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# Teaching Practice Discourse and Computer Communications Technology Project

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The Teaching Practice Discourse and Computer Communications Technology Project was launched in May 1999 and received official funding from EdRF of the Ministry of Education in October 1999. The project is a partnership between NIE and schools in Clusters N1, N2 and S and is investigating the use of multipoint desktop video conferencing (MDVC) in the NIE practicum. It is divided into two parts: a Pre-Service Study which involves NIE researchers and staff together with trainees posted to N2 Cluster schools for their Practicum; and a Mentor Study which involves NIE staff and School Coordinating Mentors (SCMs) at N1 and S Cluster schools.

## Project Research Questions

The MDVC project questions are:

- (i) In what ways can MDVC be used as a substitute of conventional Practicum conferences?
- (ii) In what ways does MDVC add value to the Practicum in the sense of providing experiences not available in conventional Practicum conferences?
- (iii) Does MDVC improve the quantity and quality of supervisor-supervisee discourse, for example by increasing the frequency of higher-level discourse?
- (iv) Does the use of MDVC enhance networking among SCMs so as to help them carry out their roles and responsibilities more effectively?
- (v) What are the pedagogic and technical protocols required for successful MDVC?
- (vi) What are the infrastructural requirements for MDVC to be implemented en masse across all of Singapore's schools and colleges?

## Main Developments to Date

Over the course of the research much has been learnt about the administrative and technical requirements that are necessary for successful MDVC conferences. Altogether there have been seven cohorts of trainee teachers who have used the MDVC system since the project was launched in June 1999. Beginning with the second cohort, we adopted the following policy:

- (i) a conference group comprises four or five trainee teachers and one NIE researcher or subject specialist;
- (ii) the trainee teachers in each group are located at different schools in Cluster N2;
- (iii) trainee teachers are allocated to their groups and are thoroughly briefed before going on TP;
- (iv) three periods are blocked off each group's teaching timetable and schools are asked not to timetable lessons or other duties during this MDVC time;
- (v) MDVC trainee teachers, accordingly, teach three fewer periods a week than non-MDVC trainee teachers;
- (vi) participants are provided with a conference agenda and asked to prepare beforehand for each topic;
- (vii) discussion topics cover the main teaching competencies, and fifteen minutes of free discussion (without an NIE chairperson) is provided at the end of each session;
- (viii) the schools make available their technical assistant to assist the trainee teachers.

We believe that these emerging protocols are crucial to the success of the project. In some cases, they are the result of

hard lessons learnt from earlier mistakes. The schools, however, have given their full cooperation; the technical assistants have worked closely with the project's technical officer to solve a range of problems; and the trainee teachers have invariably been well prepared. Numerous technical lessons have been learned that allow conferences of around one to one and a half hours to take place routinely with good quality video and audio. However, because of the complexity of the system, very simple problems such as a loose microphone connection on one of the PCs can have still create havoc through the system. For these reasons we have found it necessary to make our trainees as self-sufficient as possible so that they can ensure that their systems are configured properly and that they know how to solve common problems.

Technical achievements to date have included the sharing of text, digital photographs, digital video clips, Web pages and PowerPoint presentations during MDVC sessions. For example, it has been possible for trainees to share their lesson plans, examples of their pupils' work, video sites that they have found useful for teaching materials and so on. Perhaps the greatest achievement, though, has been the making and sharing of digital video clips by the trainees. Beginning in late 2000, trainees had been asked to make a short three minute digital video clip of themselves demonstrating a teaching competency. The clips were then sent to NIE by file transfer protocol (FTP) and put on the project website in a password protected area. Trainees then watched them before, during and (sometimes) after the MDVC conference. This allowed discussions to be grounded in recent practice

A wide range of data has been collected and is currently being analysed. This includes analysis of video recordings of MDVC sessions, trainees' logs, pre-and post-lesson questionnaires and focus group discussions. Analysis of data collected earlier is highly positive with trainees citing a range of advantages, ranging from being more at ease in discussions with peers and research staff and feeling 'less alone' on TP, to valuing the sharing of ideas and experiences. Typical comments about the making of lesson video clips were: "Very excited, gain experiences, eager". "Was a great experience. Learnt how to operate a video camera and how best to capture a lesson". "Nervous, worried, curious". "It is interesting. Especially since I had the opportunity to help another trainee. Allows me to sit in during her lesson and learn as well". "Enjoyable experience". "Excited, nervous. Felt like a movie star for a moment". There is evidence too of improvements to the quantity and quality of discourse, which is a main focus of the study.

In the Mentor study, one group of SCMs has collaborated through regular meetings in the conventional way, while another group met "on-line" through MDVC. All the participants endorsed the positive impact of such networking on their confidence and effectiveness in the performance of the SCM role and on their own professional development

in general. The findings also showed that the benefits were significantly greater for the group that had their sharing on-line using MDVC. The main reason was that MDVC made possible more frequent meetings as it required no traveling. It was also because of the convenience in sharing and exchange of experiences and materials, the time-saving advantage, and the focused, professional dialogue during the meetings. These results are a clear demonstration of the importance of networking in facilitating the professional development of teachers, and the great potential there is in harnessing modern technological advances (in this case, MDVC) for improving teacher education and teacher professional development.

#### Future Developments

There are numerous possibilities for building on the experience of the MDVC project. This is particularly so given that new, Web-based versions of the CU-SeeMe software are coming on stream that dispense with the need for end-user software. Clearly, there are great possibilities for principals and superintendents to conference regularly with each other from their own desks, as well as for teachers to share ideas and resources. Pupils, too, will be using MDVC in preference to handphones. Anyone familiar with recent developments in on-line games will easily see the potential.

MDVC could be developed to further improve NIE's partnership model. When compared with developments in Initial Teacher Education elsewhere, for example in the UK, it is clear that NIE has responded in a unique way to the challenges of globalisation and the knowledge-based society. In particular, the university's role in initial teacher education is still highly valued in Singapore. MDVC offers one way of developing a distinctive partnership between the schools and NIE such that NIE staff can be more fully involved in their trainees' school-based practice. What we have in mind in the first instance is a pilot study that involves the designing of a structured, developmental Teaching Practice for around 20 – 30 NIE trainees. It would be planned jointly by NIE staff and school personnel to take into account both content taught at NIE and school curriculum. A regular programme of MDVC conferences would enable NIE staff to hold regular conferences with the trainees and school staff, thus allowing a regular sharing of ideas and experiences. Our experience to date suggests to us very strongly that the weekly contact between NIE and the schools that is a central feature of the MDVC project in itself does much to concretize the notion of partnership. But the real gain in such an arrangement would be the bringing to bear on the trainees' experience the differing expertise of both NIE staff and school-based practitioners.

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