**DESIGNING FRAMEWORK OF ELECTRONIC CONTINUED PROFESSIONAL DEVELOPMENT FOR TEACHERS (e-CPD)**

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**Abstract**

This paper discusses on designing framework of virtual training for teachers namely electronic Continued Professional Development (e-CPD). The discussion contributes to the professional development of teachers in applying virtual training to augment their understanding of their teaching according to specialization. The paper also presents the virtual teaching and learning platform such as Frog Virtual Learning Environment (VLE) initiated by the Malaysia Ministry of Education. E-CPD was thus designed in conjunction for teachers’ Continued Professional Development via virtual environment. E-collaboration activities in the virtual training are also highlighted. Predominantly, the paper presented the development of e-CPD design framework which is essentially useful and recommended for future application in designing virtual training for technical skills.

**Keywords**: E-collaboration, Virtual Training, Continued Professional Development, e-Continued Professional Development

**Introduction**

Student learning and success are due, in large part, to the effectiveness of teachers. However, Deakin et. al (2010) mention that teaching routine workload and time constraint often hinder them from spending more time doing activities such as planning, preparing resources, observing colleagues’ lessons and continued professional development (CPD). The activities are accessible and available to be implemented at anytime and anywhere via online. Teachers are able to collaborate and share task with other colleagues for example utilizing a ‘personal learning network’ to improve preparation and instructional activities (Microsoft Partners in Learning, 2013).

Thus, teachers’ continuing professional development has become a major highlight within the school reform and improvement researches (OECD 2009). Professional development is seen as an important mechanism for enhancing teachers’ content knowledge and improving their instruction (Desimone et al. 2002). There are recent studies examining successful
online environment in terms of professional development teaching online (Mandernach et. al., 2005; Taylor & McQuiggan, 2008). Hence, this research investigated the implementation of e-CPD on designing creative multimedia products for instructional purposes.

Literature Review

Application of virtual teaching and learning in Malaysia

Realizing the challenges in Malaysian educational system, a new technological initiative called 1BestariNet was launched in 2010 to provide schools with more computers together with high-capacity wireless Internet access to support technology-based teaching and learning approaches. In achieving quality education, a high speed wireless internet with 4G has been equipped in all schools. To complement, frog virtual learning environment (vle) was established in schools. It is designed to augment learning for teachers and students.

The platform was cloud-based design to cater for unlimited learning experience. Learning can be anywhere at anytime and no more heavy school bags for students. Teachers may not fear for lacking in technical skills. Without technical skills in developing a website, teacher or students can collect video, image and educational resources then arrange and organize them in a website. They may design and develop own teaching and learning materials to suit the variety of learning styles within a simple click. Moreover, less time and effort required thus ease teacher in planning for instruction and manage academic calendar.

An online learning management system called Frog Virtual Learning Environment (Frog-VLE) has been established as a web-based learning platform intended to expand the learning experiences beyond the confined classroom setting. The platform not only designated for teacher and students, but also for parents to track their children’s learning progress.

The frog virtual learning product is an established, renowned and recognized globally. Content and educational tools are integrated for example from Khan Academy and Google Apps to enhance teaching and learning. It comprises of social networking platform to connect teachers, thus be able to communicate and collaborate within their community of practice. Similar tools, is also designed for students.

Application of Virtual Training for teachers

Electronic Continued Professional Development or e-CPD is a platform for virtual training designed to augment teachers’ understanding of technology based teaching according to specialization. The designed was intended to suit the local context of teachers’ professional development (Rafiza, Farahdina and Shahril Nizam, 2013). The design caters for the need to encourage teachers’ collaboration and sharing of expertise. The platform was designed to inculcate the culture of sharing knowledge and collaborating online among teachers in Malaysia.

Looking at the implementation of E-Continued Professional Development (E-CPD), Wang (2007) identifies difficulties such as extra time required to support chat discussion, some
academic staff may have problems with lack of available time and technical skills to utilize the technology. They seldom utilize chats, or suggest listservs to students, or upload students’ work on web pages. On the contrary, academic staff conveniently use email and prefer students to use online resources, (Wang, 2007).

A study concludes that teachers exposed to the e-training significantly changed their attitudes toward online instruction. They perceive it as more of an interactive medium than face-to-face instruction and more participatory form of instruction. Significantly, upon completing the online training, teachers utilize the online platform as a medium of interaction and instruction accessible anytime and anywhere (Gold, 2001).

Virtual CPD or e-CPD is a method which is tremendously useful and applicable in enhancing teachers’ performance. Its online nature allows activities and learning resources to be accessible and available at anytime and anywhere. Teachers, too, are able to discuss, collaborate and share tasks or teaching resources with their online colleagues to plan and improve their teaching preparation and instructional activities.

Whilst e-CPD seems to be ideal solution to current face-to-face CPD, it needs to be carefully designed and closely monitored by the CPD administrators and/or organizers. Reflecting on their own e-CPD experience with several groups of Malaysian in-service teachers, Rafiza, Farrah Dina and Shahril Nizam (2013) conclude that e-CPD could be a complete failure without continuous participation, collaboration and technical support between the administrators and teachers. They also mention sustaining teachers’ motivations to actively participate in the online environment has proven to be a great challenge. Among other factors, they associate the challenge with the teachers’ feelings of comfort interacting in an online environment. If teachers feel uncomfortable interacting online, they would not participate actively in discussions, and vice versa. They recommend teachers to be exposed to the e-training environment prior to the session and equipped with necessary technical skills to interact so as to boost their confidence level with the technology. Their views are somewhat similar to of Snoeyink and Ertmer (2002) who mention that limited resources, lack of time, lack of technical support, technical problem, the teachers’ lack of confidence, resistance to change and negative attitudes and no perception of benefits may slowly drift away as more effective training and administrative support applied.

**Development of e-CPD framework**
E-CPD is an abbreviation of Electronic Continuous Professional Development. It is a system designed specifically tailored for the purpose of preparing professional development programs for teachers. The design of the system is based on virtual collaborative interaction between teachers and instructors. Despite, the development process is a cyclic motion as it continuously experiences the enhancement and maintenance procedures to ensure the content of the virtual training conveniently suits the needs and demands of the teachers. Nevertheless, the iterative process provides training that suitable for the current demand of educational trend.

The design of e-CPD provides useful links to accommodate teachers along the training process. These encompasses reflection, forum, notes, news and announcement, activities, modules, multimedia academic materials, online video, resources. The links assist teachers in accessing information and content of e-CPD (Rafiza Abdul Razak, 2013).

Thus, in designing the framework of e-CPD, the Three-Phase Development (3PD) Model and ADDIE Model are adapted (Mayer, 2005). Figure 1 illustrates the process of design and development of e-CPD. The model is designed conveniently suitable in to meet the teachers’ current needs and demands in training information, communication and technology skills. The framework describes the system in developing virtual training for teachers. In addition, the system is also applicable for other virtual professional training. The design is intended to enhance and dynamically update the skills and knowledge among educators.

The process in designing and developing e-CPD involves seven phases; Analysis (A), Design (D₁), Development (D₂), Implementation (I), Evaluation (E₁), Enhancement (E₂) and Maintenance (M). The analysis phase analyzes the demographic background of the teachers. The teachers’ ICT competency and needs are investigated. Furthermore, the conducive infrastructure for virtual training is also looked through in preparing comfortable and appropriate conduct of virtual training platform.

The design phase produces the storyboard explaining the dynamic interaction and activities in e-CPD. This is essential as it provides the overview of each interface and thus explains the interaction between teachers and trainers. The developmental phase represents the authoring and production process of e-CPD. Useful and dynamic multimedia integration such as graphics, animations and video elements are integrated for advance accommodation throughout the virtual training process.

Upon implementation of e-CPD, pre-virtually training; a prior face-to-face training is required to guide the teachers to maneuver along the virtual training process. The registration and logging in procedures are also highlighted to assist teachers prior to their involvement in the virtual training. Close and step-by-step guidance are delivered throughout the implementation phase. This is crucially important as it determines the success of the virtual training. Followed by the pre-virtually training is the involvement of teachers in e-CPD. Teachers starts interacting with the content of e-CPD.

Figure 1 : e-CPD design framework
The evaluation phase explains the monitoring of teachers' interaction and activities by the trainers. The momentum of responses, inquiries and feedback are closely monitored and continuously engaged with the trainers. This ensures the positive relationship between trainers and teachers which is significant in making the virtual training a success.

The enhancement phase is designed specifically to ensure the quality of the virtually continuously meets the demands and needs of the teachers. All responses and feedbacks are carefully monitored. The cyclic motion of the e-CPD system design allows for continuous improvement thus enhance the quality of e-CPD at all times. In order to manage e-CPD, the maintenance phase essentially ensures the process of virtual training in the system design of e-CPD carefully maintained and organized.

Conclusion

The design and development of e-CPD framework is applicable to virtual training thus not restricted to any certain specialization. E-CPD provides alternative to training platform apart from the traditional face-to-face. Hence, the issue of lacking in time for training and heavy workload for teachers can be solved via virtual training. Predominantly, this adds to the improvement of teachers’ professional development. With better training, more knowledgeable and skillful teachers can be produced. Hence the quality of education is perceived to be continuously improved. Quality education requires quality teachers and quality teachers needs quality training. E-CPD provides the necessities and meets the demands in improving educational quality.

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