potential feelings of content permanence</li> <li>• High sense of pride, satisfaction, and accomplishment (Chambell &amp; Schmidt, 2005)</li> </ul>
<b>Portability and sharing</b>	<ul style="list-style-type: none"> <li>• Difficult to carry to share</li> <li>• Lost easily and difficult to retrieve or create the same document</li> </ul>	<ul style="list-style-type: none"> <li>• Easy to carry, share, and transport to a new system (Barrett, 2005)</li> </ul>
<b>Information accessibility</b>	<ul style="list-style-type: none"> <li>• Not convenient for many readers to access the content at a time</li> </ul>	<ul style="list-style-type: none"> <li>• Easier to get access to the content and information for audience/less time consuming (Al Khatani, 1999)</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>• No requirement of computer literacy skills</li> </ul>	<ul style="list-style-type: none"> <li>• Multimedia technology skills</li> <li>• More general literacy communication and problem-solving skill (Abrami &amp; Barrett, 2005)</li> </ul>
<b>Assesment</b>	<ul style="list-style-type: none"> <li>• Inconvenient for both formative and summative assessments</li> <li>• Need more effort to revisit and refine students' work</li> </ul>	<ul style="list-style-type: none"> <li>• Convenient for formative assessment</li> <li>• Revise/adapt teacher's lesson plan</li> <li>• Revisit and refine students' work</li> </ul>
<b>Organization and Maintenance</b>	<ul style="list-style-type: none"> <li>• Require physical space for storage</li> <li>• Inconvenient to search, edit, or update</li> </ul>	<ul style="list-style-type: none"> <li>• Easy to organize, maintain search, edit, link, store, reflect on, and update (Babae, 2012)</li> </ul>
<b>Cost</b>	<ul style="list-style-type: none"> <li>• No extra cost except papers, files, or folders</li> <li>• Other cost such as a time and transportation fees</li> </ul>	<ul style="list-style-type: none"> <li>• Inexpensive after software installment, but no expenditure if free weblogs and social networking sites are used.</li> </ul>

Advantages of E-Portfolio compared to paper-based portfolio by Beetham in Orsini-Jones and De (2007: 88) is as follows:

- a. paper-based portfolio system cannot accommodate the increased range of assessment and inflexible;
- b. At this time the college has generally utilize e-Learning extensively;
- c. E-Portfolio easily published;
- d. E-Portfolio is the foundation that can be used to connect the whole curriculum;
- e. E-Portfolio are generally designed to support Personal Development Planning and improving the skills of reflective practice and self-contained;
- f. E-Portfolio is centered on the user;
- g. E-Portfolios allow for discussion with a number of parties.

There are many benefits from the implementation of e-Portfolio by Faulkner and Allan in the International Journal of Learning in Social Context Australia (2009: 33), including: (a) To increase student engagement and retention; (B) To develop reflective skills, with the results as a means to develop the skills transfer; (C) To provide opportunities to change the assessment of learning into assessment for learning; (D) To assist the learning with a holistic approach; (E) To offer the individual's potential to add more data into the transcript of the formal institutions; (F) To assist individuals in developing discipline and proven competence and professional attributes.

Implementation of e-portfolios can be applied in a variety materials and subjects in schools and colleges. It was already done some research both in Indonesia and abroad. Taufiq (2016: 1063) says that the test results and expert evaluation of media experts recommend that media Electronic Portfolio developed eligibility get a percentage of 96.55% which means it is feasible to use in learning science. Electronic Media Portfolio can describe and improve effectively student achievement trends of each authentic project / task and products of learning undertaken during the learning process. Therefore, Portfolio Electronic is strongly recommended to be applied in a process-oriented learning, but also centered on the learner. Electronic portfolio has been developed based online service so it doesn't use paper, it is necessary to further study regarding the efficiency in supporting green paperless education.

Similarly, Juhanda et al (2015: 326) says that the developed APE can be used to assess the scientific attitude and mastery of concepts students on practical reports of environmental pollution. Nurhayati (2013: 58) states that the use of e-portfolios in the standards of competence to measure electrical quantities in an electronic circuit gets a good students response, seen from the acquisition of a percentage of 80.39%. It can be concluded that the assignment of the tested students included in the category effective as an instrument of student assessment.

In teaching English, e-portfolio is also very effective to use, Wanchid (2015: 142) concludes that an effective e-portfolio supports the teaching process. Rehusisma (2015: 9) states that the product portfolio is a web-based assessment tool that supports the implementation of Curriculum 2013, so the use of a web-based portfolio assessment is an alternative that complements other assessment systems. Website portfolio product can be used as part of an authentic assessment tool which can be used by schools in the whole learning process.

From research above, it proves that the assessment using electronic portfolio (APE) can be used in a variety of subject matter and in various subjects in schools and colleges. It is expected the application of the assessment of electronic portfolios (APE) in teaching can facilitate teachers in teaching and indirectly requires students to master the development of technology and information to navigate the challenges of the Asean Economic Community (AEC) which we are experiencing today.

## **CONCLUSION**

From the discussion above, it can be concluded that the e-portfolio can be used in a variety of subject matter and a variety of subjects. By teaching the use of e-portfolio will be more effective and efficient and to train teachers and students to take advantage of technological developments in order to face the challenges in the era of ASEAN economic community (AEC).

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