

**Can ICT Help Student Teachers Overcome Teaching Challenges  
Encountered During their Internship? The Case of 800 Student Teachers  
in Montreal, Canada**

**Thierry Karsenti<sup>1</sup>, Simon Collin<sup>2</sup>**  
**[thierry.karsenti@umontreal.ca](mailto:thierry.karsenti@umontreal.ca), [simon.collin@umontreal.ca](mailto:simon.collin@umontreal.ca)**

<sup>1</sup>Université de Montréal

<sup>2</sup>Université de Montréal

### Abstract

Practical training is an important aspect of university teacher education programs in Quebec, Canada. Student teachers spend 120 days of their four-year university program interning in secondary schools in order to develop their professional skills in their chosen field. This study proposes to deepen our understanding of the potential benefits of information and communication technologies (ICT) for practical teacher training (internship). More specifically, it aims to shed light on how ICT help student teachers overcome teaching challenges encountered during the internship. Results of a pilot study conducted during the internship of 800 student teachers in the province of Quebec, Canada are presented.

### Objective

This study proposes to deepen our understanding of the potential benefits of information and communication technologies (ICT) for practical teacher training (internship). More specifically, it aims to shed light on how ICT help student teachers overcome teaching challenges encountered during the internship. Results from a pilot study conducted during the internship of 800 student teachers in the province of Quebec, Canada are presented.

### Context

To set the context for our study, we begin by underscoring the important role of internships in initial teacher education programs in Quebec, along with some problems liable to be encountered in this context. We then discuss the potential of ICT to support student teachers, which is the object of this study.

#### *The importance of internships in initial teacher training in Quebec*

Practical training is an important aspect of university teacher education programs in Quebec, Canada. Student teachers spend 120 days of their four-year university program interning in secondary schools in order to develop their professional skills in 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 are anchored in the professional practice. School internships are opportunities to apply professional competencies in a real context and to evaluate their attainment. Therefore, it becomes essential that “*the university community must have more opportunities to experience real-life teaching firsthand*” (ministère de l’Éducation du

Québec (MEQ), 2001, p.27). This gives student teachers a chance to show that they possess the skills to become professionals.

During the internship, student teachers are supervised by two educators: 1) the university supervisor, who regularly makes visits to observe student teachers in practice; and 2) the cooperating teacher, usually a classroom teacher who temporarily mentors the student teacher. The supervising professor is therefore key to helping future teachers transfer their academic knowledge into practice. At the other end, the supervising teacher plays a front-line role, coaching future teachers day-to-day and integrating them into the classroom and the teaching team. The two educators (university supervisor and cooperating teacher) collaborate to assess the student teacher. The assessment is based on a set of twelve professional teaching competencies, each made up of various components (ministère de l'Éducation du Québec (MEQ), 2001). The eighth competency is "*To integrate information and communication technologies (ICT) in the preparation and delivery of teaching/learning activities and for instructional management and professional development purposes*" (MEQ, 2001). Thus stated, ICT skills are transferable skills that can be applied to several aspects of teaching.

#### *Teaching internships in Quebec: a problematic context*

Nault and Nault (2001) point out that university supervisors are often required to leave the university to observe interning students in class, even when schools are a great distance away. In Quebec, aside from the fact that professors often travel long distances to supervise students, generating considerable time loss, they are also required to take on an increasing number of interns or to visit their students in the field more often. When students

are interning in areas so remote that a visit can take all day, assuming that the weather allows a same-day return, supervision can be a daunting task. In these circumstances, it is also difficult for university supervisors to maintain continued collaboration with the cooperating teachers and their students between visits.

This context is not only highly inconvenient for university supervisors, it is also frustrating for the students and supervising teachers, who deplore the decreased availability of professors and other university staff (Bourbeau, 1997). Furthermore, many studies, e.g., by Barker (1986), Zeichner (1992), O'Neill (1996), and Venn, Moore and Gunter (2000), have shown that interns often feel isolated during their internship and have few if any opportunities to share their experiences with their peers. Nault and Nault (2001) suggest that one way for students to escape their isolation would be to share their daily classroom experiences with others in the same situation.

*Integrating ICT: how does it support teacher interns?*

With the increasing disparity between technology's relatively discreet presence in the classroom and its ever increasing popularity in society at large, it has become imperative for universities, and especially education faculties and departments, to bridge this technological gap. In the wake of the reform of teacher training programs in 2001 (MEQ, 2001), and considering the importance placed on integrating ICT into these programs (Competency 8), the need to promote the potential benefits of ICT and their use by future teachers is self-evident, not as an appendage to their training, but rather as part of a global, cross-curricular approach throughout the entire teacher training process.

In this perspective, the pedagogical integration of ICT into teacher training programs is promising for two reasons: 1) it gives future teachers a chance to develop their skills in integrating ICT into their teaching practice (corresponding to Competency 8 in Quebec's teacher training program) in real classroom situations; and 2) it could help them overcome some of the problems identified in this study. For example, online interactive environments would enable future teachers to escape the isolation of their internship, besides making it easier for university professors to monitor their progress (Karsenti, Lepage, & Gervais, 2002).

## Method

Recall that the aim of this study was to better understand how ICT help student teachers overcome teaching challenges encountered during the internship. This section presents the methodology we used to investigate this issue.

### *Subjects*

A total of 800 preservice teachers (682 women, 118 men) enrolled in a four-year teacher education program were selected to participate in the study. Subjects had a mean age of 22 years old. Subjects were enrolled in the second, third, and fourth year of a four-year secondary school teacher training program. First-year students were not included in the study because they have little internship experience at that stage. Our subjects therefore had a range of internship experience, from about 20 days of shared responsibility for a classroom (Internship 2) to 45 days of complete responsibility for all teaching tasks (Internship 4). However, for purposes of this initial exploratory analysis, we did not distinguish the participants by program year. Our goal was to identify overall trends among the entire sample. For the same reason, we did not account for the different subjects that the participants taught. This aspect would be addressed in later analyses.

### *Data collection and analysis*

Data were collected at the end of the participants' internships. A questionnaire was administered to all teacher interns in the second, third, and fourth years of a secondary school teacher training program, for a total of 1,140 potential participants. We received 800 completed questionnaires, for a 70% response rate. The questionnaire comprised two main parts: one addressing problems that teacher interns encountered in their internship, and the

other addressing the role and importance of ICT in overcoming these problems. Most of the questions were open-ended (aside from those designed to gather sociodemographic information) so as not to direct the respondents' answers. This was consistent with our exploratory approach. We then performed a content analysis of the responses, as described below.

Data were analyzed with FilemakerPro 7© using a grounded theory approach. More precisely, we used a process called ethnographic content analysis (Altheide & Johnson, 1994). This type of content analysis includes many of the traditional content analysis procedures (e.g., Huberman & Miles, 1994) in addition to the group feedback analysis and constant comparison methods used in grounded theory studies (Tesch, 1990). Within this general qualitative analysis framework, all collected data were analyzed by generating concepts through a coding process, or “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). We performed the data coding in three phases: induction (reading all the data to allow concepts or codes to emerge), deduction (coding all data and labelling each segment), and verification (verifying all coded data). We used an initial analytical induction (e.g., Strauss and Corbin, 1990) to derive categories of meaning, or coding concepts, from the data. We then reiteratively verified the coding to further define and refine the concepts . In the end nine concepts emerged to represent the problems that teacher interns encountered in their internship and the potential for ICT to overcome these problems.

#### Presentation and Analysis of Results

In this section, we first present a synthesis of the challenges that student teachers encountered during their internship, as reported in the questionnaires. We then outline how ICT can help them overcome these difficulties.

*Main challenges encountered by student teachers during their internship*

As shown in Table 1, the main obstacle that student teachers faced in their internship was overall classroom management. In fact, classroom management was reported as a major difficulty by almost 40% of the respondents. Assuming authority, being assertive, enforcing rules, and dealing with difficult students are some examples of classroom management challenges. Planning and evaluation were mentioned by almost 25% of respondents. The quality and quantity of material resources were also problematic. More than 10% of respondents stressed that teaching materials were often outdated, inaccessible, or imposed by the cooperating teacher. The school where the internship took place, including the school's pedagogical organization (e.g., number of students per class) and student or community characteristics (multi-ethnic clientele, at-risk students, underprivileged environment) posed a further challenge. Almost one out of every 10 respondents mentioned one of these characteristics as a problem. It noteworthy that a significant number of respondents (3%) reported that the greatest challenge was their insufficient mastery of the teaching language, oral or written, as part of their teaching activities.

Another type of problem stemmed from the student-teaching experience itself. Thirteen percent of respondents mentioned that the cooperating teacher (and less often, the

university supervisor) imposed an obstacle by providing insufficient guidance in terms of feedback, support, availability, or interest; by granting the student teacher insufficient leeway; by presenting a counter-model, with a negative, bitter, or inappropriate attitude towards the students; or by creating conflicts between the cooperating teacher and the student teacher. Other aspects related to the organization of the internship created problems for approximately 7% of respondents, particularly the distance between their home and the school, as well as certain internship requirements (e.g., writing the report, participating in seminars).

Finally, more than 10% of respondents mentioned personal problems, such as lack of self-confidence, stress caused by the internship context, or financial difficulties and the challenge of reconciling internship requirements with paid employment. Note that other problem categories were cited, but by fewer respondents: for instance, the challenge of finding one's place within the school staff.

Table 1: Main problems encountered by student teachers during the internship (n = 800)

<i><b>Problem</b></i>	<i><b>Percentage</b></i>
Classroom management	36.4
General teaching abilities (planning, evaluation)	24.9
Guidance provided by and teaching philosophy of cooperating teacher or university supervisor	13.7
Teaching context (e.g., number of students per class, social and cultural context, multi-level classrooms, parents, types of students)	12.2
Teaching resources	11.1
Personal characteristics (e.g., self-confidence, anxiety, openness)	8.8

Internship organization (e.g., placement, distance, evaluation, length)	6.1
Integration into the field context (e.g., communication with other teachers in the school)	3.4
Language (e.g., code mastery, communication)	2.6
Teaching subject	1.3

### *How ICT help overcome teaching problems*

As shown in Table 2, ICT appear to help student teachers overcome an array of teaching challenges and problems encountered during the internship. The greatest advantage of using ICT appears to be the variety of activities that teachers can undertake in the classroom, as reported by 60% of all respondents. ICT appear to help them diversify both teaching strategies and students' tasks.

As reported by 29% of respondents, ICT helped them be more professional, as they gave them increased access to a great variety of up-to-date resources to improve their teaching/learning activities. More than 22% of respondents emphasized that ICT helped them present new concepts, theories, and ideas. Many noted that ICT helped nurture student motivation, a considerable challenge, especially in secondary school. Almost 21% reported that students were interested in ICT, and that ICT made learning more interesting and fun. Respondents also reported that ICT were a very useful way to increase their communication with various people involved in their internship (e.g., cooperating teacher, university supervisor, colleagues, other teachers, parents). In fact, many appreciated using ICT to communicate, as it allowed them to share ideas, talk over problems, and get past difficult moments, which, according to most, were easier to deal with when they knew that others

were facing them as well. Our results show that the use of ICT increased collaboration and communication during the internship. ICT-supported social interactions have no time or space limits, and they can significantly transform and broaden the social space of collaborative learning. Our findings on the number and content of interactions, which is the object of another study in progress, with a different aim, reveal an active and encouraging participation by student teachers, whatever their location. The frequently mentioned collaboration and sharing of experiences promote solidarity and mutual assistance. Teacher interns develop bonds within a dynamic learning community, which encourages them and boosts their confidence in developing their professional skills.

Finally, it is noteworthy that less than 4% of respondents reported that ICT were useless in helping them overcome the teaching challenges they encountered in their internship.

Table 2: How ICT helped overcome teaching problems

<i>How ICT overcame the problem</i>	<i>Percentage</i>
Helped create a variety of learning activities	60.0
Increased access to a variety of teaching resources	29.0
Helped present new concepts, theories, ideas, etc.	22.0
Helped motivate learners	21.0
Helped them communicate with various education and school stakeholders	15.0

## Discussion

In light of the relevant literature, we note that our results on the problems of teacher interns are similar to those encountered in the transition to professional practice, and are particularly relevant to the issue of teacher dropout. Classroom management heads the list of problems reported by our surveyed teacher interns. This result is consistent with the literature on new teachers, for whom classroom management is the greatest concern (Evertson & Weinstein, 2006; Kagan, 1992; Veenman, 1984). Other general teaching abilities, such as planning and evaluation, are also considerable problems for teacher interns. This is understandable, given that they are in the process of developing their professional skills at this point. The guidance and the teaching philosophies of cooperating teachers and university supervisors and cooperating teachers constitute the third most often reported problem by our teacher interns. The literature review by Hobson, Ashby, Malderez & Tomlinson (2009) on mentoring beginning teachers concurs with this finding. These authors noted that successful mentoring depends on a number of conditions in the environment, and that these conditions vary considerably across educators. They identified three potential limitations of mentoring: lack of support by the educator; inversely, lack of autonomy granted to the teacher intern in developing professional skills; and an exaggerated focus on technical aspects of teaching, to the detriment of more fundamental pedagogical issues. In our case, some of our results, such as the lack of feedback, support, availability or interest and insufficient leeway granted to the teacher intern, appear to fall under the first limitation identified by Hobson et al. (2009). On the other hand, we obtained other results, arguably more extreme, that were not covered in the literature review by Hobson et al. (2009). For instance, one educator was characterized as a counter-model:

someone who is negative, bitter, or who displays an inappropriate attitude towards the students or who creates conflicts between cooperating teachers and student teachers. The teaching context, which we identified as the fourth problem that teacher interns encountered, appears to echo several motives cited in the literature for teacher dropout, for example, difficult relationships with parents (Certo & Fox, 2002; Gonzales, 1995; Macdonald, 1999; OECD, 2005) or with students (Chaplain, 2008; Gonzalez, Brown & Slate, 2008; Kirsch, 2006; Ingersoll, 2001; Macdonald, 1999; OECD, 2005). The lower socio-economic status among the teacher interns in our study would also be likely to make problems for beginning teachers. Again, these are dropout factors (Boyd, Lankford, Loeb & Wyckoff, 2005; Loeb & Darling-Hammond, 2005). From the similarities between the problems encountered by teacher interns and beginning teachers, we may cautiously argue that the problems that future teachers face in their internships remain much the same as they enter professional practice. In this view, the teaching internship would be an integral part of the transition to professional practice.

Concerning the potential of ICT to overcome problems encountered by teacher interns, it is noteworthy that the first three potential benefits that we identified appear to testify to good ICT integration into teaching practices during the internship. These results contrast with the literature, which generally reports that teacher interns are more concerned with issues other than ICT (Davis, Petish & Smithey, 2006). This discrepancy may be attributable to the fact that our study focuses on the benefits of integrating ICT into the teaching internship, and not on the problems that future teachers have integrating ICT into their practice. Note also that the second potential benefit of ICT (Increased access to a

variety of teaching resources) appears to respond directly to the fourth most often mentioned problem by teacher interns (Teaching resources). ICT as a source of motivation for learning constitutes our fourth potential benefit. This finding is well supported by the literature on ICT in education (see the literature review by Balanskat, Blamire & Kefala, 2006). The same holds true for the last potential benefit of ICT (Helped them communicate with various education or school stakeholders), which is also frequently cited in the literature (Karsenti, 2005; Lameul, 2008), and which appears particularly relevant for rural schools (Winstead Fry & Bryant, 2007).

An analysis of the data gathered so far suggests that ICT help student teachers cope with pedagogical and other challenges encountered during their internship in various ways. ICT allow student teachers to take advantage of a vast network in order to maximize their academic performance, and even increase their well-being in the sometimes difficult situations that can occur in schools. Although ICT may be challenging for internship supervisors, these challenges should be met head-on through innovative pedagogical practices and further research.

## References

- Altheide, D. L., & Johnson, J. M. (1994). Criteria for assessing interpretive validity in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 485-499). London: Sage.
- Balanskat, A., Blamire, R., & Kefala, S. (2006). *The ICT impact report. A review of studies of ICT impact on schools in Europe*. European Communities: European Schoolnet.
- Barker, B. (1986). *Efforts to improve the preparation of teachers for rural schools*. (ERIC Document Reproduction Service No. ED265993)
- Bourbeau, L. (1997). *La formation pratique à l'enseignement : l'organisation des stages en milieu scolaire : rapport d'enquête*. Québec : FECS.
- Boyd, D., Lankford, L., Loeb, S., & Wyckoff, J. (2005). Explaining the short careers of high-achieving teachers in schools with low-performing students. *American Economic Review*, 95(2), 166–171.
- Certo, J. L., & Fox, J. (2002). Retaining quality teachers. *High School Journal*, 86(1), 57-75.
- Chaplain, R. P. (2008). Stress and psychological distress among trainee secondary teachers in England. *Educational Psychology*, 28(2), 195-209.
- Davis, E. A., Petish, D, & Smithey, J. (2006). Challenges new science teachers face. *Review of Educational Research*, 76(4), 607–651.
- Evertson, C.M., & Weinstein, C.S. (2006). Classroom management as a field of inquiry. In C.M. Evertson and C.S. Weinstein (Eds.), *Handbook of classroom management:*

- Research, practice, and contemporary issues* (pp. 3–16). Mahwah, NJ: Lawrence Erlbaum Associates.
- Gonzales, P. (1995). *Factors that influence teacher attrition*. Alexandria, VA: National Association of State Directors of Special Education. (ERIC Document Reproduction Service No. ED389127).
- Gonzales, L., Brown, M. S., & Slate, J. R. (2008). Teachers who left the teaching profession: A qualitative understanding. *The Qualitative Report, 13*(1), 1-11.
- Gouvernement du Québec (2001). *Teacher training: Orientations. Professional Competencies*. Québec: Ministère de l'Éducation du Québec.
- Hobson, A., Ashby, P., Malderez, A., & Tomlinson, P. (2009). Mentoring beginning teachers: What we know and what we don't. *Teaching and Teacher Education, 25*, 207–216.
- Huberman, A. M., & Miles, M. (1994). Data management and analysis methods. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 428-444). London: Sage.
- Ingersoll, R. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal, 38*(3), 499-534.
- Kagan, D. M. (1992). Professional growth among preservice and beginning teachers. *Review of Educational Research, 62*(2), 129-169.
- Karsenti, T. (2005). Développer le professionnalisme collectif des futurs enseignants par les TIC : bilan de deux expériences réalisées au Québec. *Recherche et Formation, 45*, 73-

90.

Karsenti, T., Lepage, M., et Gervais, C. (2002). Accompagnement des stagiaires à l'ère des TIC : forum électronique ou groupe de discussion? *Formation et profession*, 8(2), 7-12.

Kirsch, R. (2006). *L'abandon volontaire de la carrière chez des enseignants débutants du primaire et du secondaire au Québec*. Mémoire de maîtrise non publié, Université de Montréal, Montréal, QC, Canada.

Lameul, G. (2008). Les effets de l'usage des technologies d'information et de communication en formation d'enseignants, sur la construction des postures professionnelles. *Savoirs*, 17, 73-94.

Loeb, S., Darling-Hammond, L., & Luczak, J. (2005) How Teaching Conditions Predict Teacher Turnover in California Schools. *Peabody Journal of Education*, 80(3), 44-70.

Macdonald, D. (1999). Teacher attrition: A review of literature. *Teaching and Teacher Education*, 15(8), 835-848.

Ministère de l'éducation du Québec. (2001). *Teacher training: Orientations, Professional Competencies – New Directions for Success*. Québec: Publications Québec

Nault, T. & Nault, G. (2001). Quand les stages attrapent les TIC. In T. Karsenti & F. Larose (dir.), *Les TIC... au cœur des pédagogies universitaires*. Québec : Presses de l'Université du Québec.

- O'Neill, A. (1996). *Increasing reflective instructional decision-making by clinically supervising teachers using telecommunications*. Proceedings of the annual national educational computing conference, Minneapolis, MN, June 11-13.
- OECD. (2005). *Attracting, Developing and Retaining Effective Teachers – Final Report: Teachers Matter*. Paris, France: OECD Publications.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park: Sage.
- Tesch, R. (1990). *Qualitative Research*. New York: The Falmer Press.
- Venn, M. L., Moore, R. L. & Gunter, P. L. (2001). Using audio/video conferencing to observe field-based practices of rural teachers. *Rural Educator*, 22(2), 24-27.
- Veenman, S. (1984). Perceived problems of beginning teachers. *Review of Educational Research*, 54(1), 51–67.
- Winstead Fry, S., & Bryant, C. (2007). *Using Distance Technology to Sustain Teacher Education for Student Teachers in Isolated Areas: The Technology Supported Induction Network*. *Journal of Computing in Teacher Education*, 23(2), 63-69.
- Zeichner, K. (1992). Rethinking the practicum in the professional development school partnership. *Journal of Teacher Education*, 43(4), 296-307.

