Title	A review of teaching practicum web-sites
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A Review of Teaching Practicum Web-sites

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Abstract

The teaching practicum is a crucial component in initial teacher training. Its main purpose is to provide student teachers the opportunity to practice and develop their teaching skills under the supervision of experienced teachers. Due to the recent development on the Internet, educators have become aware of the advantages of integrating it into various instructional and administrative activities. It is our intent to take advantage of these new developments to improve the implementation of the teaching practicum. As a first step, it is important to learn from the existing web-sites related to the practicum. Therefore, in this paper, we will: (a) report results of an extensive search of existing teaching practicum web-sites, (b) identify their strengths and weaknesses in design, and (c) provide suggestions for further exploration in this area.

Introduction

The teaching practicum is a crucial component in initial teacher training. Its main purpose is to provide student teachers the opportunity to practise and develop their teaching skills under the supervision of experienced teachers. The implementation of the practicum consists of supervision tasks and administrative tasks which involve many people, in particular, university personnel like the supervisors, the practicum coordinator, the practicum office staff and the student teachers, and school personnel such as the cooperating teachers and the principals, at different physical locations. This poses problems of coordinating practicum-related matters, communication and allocation of resources in its implementation. Since many educational courses are using the web to overcome problems related to resource allocation and communication, it is felt that similar problems encountered in the implementation of the teaching practicum could also be overcome by using a web-based solution. Before embarking on creating the IT solution, it is important, as a first step, to conduct an evaluation of the existing teaching practicum web-sites.

Objectives

The objectives of this study are:
(a) to report results of an extensive search of existing teaching practicum web-sites,
(b) to identify their strengths and weaknesses in design, and
(c) to provide suggestions for further exploration in this area.

In this paper, we document and explain how a review on the existing teaching practicum web-sites was conducted. The review started with an Internet search to collect the required data (i.e. teaching practicum web-sites). It was then followed by data evaluation based on a set of rubrics for evaluating web-sites. After the evaluation, suggestions and recommendations on developing a Web-Based Teaching Practicum System (WBTPS) were provided.

Internet search

The purpose of the Internet search is to collect data by locating existing teaching practicum web-sites. The search process and the search results are described below.

Search process

An extensive Internet search was carried out using six commonly used web search-engines and one specialised search-engine (refer to Table 1). The use of various search-engines was necessary as none of the search-engines can truthfully claim to cover everything (Glossbrenner, et al., 1998).

The searching process varies from using one search-engine to another. Some search-engines require us to perform several steps of refined search while others are relatively straightforward. This is because each search-engine uses different user interface and has different logic to calculate the relevancy of the keyword used (Glossbrenner, et al., 1998).

Generally, the keywords used for searching teaching practicum web-sites are "teaching practicum", "web-site", "university" and "school of education". We used mainly the "AND" logical operator to conduct different searches. We also reversed the sequence of the keywords to ensure a wider coverage of the search, for example, the phase "teaching practicum AND university" and "university AND teaching practicum" were used for searching. Basically, when the search result was below 200 hits, we then manually examined the web-sites to determine whether they can be included in our study.

Search results

The criteria for judging whether a web-site is suitable for our study are:

(a) it consists of basic content elements in a typical teaching practicum handbook,
(b) it is being used as part of the teaching practicum activities.

The names of the seven search-engines, their web addresses, and the number of teaching practicum web-sites found are given in Table 1.

Table 1: *Results of the Internet Search*

Search Engine	Web Address	Teaching Practice web-sites found
AltaVista	www.altavista.digital.com	2
Excite	www.excite.com	0
HotBot	www.hotbot.com	0
Infoseek	www.infoseek.com	2
Lycos	www.lycos.com	4*
Yahoo	www.yahoo.com	2
Peterson's	www.petersons.com	0

* Includes two web-sites that were already located using the other search engines.

Despite the lengthy time spent on searching the Internet, we have only managed to locate 8 web-sites which meet the above two criteria. These eight web-sites and their addresses are given in Table 2.

Table 2: *Teaching Practicum Web Sites*

Name of the Institution	Web-site Address
Virginia Tech	http://www.vt.edu:10021/education/janosik/cover/ELPS 5284/home.htm
University of Wisconsin-Stevens Point	http://www1.uwsp.edu/acad/educ/advising/practicm.htm
The University of Western Ontario	http://www.uwo.ca/edu/prac/
University of Missouri	http://tiger.coe.missouri.edu/
Indiana University in Bloomington	http://www.indiana.edu/~fieldexp/
Nova Southeastern University	http://www.fcae.nova.edu/Isca/index.html
Queen's University	http://educ.queensu.ca/~prac/index_practicum.html
The University of North Carolina	http://www.unc.edu/depts/ed/elemeduc/student.html

Evaluation of teaching practicum web-sites

This section describes evaluation instruments, presents evaluation results and makes suggestions for designing a web-based teaching practicum system.

Evaluation instruments

Our original intent of this study was to use an existing research-based evaluating instrument to evaluate the eight web-sites. From the literature search on recent researches regarding web-site design, we found nine web-site design guides (Lynch & Horton, 1997; Starr, 1997; Maddux & Johnson, 1997; Knupfer, et al., 1997; Clark B.I. et.al.,1997; Descy,1997; Milheim, et al.,1998; Wilkinson et al.,1997; Parker's, 1997). However, to our disappointment, these guides do not always agree with each other and are used to evaluate different aspects of a web-site. For example, some focus on the aesthetic aspect (Knupfer, 1997; Clark, et. al., 1997) and some on information access methods (Starr, 1997, Quinlan, 1997).

In addition, there is also a problem of terminology used. On the one hand, different terms are used to refer to the same issue. For example, the evaluation on 'hardware support' could also be termed as 'setting analysis' or 'technical components analysis' etc. On the other hand, a term could also refer to different aspects. For example, the term 'contents' could refer to 'teaching practicum materials' or 'incorporated web-site activities'.

Generally, we found that one instrument by itself alone is not suitable for evaluating the data (i.e. teaching practicum web-sites). They are either not grounded by previous research or are normally too detailed to be used for this evaluation. To overcome this problem, we compiled and developed a set of evaluation rubrics to be used for this study.

Table 3 shows our effort in compiling the evaluation guides. Four major aspects are identified for evaluation. The *aesthetics* aspect deals with issues related to visual and appearance. *Access*

looks into matters related to methods of accessing information (i.e. navigation links). *Activities* refer to incorporated web-based activities that enhance the web-based instruction and learning, and *contents* refer to teaching practicum information, materials and related documents.

Table 3: *Teaching Practicum Web-site Evaluation Rubrics*

Aspect	Evaluation rubric	Source
Aesthetics	Appealing overall impression e.g. unity in structure	Wilkinson et al.(1997).
	Consistent page format	Wilkinson et al.(1997); El-Tigi & Branch (1997); Quinlan (1997); Milheim & Harrey(1997); Maddux & Johnson(1997).
	Visually appealing: screen design, font size and colour etc.	Starr (1997); Knupfer, et al. (1997); Clark, et.al. (1997).
	Use of graphic image and icon to enhance message	Starr(1997); Milheim & Harrey(1997); Maddux & Johnson(1997).
Access	Acceptable downloading and accessing speed	Milheim & Harvey (1997); Wilkinson et al. (1997); Starr(1997)
	Methods of downloading, accessing and saving are easy to follow	Milheim & Harvey (1997); Barnard (1997); Quinlan, (1997)
	Provide navigation links, e.g. internal links and external links	Milheim & Harvey(1997); Wilkinson et al. (1997); Starr(1997); Milheim & Harrey(1997); Maddux & Johnson(1997)
	Provide summary screen and bar of buttons on home page	Maddux (1998); Quinlan, (1997); Wilkinson et al.(1997); Milheim & Harrey (1997); Maddux & Johnson (1997); Milheim & Harvey (1997)
Activities	Provide interpersonal exchange, e.g. email, web-conferences, bulletin boards, news group, real-time text or audio and video conferencing (IRC or CU-SeeMe), keypels, tele-mentoring , question and answer etc.	Hackbarth (1997); Harris, (1997); Harris(1998); Wilkinson et al.(1997); Hughes & Hewson (1998); Quinlan (1997) ·
	Provide information collection and analysis activities: information exchanges, database creation, electronic publishing etc.	Hackbarth(1997); Harris (1997); Harris(1998); Hughes & Hewson (1998); Quinlan(1997).
	Provide on-line problem solving activities, e.g. information searches, peer feedback activities, collaborate problem solving, simulation and on-line independent problem solving etc.	Hackbarth (1997); Harris (1997); Harris(1998); Starr (1997).
Contents	Provide author personal information	Maddux(1998); Quinlan(1997).
	Given page title and the description of its purpose	Maddux(1998); Quinlan (1997); Milheim & Harrey (1997)
	Provide sufficient scope of contents	Wilkinson et al.(1997); Quinlan (1997).
	Incorporate multimedia features, e.g. sound and video etc. to enhance messages	Starr (1997); Milheim & Harrey(1997)
	Contents are valid, up-to-date and relevant	Starr(1997); Milheim & Harrey (1997); Maddux & Johnson(1997).

Evaluation results

After the preliminary evaluation of the eight teaching practicum web-sites on each of the four aspects — aesthetics, access, activities and contents, a general profile emerged.

Aesthetics

Generally, the page format in each web-site was found quite consistent. Text colour and background colour appeared aesthetically pleasing. However, the unity in structure of the four web-sites was weak, and, therefore, the overall page layout became less attractive. This shortcoming was probably due to a common practice that web-sites were set up by one staff member and were later expanded and updated by different staff member(s).

All the eight teaching practicum web-sites contained mainly text-based instructions. This finding is comparable with that reported in other studies in which educational web-pages tended to use text rather than images to present information (Knupfer, et. al., 1997; Clark, et. al., 1997).

Access

As with many text-based web learning instruction, the navigation links provided by all eight web-sites were found to be effective and logical. That meant that the linkage from one page to another worked and the link structure provided easy access to relevant information. In addition, all the eight web-sites did not use large graphical images to enhance the message, and therefore, downloading speed was fast. However, all the web-sites, except one, provided summary screens for easy access.

Activities

The three categories of activities, interpersonal exchange, information collection and analysis and problem solving activities, were neglected (except for email) in these eight web-sites. However, two web-sites did provide external links to other educational resources. We also found that one web-site provided users with a search function, while two of them provided on-line Question & Answer sessions.

Contents

All the eight web-sites presented a set of formal web-based documents where the main purpose and themes of the teaching practicum were conveyed clearly and precisely. However, they did not incorporate multimedia features and only four of them provided the author's personal information and email address. The information on these web-sites generally included the teaching practicum instructions, course structure and syllabus which were updated consistently. However, some web-sites did not provide complete teaching practicum materials. For example, the teaching practicum observation forms were not found in seven of the web-sites.

In summary, the eight teaching practicum web-sites consisted mainly text-based instructions and were used as information delivery tools. In other words, these web-sites consisted of all the good features of a typical text-based instructional curriculum. For example, fast downloading time, simple navigation link structure and easy in accessing information etc. However, the evaluation results indicated two main weaknesses. Graphical images were not used to enhance messages and interactive activities were not incorporated to improve the implementation of the teaching practicum.

Suggestions

After the evaluation, suggestions are given based on the weaknesses which were identified in each of the four aspects stated above. These suggestions are provided in the following sections.

Aesthetics
The unity in structure should be considered during the process of expanding and updating of the teaching practicum web-site in order to improve on the overall impression of the users. It is also a good practice to use appropriate graphics to enhance structural effectiveness. For example, use of a graphical theme, icon identity to unify the elements of a particular web-sites. Furthermore, the effective use of colour, animation and movement could also enhance the aesthetic aspect.

Access
In order to improve on the aspect of access, we have three suggestions. Firstly, use a non-linear structure to provide internal as well as external links for meaningful involvement of information/ databases. These links must be intuitive and easy to navigate. Secondly, the home page (i.e. the opening page) is the most important page to which each of the other pages are linked. Hence, features related to this aspect would be greatly enhanced if the home page is appropriately designed. Thirdly, a summary screen and a bar of buttons are highly recommended in each web page.

Activities
The features of this aspect were neglected in the existing teaching practicum web-sites. In order to improve on the quality of implementation, the web-site developers should use new technologies to provide interpersonal exchange, information exchange and on-line problem solving activities. For example, by setting up a virtual school using the MUDs and MOOs technology, student teachers will be able to visit and experience the school culture and daily school routines before their actual school posting for the teaching practicum. Furthermore, while student teachers are out in their schools, they will be able to visit the practicum web-site and be updated on related materials and events.

Contents
Generally, a teaching practicum web-site should provide all materials in a typical teaching practicum handbook. That includes the application form, instructions to all parties involved, course structure and syllabuses, observation forms, etc. When these materials are put onto the web, they should be clearly written with sufficient information. Information could be presented with the use of multimedia features, such as sound, animation and change of colour, to enhance the functionality of the instructions and messages.

Conclusions

Two important findings emerged from this exploratory study. First of all, not many teaching practicum web-sites are being used as part of the practicum curriculum at present. Secondly, the existing teaching practicum web-sites are mainly used as information transferring tools. These findings showed that the new technologies of Internet have not been fully utilized for the implementation of the teaching practicum and the features of the existing web-sites are yet to be improved. We recognise that research on web-based teaching practicum is a new area requiring further exploration. Therefore, the next step of our study is to conduct a small scale Research

and Development (R&D) project on a web-based teaching practicum system (WBTPS). The objective of this follow-up study is to conceptualise a model for developing an effective WBTPS which, hopefully, could resolve problems of co-ordinating matters, communication and resource allocation in the implementation of the teaching practicum as stated in the objectives of this study.

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