Ogata, H. et al. (Eds.) (2015). Proceedings of the 23rd International Conference on Computers in Education. China: Asia-Pacific Society for Computers in Education

Development of a Social Networking Service for Teacher Training which uses Comments and Digital Portfolios

Takuro OZAKI[a*] & Fumio NAKAYA[b]
[a]*Information Processing Center, Osaka Kyoiku University, Japan*
[b]*Center of Science Education, Osaka Kyoiku University, Japan*
*ozaki@cc.osaka-kyoiku.ac.jp

Abstract: In this paper, we propose a teacher training system that incorporates educational digital portfolios using the Social Networking Service (SNS). We considered the situation in which the student teaching period occurs and focused on the educational benefits of using the SNS to communicate remotely. A challenging issue during the teacher training practicum is ensuring efficient communication and consistent evaluation between the university professor, host school mentor and university student. Our proposed system promotes the development of effective teaching and evaluation methods by sharing knowledge and practice records concerning the teaching practicum.

Keywords: Teacher Practice, Social Networking Service, Distance Learning

1. Introduction

In order to improve the teacher training practicum, it is important that both the university professor and mentoring teacher evaluate the student on similar criteria. Since during the practicum its difficult for the mentoring teacher, professor and university student to meet at the same time, a new structure must be created that both enhances evaluation and improves communication. During the student teaching period, professors have few opportunities to meet their students. Students must frequently contact the advisor in their assigned school.

Nishibata (2010) and Mochizuki (2010) have demonstrated the value of using a commercial SNS (e.g. Facebook) for professors and students to maintain contact during the teacher-training period. However, since student portfolios and practicum information are confidential, the public nature of a commercial SNS makes it difficult to adopt at a national university.

In this paper, we propose using an original Social Networking Service in conjunction with e-portfolios to both electronically document the teacher training experience while facilitating communication between student and professor.

2. Design of the Social Networking System for Teacher Training

2.1 OpenPNE – Open Source Software for Social Networking Service

OpenPNE is open source software that provides a Social Networking Service. It can control local closed communities using user authentication. It can also retrieve user ID's through POP3 or LDAP.

2.2 User Authentication

The Information Processing Center at Osaka Kyoiku University (OKU) provides accounts for professors, K-12 teachers, staff and students for online resources such as e-mail, personal Web space and LMS login services. OKU users can log into the proposed system through the LDAP login. In addition to the administrator and general user accounts, the administrator can create an instructors account to allow the professor to manage the class and online communities.

2.3 File Management

The proposed system provides file-uploading features like Word Docs, Excel Spread Sheets, PowerPoint Presentation Slides, photos and videos from PCs and tablets. It also has a diary and messaging feature including OpenPNE. It can be used to notify users of activities within their communities.

2.4 Watching Videos and Submitting Messages

The proposed system includes Video Plus, a service for viewing streaming videos. Its features include posting comments and inserting quizzes over the original video. Figure 1 shows a snapshot of the interface.

There are two methods to post a video. The first method uses a PC to post a video taken by camera. In the second method, videos are posted directly using the tablets PC's camera function. However, high quality videos often have large file sizes that can cause the network to slow down. To solve this problem, the authors used an original app that can record low quality video files that will not stress the networks capacity.

All users in an associated community are able to comment on a posted video. Dialogue is encouraged between professors, mentors, students and classmates.

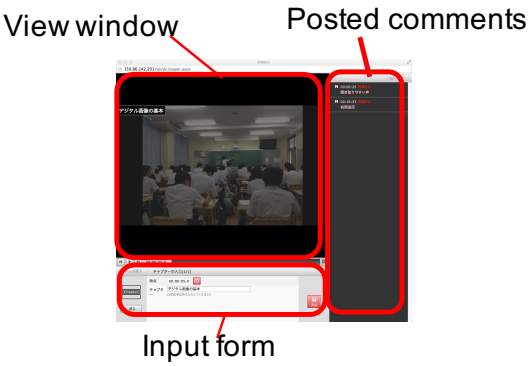

Figure 1. The view of videos watched in the proposed system

2.5 Data-Link with Multi-Function Printer/Scanner

Students and professors using the proposed system will need to access files like teaching plans, instructional materials and notes written on the blackboard. All materials submitted to the Social Networking Service must be in digital format. In the teacher training practicum, many of the materials used are on paper. It is therefore necessary to convert these papers to digital format. This is accomplished by using only a Multi-Function Printer (MFP) that does not need a PC. The printed files are automatically linked to the user ID.

3. System Design and Implementation

The proposed system has Windows Server 2012, Apache 2.4, PHP 5.3 and MySQL 5.5 environment (XAMPP) installed for the Social Networking Service. The system is based on a customized OpenPNE. Communication logs and digital files for activities are on the same physical server with the Social Networking Service server. In addition, a server for HTTP-based streaming, digital scan analysis and a server for MFP are part of the system. The system also has an encoding server to accept many kinds of platforms (i.e. Windows, MacOS, iOS).

4. Trial Test

The authors conducted a trial of the system at an attached elementary school in September 2014. We investigated the reaction of five university students who watched the videos. The videos were recorded and uploaded by the school's staff. Once the video was uploaded, the mentor made comments about the student teacher performance.

Figure 2 shows an example of the system. The student teachers were surveyed about their experience using the system. Student teachers who participated in the system test gave the following comments.

- It was easy to understand my lessons via video with mentor's comments.
- I found that I did not look at all the pupils in my class.
- I found that I had a different presence than I had imagined.
- I would like to watch other practicum student's classes via video.
- I would like to use videos for a class review meeting.

Figure 2. A practical example of the proposed system

5. Conclusions and Future Research

While the results of the trial test were positive, more data and trials will be necessary to determine the extent to which the proposed system enhances evaluation and improves communication. Due to time constraints, the authors could not adequately interview all professors in a timely manner. Future research will require the input of all participants. In future studies, the authors will need to increase opportunities to use the system during the teacher training practicum and continue to gather data.

Acknowledgements

This study is supported by The National University Innovative Certified Fund from Ministry of Education, Culture, Sports, Science and Technology, Japan.

References

R. Nishibata (2010), Coordinated Teacher Education Guidance using SNS, Japan Association for Communication, Information and Society 2010, Vol.6, No.1, 4-12.

T. Mochizuki and T. Kitazawa (2010), Designing a Learning Community for the Pre-service Teacher Training Using the Social networking Service, Japan journal of educational technology 33(3), 299-308,

F. Nakaya, T. Ozaki, R. Eto, E. Morita (2014). Development of SNS for Teacher Practice Practical Using for Movie, Handwriting Data and Digital Files, Proceedings of Japan Association of Universities of Education 2014, 180-181.

Tejimaya Co., Ltd., OpenPNE, Retrieved from http://www.openpne.jp/

Digital Knowledge Co., Ltd., Video Plus, Retrieved from http://www.digital-knowledge.co.jp/service/products/Video_plus/