Constructing E-folios using TINS – a case study

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Abstract: The authors had designed and developed a web-based environment TINS (an abbreviation for Theme-based Inquiry Network Studio). There are 34 software tools embedded in five different modules in TINS, and teachers can use some of the software tools in teaching when appropriate. The friendliness of the user-interface and the easy-to-use features of TINS made it a useful web-based environment for both novice and expert teachers who were motivated to learn and to use TINS in different applications. This paper reported a case elementary school teacher who constructed his e-folios by applying TINS to support teaching, research and administration on the course of his professional development.

Introduction

Using Teaching Portfolio as a method of teaching was proposed by Elbow & Belanoff (1991). It was viewed as both a teaching and an assessment tool to allow students put together a collection (portfolio) of their works for evaluation purposes. The portfolio was expected to produce a multi-dimensional portrayal of the student's skills and abilities. The model introduced by Elbow and Belanoff (1991) was a more student-centered approach because it required students to include self-reflective writing, and involved evaluation of the portfolio by instructors.

The concept of E-folio is similar to that of teaching portfolio. Yitna Firdyiwek introduced an electronic performance support system called E-folio that was developed for teachers with a teacher-centered approach by providing teachers with a way to express their teaching style, address their disciplinary needs, and comply with their institutional requirements (https://e-folio.web.virginia.edu/1/dspHome.cfm).

Theme-based Inquiry Network Studio (will be abbreviated as TINS hereafter) is a web-based environment designed and developed by the authors. It was originally used to support theme-based inquiry teaching and learning and was found to be useful to promote teachers’ professional development (Lin & Lin, 2005a) and to enhance students’ learning (Lin & Lin, 2005b). However, TINS had been creatively used in many aspects such as subject teaching, class management, science fairs, project-based learning, administrative management, etc.

Comparing to other E-folio systems, TINS took a learner-centered approach for both teachers and students instead of a pure student-centered or teacher-centered approach. On one hand, TINS supports teachers to express their teaching ideas and styles, to reflect their teaching, to compile teaching efforts, and to record teaching performance. On the other hand, students can use TINS to express their understanding of the knowledge and concept learned, their final works, their communication with teachers and other students, and their self-assessment and peer-assessment of students’ performance etc. Furthermore, TINS went beyond teaching and learning because it also supported the administration of the users when applied creatively.
System Design

TINS provides 34 software tools which can be further classified into five modules as follows:

1. **On-line Interaction Module**: including six software tools such as “Bulletin”, “Guestbook”, “Discussion Forum”, “Single Voting”, “Multiple Voting”, and “Chat Room”.
4. **System Management Module**: including seven software tools such as “Revision of Personal Data”, “Name Change”, “Layout Change”, “Account Management”, “System Architecture Control”, “Statistics of the Flow”, and “User Interface Intelligent agent”.
5. **Research Support Module**: including three software tools such as “Questionnaire Creation”, “Kolb Learning Style Questionnaire”, and “Self-Regulated Learning Questionnaire”.

Our research team applied a “virtual hard disk” concept to design and to develop TINS. TINS users applied for their own free TINS websites in the TINS Teacher Community website (http://tins.jsps.hlc.edu.tw/xoops2/) without charge. We took care of the system maintenance and trouble shooting of any problem encountered in using TINS, so users had no worry about the technical sides regarding to owning a TINS website. The “System Architecture Control” software tool embedded in TINS supports school teachers the flexibility of closing or opening other software tools as needed. The “Layout change” software tool supports school teachers in designing their own TINS websites creatively. Consequently, TINS serves as a friendly and useful web-based environment for teachers to implement the constructivism in school. Some teachers owned a TINS website for one class, or used a TINS website for one subject, or a TINS website for a project, etc. Therefore, it was possible that a teacher may own more than one TINS websites to serve different purposes.

The Study

With the 34 software tools embedded in the five modules, TINS can be used as an e-folio for school teachers to keep the records for their efforts during the course of their professional development. The purpose of this study was to introduce how a case elementary school teacher Mr. Huang (will be abbreviated as H hereafter) constructing his e-folios in teaching, research and administration using different websites created by TINS.

H has been the Director of Studies and Student Affairs in his school for eight years. H is an expert in information and communication technology (will be abbreviated as ICT hereafter), and he used quite a few TINS websites to serve different purposes each year to construct his e-folios regarding to teaching, learning, research and administration.

1. **Application of TINS in teaching**:
   

   (1) **Usage of On-line Interaction Module**: H often used “Bulletin” to communicate with students about what they need to know. H used “Guestbook” for students to communicate with each other in a leisure way, and used “Discussion Forum” to enhance the interactions between him and students. H often used “Single Voting” or “Multiple Voting” to understand students’ ideas about some issues or to make decisions on what students wanted to do.

   (2) **Usage of On-line Assessment Module**: H used “On-line Learning Worksheet” to ask students questions and gave them feedback on-line. He used “Learning Diary” for students to write down what they learnt and reflected, what questions and problems to be solved, and how to apply knowledge learnt in the daily life. Sometimes H

(3) Usage of Teaching Support Module: H used Teacher’s Reflection Diary to record his observations and reflections about teaching, used “File System” to display teaching materials, used “Calendar” to plan events and to remind students what to do in the future. H also used “Photos” to record the teaching processes or students’ works, and used “Resources Links” to provide some good websites relevant to the topics taught as scaffolding to enhance students’ learning. H used “Article Appreciation” to encourage students to devote themselves in writing and to appreciate other students’ good works. Sometime, H used “Monitor of Combat Values” to correct students’ wrong behaviors in using “Discussion Forum” or “Guestbook” in TINS. He also used “Honor Board” to keep a record about students’ achievement and good behaviors to motivate students to do even better for the sake of honor.

(4) Usage of System Management Module: H taught students how to use “Revision of Personal Data” to protect their accounts. He also used “Name Change” and “Layout Change” to character the layout of all of TINS websites he owned, and he used “Account Management” to change the priority of the users. Sometimes, he used “System Architecture Control” to open or close some software tools depending on the needs in applying TINS. He often used “Statistics of the Flow” to check how many students logon each day.

2. Application of TINS in research

In 2004, H guided a group of students to conduct a theme-based learning and packaged the final products to participate in Taiwan Schools Cyberfair Competition and won an “excellent work” award (http://mail.jsps.hlc.edu.tw/w-kids/). At the time, H was very busy, but the participated students used “Discussion Forum” in TINS to communicate with each other about the meeting time, who to visit. The lead student mimicked H to supervise other students to conduct data collection of the investigated theme by using the “Learning Worksheet” and gave grades and feedback to her partners. Students stored the searched information in the “Learning Diary”, and retrieved the information to write required reports (Lin & Lin, 2005b).

In 2006, H used TINS as a platform to work with teaches and students both in his school in the eastern part of Taiwan and another school in the southern part of Taiwan to conduct a collaborative learning about two themes such as “my daily life in school” and “the specialty of the community near my school” (Lin, Huang & Lin, 2007). At that time, H set up a TINS website (http://media.jsps.hlc.edu.tw:8000/95hpps/) for the interactions between teachers and students between two schools. In one occasion, H used “Chatroom” for the instantaneous communication with the cross-county cooperative principals, teachers and students.

3. Application of TINS in administration

At the end of November, 2008, the Educational Bureau in Hualien County held a big ICT Exhibition. The staff, who worked for the Educational Bureau and was in charge of the event, invited many school principals, directors, and teachers to work together to organize the exhibition. H was invited as a CEO for the event. H created a TINS website (http://media.jsps.hlc.edu.tw:8000/info2008) as an event planning and management platform to work with all the participants to prepare the exhibition for demonstration of ICT application in schools. TINS served as a platform for communication, data collection, information integration, photo storage, and event planning. It turned out to be useful in supporting the successful implementation of the ICT Exhibition. Many participants appreciated the ease-to-use and friendly features of the software tools embedded in TINS, and they were happy to use TINS later in their own schools to assist teaching and administration.

Conclusions and Educational Implication

This research found that the 34 software tools embedded in the five modules of TINS helped H to do a good job in his teaching, research and administration. The different TINS websites used serve as the e-folios for him to reflect his instructional design, assessment and creativity, it is also easy for him to retrieve information later. The friendly user-interface design and easy-to-use features of TINS reduced the obstacle of its application. TINS is a good web-based environment for the creative users to implement constructivism in
teaching and other areas of application because every TINS owned by different users look different. It can also be used in various situations, such as classroom management, project-based learning, theme-based learning, event planning and administration, etc. TINS users did not need to apply all software tools in TINS to successfully integrate ICT into teaching and learning. Most teachers used some of the software tools depending on their expertise in ICT application and the needs in teaching and learning. Even H is an expert in ICT, he used some software tools in TINS based on the needs of teaching, learning, research and administration. The flexibility, friendliness of TINS makes it an excellent web-based environment for teachers to construct their e-folios to portray the professional development of their careers.

Reference


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