Can ICTs Help Student Teachers Overcome Teaching Challenges Encountered During their Field Practice ? The Case of 1723 Student Teachers from Montreal (Canada)

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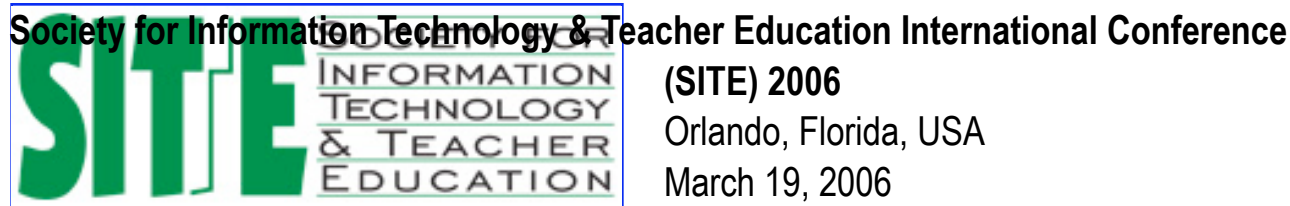
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Abstract

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Abstract
Practical training is an important aspect of teacher education programs in Quebec (Canada)
universities. Student teachers spend one hundred and twenty days of their four-year university
program interning in high schools in order to progressively develop their professional skills
within their chosen field. The present study proposes to enhance understanding of the potential
advantages of information and communication technologies (ICTs) in practical teacher training
(field practice). More specifically, it aims to shed light upon how ICTs help student teachers
overcome teaching challenges encountered during field practice. Results presented are taken
from a pilot study conducted during the internship of 800 student teachers from the province of
Quebec (Canada).

Objective
        The present study proposes to enhance understanding of the potential advantages of
information and communication technologies (ICTs) in practical teacher training (field practice).
More specifically, it aims to shed light upon how ICTs help student teachers overcome teaching
challenges encountered during field practice. Results presented are taken from a pilot study
conducted during the internship of 800 student teachers from the province of Quebec (Canada).

Context
        Practical training is an important aspect of teacher education programs in Quebec
(Canada) universities. Student teachers spend one hundred and twenty days of their four-year
university program interning in high schools in order to progressively develop their professional
skills within their chosen field. For Nault and Nault (2001), internships give teachers-to-be an
opportunity to test themselves in schools. In Canada, teacher training programs focus on the
development of professional skills that should be anchored in places of professional practice.
Internships in schools are opportunities to experience professional competencies in a real
context, as well as to evaluate their attainment. Therefore, it becomes essential that *"educational
institutions continue to provide students with opportunities to live hands-on experiences"*
(Government of Quebec, 2001, p.217). Student teachers thus have the chance to show that they
possess the skills to be professionals.
        Nault and Nault (2001) point out that supervising professors are often called upon to
leave the university to observe interning students in class, even when these students are in remote
schools. In Quebec, aside from the fact that professors often travel long distances to supervise
one student, thus generating considerable loss of time, they are also asked to take on an
increasing number of interns or to visit their students more often in class. When some students
are in such remote areas that a visit can take all day, even if the temperature allows for a same-
day return, supervision can be a daunting task. In this context, it is also difficult for supervising
professors to maintain a continued collaboration with the supervising teachers and their students
between visits.
        This context is not only of great inconvenience to supervising professors, it is also
frustrating for the student and the supervising teacher, both of whom deplore the decreased
availability of professors and other university staff (Bourbeau, 1997). Furthermore, many
studies including those of Barker (1986); Zeichner (1992); O'Neill (1996); Venn, Moore and
Gunter (2000) have shown that interning students often feel isolated during their practicum and

have few, if any, opportunities to share their experiences with their peers. Nault and Nault (2001) suggest that a way to break students out of their isolation would be to have them share their daily classroom happenings with others experiencing the same situation.

Integrating ICT's : the challenge and the future of teacher training

With the increasing disparity between technology's relatively discreet presence in classrooms and its ever increasing popularity in the society at large, it has become imperative for universities, and especially faculties and departments involved in teacher training, to bridge this technological gap. As the government of Quebec (Canada) undertakes the refurbishing of teacher training programs, the need to promote the potential of information and communication technologies (ICTs) and their use by future teachers is self-evident, not as an appendage to their training, but rather as part of a global and transversal approach which should impact upon the entire teacher training process.

Method

Subjects

A total of 800 preservice teachers (682 females and 118 males) enrolled in a four-year teacher education program were selected to participate. Subjects had a mean age of 22 years old.

Measures and analyses

A questionnaire was administered to all participants. Various questions were asked to student teachers in order to better understand how information and communication technologies can help them overcome teaching difficulties encountered during their field practice. Data was analyzed using FilemakerPro 7© through a grounded theory approach, or more precisely through a process called ethnographic content analysis (Altheide & Johnson, 1994). This type of content analysis uses many of the traditional content analysis procedures (e.g. Huberman & Miles, 1994), but also the back-and-constant comparison that grounded theory applies (Tesch, 1990). Within this general qualitative analysis framework, data analysis for all the data collected involved generating concepts through the process of coding which "represents the operations by which data are broken down, conceptualized, and put back together in new ways. It is the central process by which theories are built from data." (Strauss and Corbin, 1990, p. 57.). Our coding of all the data consisted of three phases : induction (reading all the data so that concepts or codes could emerge), deduction (we coded all the data and had to label each segment) and verification (all coded data was verified). We first opted for an analytical induction technique (e.g. Strauss and Corbin, 1990) to derive coding concepts from the data. Finally, the reiterative verification of coding enabled further adjustments and refinements to the concepts. The process was continued until we reached a point where no additional coding of the data contravened the refined concepts.

Presentation and Analysis of Results

In this section, we first present a synthesis of the challenges encountered by student teachers during their practicum, as reported in their answers in the questionnaire. Second, we highlight how information and communication technologies can help student teachers overcome these difficulties.

Main challenges encountered by student teachers during their practicum

As highlighted in Table 1, the main obstacle with which student teachers are faced during their field practice is their overall ability with classroom management. In fact, classroom management is highlighted as a great difficulty by near of 40 % of student teachers. Taking charge of one's authority, being assertive and able to enforce rules, dealing with difficult students, all are among the examples of challenges linked to classroom management. Planning and evaluation are mentioned by almost 25 % of preservice teachers. The quality and quantity of

material resources also represent a difficulty. Student teachers underline that teaching material is often out-dated, not accessible and often imposed by the cooperating teacher; more than 10% of preservice teachers mention this particular difficulty. The school context in which the field practice occurs is another source of challenge for student teachers: the pedagogical organization of the school (number of students per class, for instance), the characteristics of the students or milieu (multi-ethnic clientele, at-risk students, underprivileged environment). Nearly one of every 10 student teacher highlights one of these characteristics as a difficulty. It is interesting to note that the greatest challenge underscored by a significant number of students teachers (3%) is linked to a non-mastery of the teaching language, oral or written, within their teaching activities.

Another type of difficulty encountered stems from the student-teaching experience itself. Thirteen percent of student teachers point to the guidance of the supervising teacher as an obstacle: insufficient guidance in terms of feedback, support, availability or interest; not enough leeway afforded to the student-teacher; a counter-model, someone who is negative, bitter, or who displays an inappropriate attitude towards the students; a situation of conflict between supervising teacher and student teacher. Other aspects related to the organization of the field practice create difficulties for approximately 7% of student teachers, particularly the distance between their home and the school, as well as certain requirements of the field practice (writing the report, participating in seminars).

Finally, more than 10% of student teachers mention personal difficulties, such as a lack of self-confidence, stress caused by the context of the field-practice, or even financial difficulties and the challenge of reconciling the requirements of the field practice with paid employment. It should be noted that other categories of difficulties are highlighted but by fewer student teachers, for instance the challenge of finding one's place within the school staff.

Table 1 : Main difficulties encountered by student teachers during the practicum (n = 800)

Difficulty	*Percentages*
Classroom management	36.4
General teaching abilities (planning, evaluation)	24.9
Guidance provided by and teaching philosophy of cooperating teacher	12.6
Teaching resources	11.1
Teaching context (number of students per class, social and cultural context, multi-level classrooms, parents, types of students, etc.)	9.3
Personal characteristics (self-confidence, anxiety, openness, etc.)	8.8
Organization of the practicum (placement, distance, evaluation, length, etc.)	6.1
Integration in field context (communication with other teachers in the school, etc.)	3.4
Parents	2.9
Language (code mastery, communication, etc.)	2.6
Teaching subject	1.3
Guidance provided by university supervisor	1.1

How ICTs help overcome teaching difficulties

Overall, as highlighted in Table 2, information and communication technologies seem to help student teachers overcome a great array of teaching challenges or difficulties encountered during their practicum. The greatest advantage of using technologies appears to be the variety of activities that can be undertaken in the classrooms, as reported by 60 % of all student teachers. ICTs appear to help student teachers diversify both their teaching strategies and the activities they expect learners to accomplish.

As reported by 29 % of future teachers, ICTs help them to be more professional as they allow them to have an increased access to a great variety of up-to-date resources to improve teaching/learning activities. More than 22 % of respondents emphasize the fact that technologies help them present new concepts, theories or ideas. Many future teachers note that ICTs help nurture student motivation, an important challenge, especially at the high school level. Almost 21 % reported that students are interested by ICTs and that it makes learning more fun, interesting for learners. Student teachers report that ICTs are a very useful means to increase communication with various people involved in their field practice (cooperating teacher, university supervisor, colleagues and peers, other professors, parents, etc.). In fact, many appreciated using ICTs to communicate. These allowed them to share ideas, to talk about problems and to get over difficult moments which, according to most, are easier to deal with when you know that others are also faced with them. We believe that our results demonstrate that the use of information and communication technology increases collaboration and communication during the practicum. The social interactions supported by ICTs are no longer limited by time and space, they significantly transform and broaden the social space of collaborative learning. Our observations on the number and content of interactions revealed an active and encouraging participation of student teachers, no matter where they were. The frequent collaboration highlighted in the sharing of experiences promotes solidarity and helpfulness. Interns develop bonds within a dynamic learning community, which helps them to feel encouraged and confident in the development of their professional skills.

Finally, it is interesting to note that less than 4 percent of future teachers reported that ICTs were useless in helping them overcome teaching challenges encountered during their practicum.

Table 2 : How ICTs help overcome teaching difficulties

Difficulty overcame with ICTs	Percentages
Help create a variety of learning activities	60.0
Increase access to a variety of teaching resources	29.0
Help presentation of new concepts, theories, ideas, etc.	22.0
Help motivate learners	21.0
Help communicate with various education or school stakeholders	15.0

Discussion

Analysis of the data gathered thus far leads us to believe that information and communication technologies (ICTs) help student teachers in various ways to face pedagogical and other challenges encountered during their practicum. ICTs allow student teachers to profit from a vast network which can help them maximize their academic performance and even increase their well-being in sometimes difficult situations such as can occur in schools. We feel that ICTs are a challenge for those responsible for practical teacher training, and that this challenge must be met head-on, through innovative pedagogical practice as well as through future research to be presented in this paper presentation.

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