E-Portfolio Assessment in Measuring Soft Skills in Teacher Education Program: Preliminary Findings

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Abstract
Electronic portfolio or e-portfolio is used to assess teachers' professional development concomitant to rapid growth of technology. The effect of using e-portfolio has changed the assessment method in teacher education system. As an innovative tool, the multiple forms of e-portfolio play various roles in professional and personal development through self-assessment, reflection, formative and summative approaches. The development of identity of a professional teacher with soft skills is essential therefore exposure and awareness of its importance should be emphasized early in teacher training. The aim of this paper is to elaborate preliminary findings on UPSI e-portfolio system on its learning websites, MyGuru and the perception of student teacher on using e-portfolio system to assess soft skills. The respondents of 78 students from teacher education program (5 samples during interviews and 73 samples responded on questionnaires) were selected using convenience sampling. The focused course of the research is Character Development, a compulsory course to all students of teacher education program. Data is obtained by mapping the components of UPSI's e-portfolio system, survey and students' teacher focused group interview. Formerly, the e-portfolio system of UPSI has a framework for the assessment however it needs to be upgraded to expand the functions of the assessment. The initial data from the students' teacher perspective on e-portfolio indicated that they agreed it has potential as an assessment tool to evaluate soft skills. From the survey and interview, the students' teachers were found to be ready to use e-portfolio system for soft skills assessment. It is suggested that the rubric of the soft skills in the UPSI e-portfolio system should be improved.
Keywords : Electronic Portfolio, E-Portfolio, Teacher Education, Soft Skills, Assessment

Introduction

E-portfolio is a continuation of function from the existing conventional portfolio. It is the collection and digital demonstration of all learning outcomes which reflect continuous achievement of knowledge, skills and value (Herner-Patnode & Lee, 2009). There are several advantages of using e-portfolio as stated by educationists. Firstly, in contrast to the traditional portfolio, e-portfolio resources can be collected in digital forms as images, audio, video and animation compared to the still artifacts in paper-based portfolio (Curts, Yanes, & McWright, 2003; Gray, 2008; Ottenbreit-Leftwich, Glazewski, & Newby, 2010). Secondly, it is more manageable and easy to review using hyperlinks to learning standard, assessment standard and learning outcomes to monitor their achievement (Gray, 2008; Herner-Patnode & Lee, 2009). Thirdly, it alleviates professional and education networks through partnership of sharing and forum discussion. (Bairral & Santos, 2012; Griesbaum & Gortz, 2010).

Literature Review
E-portfolio in Teacher Education Programs

Previous researches showed there were several challenges in the implementation of e-portfolio at tertiary level. Among them were time constraint in designing the portfolio, low correlation between curriculum of learning outcomes and professional standard, lack of information and guidance on using the portfolio and the complexity of the software used. (Bennett, 2007; Swan, 2009). Apart from that, the copyright and ownership issues were given more emphasis as the current technology enable others to assess the students' personal information (Boulton, 2014; Curts, Yanes, & McWright, 2003). Besides the challenges, several researchers have identified the benefit of using e-portfolio where it encouraged learning and self-evaluation based on more authentic evidence (Buyarski & Landis, 2014; Lorenzo, Ittelson, & Oblinger, 2005; Ring & Ramirez, 2012; Roberts, Farley, & Gregory, 2014). E-portfolio has many roles and mainly for records and *showcase* (Buzzetto-more & Alade, 2008; Oakley, Pegrum, & Johnston, 2013), learning (Bairral & Santos, 2012) and assessment (Chang, 2001). In terms of validity, the usage of e-portfolio as an assessment tool was found to have higher validity in measuring students' teacher ability and skills (J. Mills, Wearmouth, & A.Gaitan, 2012; Schaaf & Stokking, 2008).

For the past 10 years, several foreign\western universities have given new branding to the e-portfolio roles as RAPID (*Recording Academic, Professional and Individual Development*), PACE (*Personal, Academic, Careers and Employability*) and PADSHE (*Personal and Academic Development for Students in Higher Education*) (Jafari & Kaufman, 2006). While in Asian countries, Singapore has started using e-portfolio system as a platform for teacher education developmen (National Institute of Education, 2009) and locally, University Kebangsaan Malaysia (http://ifolio.ukm.my) and University Teknologi Malaysia (http://eportfolio.utm.my/) have implemented e-portfolio without specializing it only to teachers' education program.

Soft skills in teacher education programs

In education, the objective of teacher evaluation is to facilitate professional competency and quality of a teacher. The evaluation is carried out by internal or external assessor, self-evaluation, parents or the students themselves by various methods; observation in classroom, portfolios prepared by teachers, level of students' learning achievement, tests or questionnaire (Isoré, 2009). Previous researchers contended that the identity of professional teachers experienced development in consistent with the changes in their philosophy on education (Mockler, 2011), culture image of teacher and teaching (Chong, Ling, & Chuan, 2011) and the history and personal experience as students teacher (Beltman, Glass, Dinham, Chalk, & Nguyen, 2015). Therefore, one of the important aspect of teacher quality is the cultivation of soft skills among teacher trainee. The importance of soft skills to undergraduates is undeniably. The elements of the soft skills in the country's higher education served as preparatory measures in providing human capital towards global standard (Ruhaiza Rusmin, 2016). From the year 1990 to now, the demand in merchantability of graduates increases from average to better academic qualification which is supported by soft skills acquisition (Mohammad Shatar Sabran, 2016). Currently, assessment on soft skills deepens when i-CGPA (integrated cumulative grade point average) is introduced where evaluation applies not only on the achievements of learning outcomes but as well as the acquisition of soft skills from the course (Kementerian Pengajian Tinggi, 2016). Hence, the usage of e-portfolio is required as an assessment medium to support i-CGPA which is more formative, systematic and self-directed. Soft kills assessment based on e-portfolio framework by Barrett (2007) shown in Diagram 1, refers to the usage of reflection guidance, feedback statements and the evaluation rubric for the students in self-assessment with evidence enclosed.
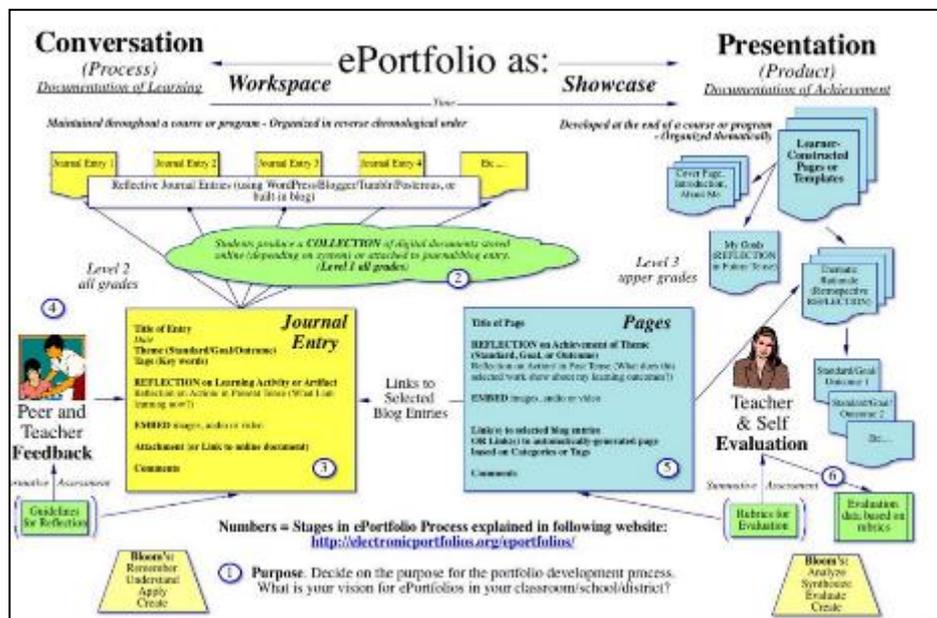

Diagram 1 Generic Model of e-portfolio development by Helen Barret (2007)

The proposal of using e-portfolio assessment is to complement the traditional assessment since in the previous study showed the traditional assessment is found to be less efficient in measuring students' ability to assemble relevant information or present arguments intelligibly and less sensitive to individual development (Chang, 2001). Gülbahar and Tinmaz (2014) found that e-portfolio was the alternative and innovative assessment which would accommodate the deficit in traditional assessment. Most of the earliest

researches, the idea of professional development and e-portfolio had been recognized as a strong coordinated mechanism of life- long learning (Abdallah, Lansari, & Al-rawi, 2009; Barrett, 2007; Galbraith, R. M., Hawkins, R. E., & Holmboe, 2008; Oakley et al., 2013). Some earlier researchers agreed that several soft skills could not be measured easily (Durowoju & Onuka, 2014). However, this finding was not in accordance with Khoo's research (2012) which used 'Plan-Do-Review' cycle where she proved that evaluation by constructing e-portfolio abled to enhance student's soft skills achievement.

Methodology

This research is carried out in stages beginning from the 1st semester of session 2016/2017. The first stage involved the analyzing of the framework of UPSI e-portfolio system. The mapping of its components is done to identify their roles. These components are coordinated with e-portfolio framework suggested by Barrett (2007) The evaluation component in UPSI e-portfolio system is given emphasis during the mapping. The initial data is also obtained from the interview of 5 volunteer students' teachers. Their opinion and perception on soft skills assessment given through Character Development course, a compulsory course for all students of teacher education. A questionnaire which has been validated by two experts is administered using the students' e-mail of which 73 students responded. All data is collected using convenient sampling. The research instrument used is an online questionnaire compose of demography and soft skills assessment through e-portfolio. The questionnaire consists of two open-ended questions on soft skill assessment and six cloze test questions. Likert scale of 5 points is used to analyze the students' perception on soft skills through e-portfolio, where score 1 indicates strongly disagree and score 5 strongly agree. From the interview, the data in the form of samples' responses is grouped according to the questions. Descriptive analysis is used to analyse data from questionnaire.

Results And Findings
UPSI's e-portfolio system

The existing framework of UPSI e-portfolio system comprises of the following components:
1. *My Details*

There are three sub-folders :

    a. *My Profile* – Personal information for example the student photograph, matric number, identification card number, faculty, program and address that show ownership of student's e-portfolio (Diagram 2).

Diagram 2 Content in *My Profile* subfolder

My Philosophy on Learning and Teaching – column where the student can write ideas on teaching and learning and keep them in archives where he/she able to access previous philosophical statements. These statements
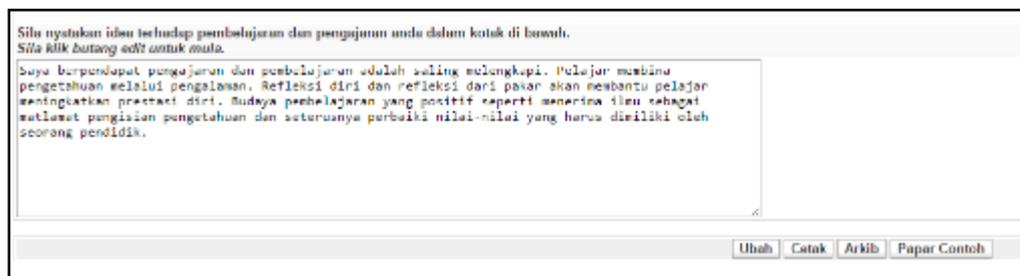enable the student to track on changes in learning and teaching beliefs while in the university (Diagram 3)

Diagram 3 Space provided in My Philosophy on Learning and Teaching subfolder

My Academic Progress which shows registration of courses for each semester, number of credit for each course and total accumulated credit. (Diagram 4).
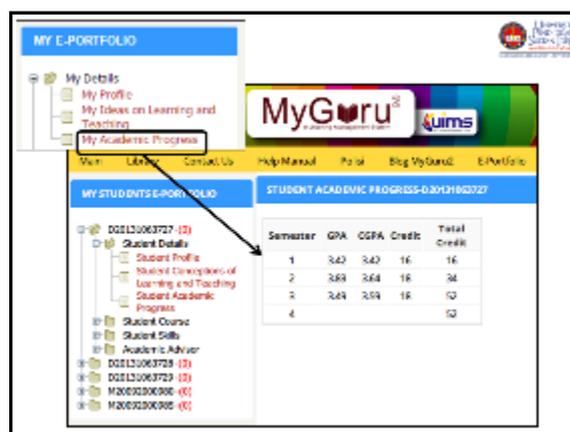
Diagram 4 List of courses and grades achieved in My Academic Progress subfolder

ii.   My course – shows courses registered for the semester. Each course is hyperlink to 'code subject' which links Teaching Plan, Learning Outcomes, artifacts which can be upload from assignments in MyGuru and Reflection Column. The student is able to reflect to questions such as:

"What new knowledge have you learnt upon completion of the course?"

"What are the skills have you acquired after completing this course?"

"What additional assistance, support, and/or resources would you need to
        be more successful in this course?"

"How can this course enhance your professional development?"

These reflective questions help the student to identify their weakness and make improvement in correspond to reviewing process in the reflection model. The course lecturer can access the folder and observe the student reflection but without two-way interaction (Diagram 5).

Diagram 5 Reflection in *My course* subfolder

iii. *My Skills* – A list of soft skills is shown with UPSI soft skill rubric (Universiti Pendidikan Sultan Idris, 2014). The student can select the acquired skills by the activities participated in the university, for example CSI - Ability to present ideas clearly, effectively and confidently orally or in writing, CTPS3 – Ability to search for ideas and find alternative solution. The student can add more activities participated and print all the assessed skills. Self-evaluation is based on rubric; 'Excellent', Good', 'Average' and 'Poor' (Diagram 6). But there is no evidence of description on each level of rubric.

Diagram 6 Display in *My Skills* subfolder

iv. *Academic Advisor column* – In this column the student able to have two-way interaction through messages. Academic advisors are responsible to monitor the professional development of the student under their advisory (Diagram 7).

Diagram 7 Space in *Academic Advisor column*

The findings showed that there is a customized system that can support assessment in teacher education program in UPSI. In terms of assessment, the UPSI's e-portfolio system can be used to track the philosophy development on learning and teaching, reflection of each course and soft skills evaluation on the activities of the campus or university. However, soft skill evaluation for academic learning outcomes is not available and need to be improved in the

system due to no explanation and descriptions on the rating of "Excellent", "Good", "Average' and "Poor" in the rubric.

Actual Practice in assessing Soft Skills
The interview was carried out to a focused group consists of five Bachelor of Education students. Guided questions given were as follows:
"Do you know the soft skills assessed by the lecturer is from Character Development assignments?"
'How does this rubric could assist in measuring soft skills from the assignments in Character Development course?"
"In your opinion, which soft skills is assessed by the lecture after completion of the assignments?'
"Is there a system or method to record and keep the assignment and materials in a place which can be assessed later by you, the lecturers or the academic advisors, and enable you to assess your own soft skills?".

Based on Table 1, the data showed the students' apply on assumptions on their enhancement in soft skills after participating in the course activity. There was no guideline on the achievement of soft skills which can be assessed by the students themselves. From the students' opinions, the rubric of the soft skills could improvise them through reference or rubric guide. Furthermore, the students were not sure which soft skills in Character Development was assessed by the lecturer, when the course mapped on skills such as "Ability to listen actively and give response", "Ability to search for idea and alternative solution", and "Ability to analyze and make decision to solve problem related to ethic". They were also not sure whether there was a recording system or method to keep the assignments or materials in a place where they can be assessed by the students, lecturers and academic advisors or to evaluate their own soft skills.

Table 1 :
Findings on Actual Practice in Assessing Soft Skills

Theme	Sample of response	Findings
Method of soft skill assessment.	"I know there is an improvement in my communication but there is no way to observe the change" "While doing the assignment, I feel the presence of cooperation spirit" "After my presentation, my communication skill gets better. The effect is there but only in my own thought". "Looking back at the development while in the program. If in the 1st semester we are not close, and later become closer and more committed. I feel there is an improvement. The same with my friends, after the program there is a certain change such as group cooperation".	Apply on assumptions for the improvement on soft skills acquisitions.
Soft skill assessed by lectures for tasks given in the course.	"Leadership", "Communication", "Communication and cooperation", "If it is an Outreach activity and Experiential Learning Programmes…group cooperation. The module maybe Finding Information".	Not aware of soft skills assessed.

Theme	Sample of response	Findings
The roles of soft skills rubric.	"Good. Because there is a benchmark to assist improvement in my soft skills". "Can be used as criteria reference to what is excellent"."Can observe all the scores. Able to refer to the soft skills". "Good as there is a guide. We will know what our score is. We will know which category we are, similar to the teenager magazine, we are in category 'I am an active teenager' ", "Able to assist in upgrading and improve our soft skills. If there is no guideline, there is the possibility the correct way will be left out and we keep doing the wrong one","I think it helps. The students can assess those skills".	Rubrics as benchmark and guidance for improvement.
System or method of recording assignment and materials which are kept in a place and can be assessed by the student and evaluate own soft skills.	"The MyGuru website?", "None", "Not sure", "I don't know. I submit the assignment, to the lecturer and wait for the score given lecturer". "Academic Advisor? because he is the one who assessed it".	No exact medium or platform to assess own soft skills.

Perception of using e-portfolio assessment in assessing Soft Skills
The survey involved 73 students from 9 faculties at UPSI. The data was obtained from the survey which used 5 points Likert Scale questionnaires. 12 males and 61 female students participated. 19 students were from Language and Communication faculty, 15 from Human Science, 9 from Science and Mathematics and the rest of 6, 5, 4, 3 and 1 were from faculty of Economy and Management, Technical and Vocational, Computer Science and Creative Industry, Sport Science and Coaching, Art and Performance respectively. The eight items in the questionnaire which have been reviewed by two experts were administered on-line through students' e-mail. A set of guided questions are given: "How does soft skill evaluation is carried out in the academic course for each semester? and "What type of platform used in the assessment of your soft skill?". Other questions involve agreement level on 5 points Likert scale analysis from items: "In your opinion, does e-portfolio has potential to assist in assessing your soft skill?", "Are you prepare to implement self-evaluation using e-portfolio?", "Do you agree by demonstrating the artifacts for soft skills help in your professional development?", "Do you agree that e-portfolio able to assess soft skills more fairly through the evidence shown?" and "Do you agree e-portfolio in personal and professional development should be implemented in teacher education program?".

The finding shows evaluation method in soft skills achievement is based on the lecturer evaluation for the semester (75.8%), self-evaluation for the semester (65.2%), lecturer evaluation at the end of the semester (45.5%), self-evaluation at the end of the semester (31.8%), no evaluation from the lecturer (6.1%), no evaluation from the student (6.1%). The platform used is UPSI e-portfolio (67.2%), Student Information System (or MySIS) (70.1%), ifolio (9%) and blog (example : Wordpress, Blogspot and others) (3%).
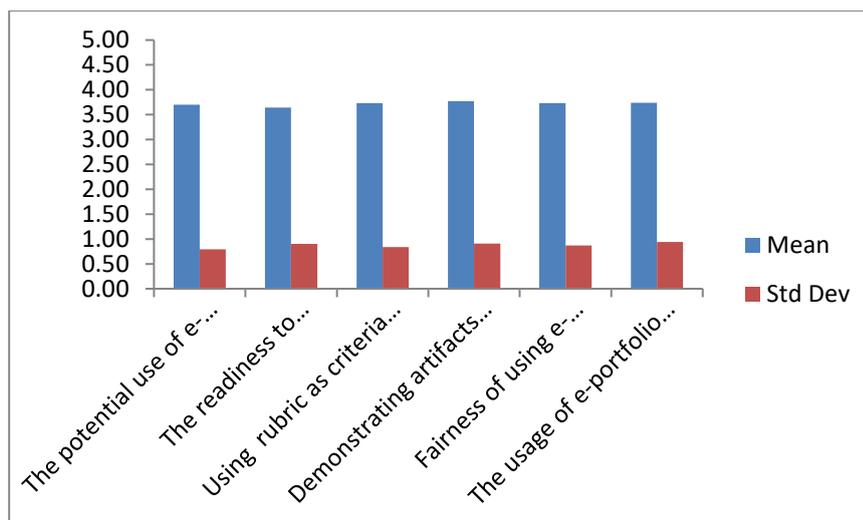
Diagram 8 : Mean level of agreement on soft skill assessment through e-portfolio (and standard deviation)

Based on Diagram 8, most of the respondent agreed that thay were ready in self-assessment (Mean =3.64, SD =0.903) using e-portfolio which has potential to assess their soft skills (Mean =3.70, SD =0.794). They agreed that e-portfolio is able to assess soft skill more fairly through the evidence shown (Mean = 3.73, SD = 0.870). Most of them agreed that artifacts presentation and the use of rubric as criteria reference helps in soft skills development (Mean = 3.77, SD = 0.906; Mean = 3.73, SD = 0.838). On average students agreed that e-portfolio for personal and professional development can be used in teacher education program (Mean =3.74, SD =0.943).

Conclusion
The acquisition of soft skills is essential to teacher trainees besides knowledge and pedagogy to qualify them as quality teachers in the future. As designated teachers, soft skills acquisition can now be evaluated using a platform which is more authentic and innovative and relevant to the current technology development. This situation is further encouraged by innovative methods of assessment in teacher education program worldwide to provide a more self-directed and self-regulated teachers in learning and assessment of their personal and professional development. A balance between assessment and learning of soft skills prepare students of teacher education with quality to face education challenges in the future. In fact, the identification of a professional teacher through soft skills should begin before entering the actual teaching profession. The designing of e-portfolio system should consider the issues and challenges related e-portfolio assessment moreover to the roles played by the e-portfolio itself in order its benefit and usage can be internalized by all users at institution level mainly in teacher education program. From the initial data of this research, it is suggested that the assessment of e-portfolio using rubrics and soft skill self-assessment is proposed to be applied in UPSI teacher education program.

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