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RESEARCH FEATURE

USING MULTI-POINT DESK TOP VIDEO CONFERENCING FOR THE PROFESSIONAL DEVELOPMENT OF NIE TRAINEE TEACHERS ON TEACHING PRACTICE

Report by
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INTRODUCTION

In recent years, the rapid development of information technology has generated an opportunity for teachers and students to experiment with an exciting new range of instructional and learning processes. Teachers and students can
now interact using the internet, World Wide Web, computer-mediated communication, intelligent tutoring systems, virtual reality, chat rooms, and multi-point desktop video conferencing (MDVC). The latter, in particular, provides increasing opportunities for university-based supervisors to share professional experiences across time and space with trainee teachers on teaching practice and to re-define, in important respects, conventional notions of the practicum.

Traditionally, time and space have been major constraints for supervisors involved in teaching practice to promote professional sharing. For the most part, supervision is heavily dependent on short, but often time consuming visits to schools. Despite its many merits (Dill & Stafford, 1994), the introduction of school-based initial teacher training has exacerbated these constraints of time and space, throwing the trainee teacher more and more on the finite resources of the school where he or she is posted for school-based learning. Moreover, it has led supervisors to complain that they have ‘lost touch’ with their trainees.

In Singapore, a number of parallel developments were important in promoting the use of MDVC on teaching practice. Firstly, during 1998 NIE began to restructure its practicum on a ‘partnership’ model (Benton, 1990; NIE, 1998), whereby schools were given more responsibility for supervising trainee teachers on teaching practice. The traditional block teaching practice was retained, but school-based cooperating teachers, coordinated by senior teachers (school coordinating mentors) took over the major role of guiding the NIE trainees. University supervisors, who had previously made about five or more lesson observations, were now to make a minimum of one. Secondly, the Ministry of Education (MOE) began grouping schools in Singapore into ‘clusters’ under the overall direction of school superintendents. Thirdly, the building began of a new NIE campus located at the western tip of the island in the grounds of Nanyang Technological University (NTU). Finally, the MOE began a major overhaul of the education system arguing that Singapore needed to prepare urgently to secure a place in a globalised, knowledge-based world. A premium was to be placed on creativity, autonomy and information technology, summed up in the notion of ‘Thinking Schools, Learning Nation’ (Goh in: Quah & Ho, 1998). Each of these developments had far reaching implications for the practicum and the part that video conferencing could play within it (Sharpe, et al. 1999).

This article reports on an NIE study which uses multi-point desktop video conferencing (MDVC) for the professional development of NIE trainee teachers on teaching practice.

What is MDVC?

Multi-point desktop video conferencing (MDVC) allows users at different locations to see and hear each other using ordinary desktop computers fitted with cameras, microphones, speakers and necessary hardware and software. There is a significant difference, however, between ‘multipoint’ and ‘point-to-point’ conferences. The former involves three or more people whereas the latter involves just two. The research team thus coined the phrase ‘multipoint desktop video conferencing’ (MDVC) to
distinguish the platform from the erstwhile 'point-to-point' platform. In this project, one supervisor located at the NIE would typically link up in cyberspace with five students located in five different primary schools in Singapore.

REPORT OF NIE STUDY

Background

This study is a two year NIE research project fully funded by the Ministry of Education's Education Research Fund. The origins of the study lie in the findings of a 1994 NIE project (Sharpe et al. 1994) which concluded that ways and means needed to be found to improve the quality and quantity of discourse between trainee teachers and their NIE and school-based supervisors during teaching practice.

The study incorporates a partnership between NIE and School Clusters N1 and N2 and has two parts: the ‘Mentor Study’ and the ‘Pre-Service Study’. The former uses MDVC to link together School Coordinating Mentors (SCMs) at eight secondary schools in Cluster N1. The SCMs are senior school staff who, under NIE’s partnership model have overall responsibility for the management of the Practicum at their schools. The latter uses MDVC to link NIE trainee teachers on teaching practice at different schools to each other and to NIE supervisors/researchers at NIE. The NIE researchers and school staff work in a partnership which involves collaboration on a range of matters, such as the purchase and sharing of hardware and software, the timetabling of trainee teachers and the provision of computer support services.

Aim of the Project

The study has two principal aims. The first is technical and developmental, involving the practical feasibility of putting into place a reliable MDVC system that fully exploits existing technologies. The second aim is pedagogic and is concerned to establish whether and, if so, how MDVC can add value to NIE’s Practicum by enhancing the professional preparation of NIE trainee teachers.

Essentially, the purpose of using MDVC in the ‘Pre-Service Study’ is to:

- enable trainee teachers to hold private discussions on any matters relating to their teaching practice;
- encourage trainee teachers to discuss teaching practice matters with members of the research team, who in many cases are their supervisors;
- draw up the basic pedagogic protocols for using MDVC as a vehicle for practicum conferencing;
- enable students to view themselves teaching using video clips which are streamed to NIE by file transfer;
- collect basic qualitative and quantitative data relating to the technical and pedagogic aspects of conferencing.

METHOD

Eight cohorts of students from the Post Graduate Diploma in Education (PGDE) and the Diploma in Education (Dip. Ed.) programmes were involved in the project from July 1999 to May 2001. They were posted to schools in Cluster N2 which were equipped with White Pine’s CU-SeeMe software and were linked to the
high speed band ATM internet network with access being provided by Singapore's Telecom's Magix.

The size of groups varied from thirteen to forty one, depending on the availability of the equipment and the availability of the research staff to conduct conferences. Through a series of stages, the conference organisation included:

- the allocation of students to specific conference groups;
- three periods blocked off on the students' timetables;
- an agenda of questions for each conference session;
- the opportunity to conference with maths and English specialists at the NIE;
- a schedule to record video clips of students teaching;
- the opportunity to view and discuss video clips of trainees teaching;

At the end of each teaching practice, participating students met at the NIE for a de-briefing session. They were given questionnaires to fill in and participated in open-ended discussions.

RESULTS

In general, the response to the multi point desk top video conferences was positive. Students involved in the early stages of the project, reported that the topics discussed were relevant to the practicum; it was helpful to talk to other trainees via MDVC; they felt less isolated; they were able to implement some of the ideas suggested during the conferences; and were supported and encouraged by their peers and supervisors.

Students involved in a later stage of the project with Maths and English specialist lecturers from NIE appreciated the advice on different strategies and different concrete materials to teach particular topics. They appreciated the advice on how to deal with boisterous children and how to stimulate interest in their lessons by using video clips as an introduction. Interestingly, the students commented on the empathy the specialists shared for the problems that students were having, particularly teaching children from dialect speaking homes, either Chinese, Malay or Tamil who had a poor grasp of the English language, the medium of instruction in Singapore's schools. This sense of shared experience helped to boost morale.

Students involved in video streaming identified benefits both from watching and discussing the video clips of their own teaching as well as their peers' teaching. Viewing the video clips provided a good opportunity for the student teachers to reflect on their teaching skills. Typical comments about viewing their own teaching included "we know our own weaknesses and how to avoid them in future;" "we can learn from trainees in other schools who have varied teaching experiences" and "we can adopt the strategies our peers have used." They thought it was "important to see fellow trainees teach as well as observing experienced teachers."

DISCUSSION

The ability to cut down on supervisors' travelling time is generally seen as being a major potential advantage of MDVC.
This will now be increasingly important as supervisors will be located at the NTU campus in Jurong. In the current educational context in Singapore, where communication and reflectivity in the form of critical and creative thinking are being emphasised, the observation that MDVC helps to break down communication barriers and makes it easier to identify and bring up issues, share burdens and experiences is highly significant. Clearly, however, we will need to collect more varied and richer data on this, as well as on the question of whether it leads to more learning and understanding. Interestingly, there was a definite feeling amongst all the students engaged in this project that they had become more familiar with each other, and the NIE supervisors, much more than they would have done in an ordinary face-to-face situation. This could be because MDVC offers a more informal medium compared to the formally arranged face-to-face supervisor visits.

Although we have limited our discussion to the practicum, there are other educational applications. For example, school principals, superintendents, heads of departments and school coordinating mentors can use the equipment for sharing experiences without the time consuming process of travelling to a central venue for a meeting. It seems inconceivable to us that MDVC will not become a routine feature of life in the new millennium. Our particular interest is in whether and how it will make a significant difference in reshaping teacher education and education in general.

CONCLUSION

Due largely to the support received from the NIE, schools in clusters N1 and N2, the Ministry of Education and commercial organisations in Singapore, it has been possible to establish a working MDVC system. Having been awarded a substantial grant from the Singapore Ministry of Education, the project team was able to purchase the latest CU-SeeMe Meeting Point system, that improved technical performance, extended its multi-task capability and enabled video streaming for sharing lesson clips and other materials.

As the basic equipment is now in place, we can turn to our central research questions which concern the role of MDVC in developing professional sharing and professional growth. In particular, we shall be investigating whether and, if so, to what extent MDVC can improve the quality of teaching practice conference discourse. Thus our motivation as educators lies less in the technology itself and more in its pedagogic potential. If we are correct, MDVC could genuinely add value to the practicum experiences at NIE and thereby help improve the quality of the teaching profession and, in turn, the pupils (Sharpe & Gopinathan, 1993, Sharpe et al. 1998 & 1999).
SOURCES


