

THE APPROPRIATION OF KNOWLEDGE: GOING BEYOND TRANSFER!



CHARLES-ANTOINE BACHAND
Assistant to the Academic Dean
Cégep de l'Outaouais

Some people might be surprised at the difficulty in transferring what we learn from college research to our teaching practices, despite the fact that this has often been observed and stated. It might be surprising because college researchers are first and foremost teachers whose daily work is centred on facilitating the transfer of knowledge, social skills and know-how. Many plunge into research in the hope that it will prove useful or that it will help colleagues in their teaching practices. However, sometimes we forget the importance of not only sharing research results but of smoothing the way when these results clash with the realities of current practices. It may be that we occasionally forget that we can't fully control how our published research findings will be interpreted by practitioners. Perhaps we should be looking into dynamic transfer of knowledge, that is, two-way communication on what we are investigating, how professionals interpret our results, and how our conclusions might be applied. Maybe we should be targeting a form of sharing more in keeping with a concept of appropriation than a concept of transfer.

Transferring specific knowledge quickly cropped up as a prime issue in Christian Barrette's metasynthesis for ARC (Association pour la recherche au collégial) on conditions promoting the successful integration of IT in the classroom and in teaching practices (Barrette 2009a). Occasionally, a minor bump can spur major reflection. Christian Barrette experienced one of these minor bumps while presenting his preliminary results. After laying out the core issues in his work, methodology, sources and some preliminary findings – the product of several months' work –, someone in the audience hesitantly raised a hand and let fly a question that struck home, saying that all of that was well and good, but could the researcher summarize it in a few lines, thus making it much easier to apply the results. This raised the issue of how the study's findings could be transferred and in what form, such as seminars, a series of scientific articles, workshops and so on. How could the researcher respond to this request while taking into account statements from his peers and other stakeholders?

After completing his metasynthesis and having worked on formalizing the expert knowledge, the researcher was faced

with the question of transferring the results. His way of responding to this query led to a particularly interesting experiment in appropriation, which may provide insights to others seeking to share their research findings.

FROM EXPERT KNOWLEDGE TO NETWORKING

After certain conclusions of his metasynthesis were validated (in research and practice) by the experts involved in the integration of IT in college teaching, Barrette began building a model and developing a theoretical basis in conjunction with college practitioners. This work was aimed at enriching the model with conditions that would facilitate the integration of IT into teaching practices and at helping stakeholders appropriate lessons from this model. With this end in mind, Barrette chose to question all members in the IT network (Réseau des répondantes et répondants TIC [Réseau REPTIC]), an organization representing technopedagogical advisors in Québec colleges.

Upon completion, this collaborative work with REPTICs yielded three findings that seem of particular interest both with respect to the metaresearch and to activities translating research findings into practice. As will be seen later on, the exercise did, in fact, make it possible to add theoretical elements to a model initially based on research, to create a professional tool developed jointly by research and teaching professionals and to promote a true appropriation of research by the primary stakeholders in the milieu.

MODELIZING AND THEORIZING BY A NETWORK OF PRACTITIONERS

The first outcome of this rich collaboration between the researcher and the REPTIC network was a modelizing and theorizing activity that enhanced the conclusions of the research.

The activity, which took place in February 2009 at one of the REPTIC's three annual meetings, was set up by the researcher to highlight and take advantage of the experience of professionals working in the area of IT integration. Participants received a brief scenario that explained the REPTIC's position as an intermediary within the organizational framework of his work, located at the interface between teacher requests and needs, material and budget constraints, and policies and



directions established by computer-services and educational-services departments. After the presentation, participants were asked: “In your opinion, what organizational conditions are most likely to foster effective educational use of IT in your college?”

In order to facilitate exchanges between the different REPTIC representations and to formalize their remarks, the moderators presented the results of the metaresearch to them only after they had answered the question. Meanwhile, a list of 25 concepts derived from the metaresearch material was proposed to responders to get the task underway. Divided into seven teams, the REPTICs were to answer the questions in the form of cognitive maps, that is, diagrams integrating the key concepts linked by verbs to express powerful ideas as simple propositions, each with a subject, verb and object. The propositions thus produced were then collected by the researcher with the aim of organizing and of integrating their meanings into the metaresearch.

As mentioned earlier, this first activity had a dual objective. Initially, the researcher was hoping to flesh out his conceptual framework with the representations of practitioners. Then, the team of moderators was hoping to facilitate the task of the REPTICs in appropriating the conclusions of the metaresearch. To reach this double objective, all propositions put forth by the participants were inventoried and divided into 82 distinct concepts. In all, the REPTICs supplied 178 original propositions that enriched the empirical data gathered through ARC’s metaresearch.

The REPTICs’ propositions were not independent ideas, but rather so closely interrelated that it was possible to interconnect them by following the links provided by the REPTICs themselves. Thus, from one idea to another, the thread of a shared reflection was woven by the REPTICs as professionals when it comes to the organizational conditions likely to establish effective educational use of IT. In an effort to illustrate the results of their thinking, the researcher returned to the REPTICs seven cognitive maps, each focusing on one of the seven concepts they had flagged as important during the exercise in shared cognition. The seven maps related to:

1. the institutional plan for integrating IT;
2. financial resources;
3. material resources;
4. human resources;
5. staff IT development;
6. a management favourable to IT; and
7. the IT Rep.

These maps, produced using CMap Tools software, are available on a CCDMD (Collegial Centre for Educational Materials Development) server that REPTICs can access from their community Web site.¹ To make it easier to navigate between maps, the main concepts on each one have hyperlinks to the maps corresponding to core concepts. Thus, REPTIC members can start with a highly meaningful concept, jumping from map to map, as they read and connect the propositions within a relevant line of reasoning.

For example, the important concept of “Staff IT Development” is illustrated in the concept map in [Figure 1](#).

[...] the exercise did, in fact, make it possible to add theoretical elements to a model initially based on research, to create a professional tool developed jointly by research and teaching professionals and to promote a true appropriation of research by the primary stakeholders in the milieu.

This concept map sheds light on what the REPTICs have to say about it, based on the schematization they produced as a group:

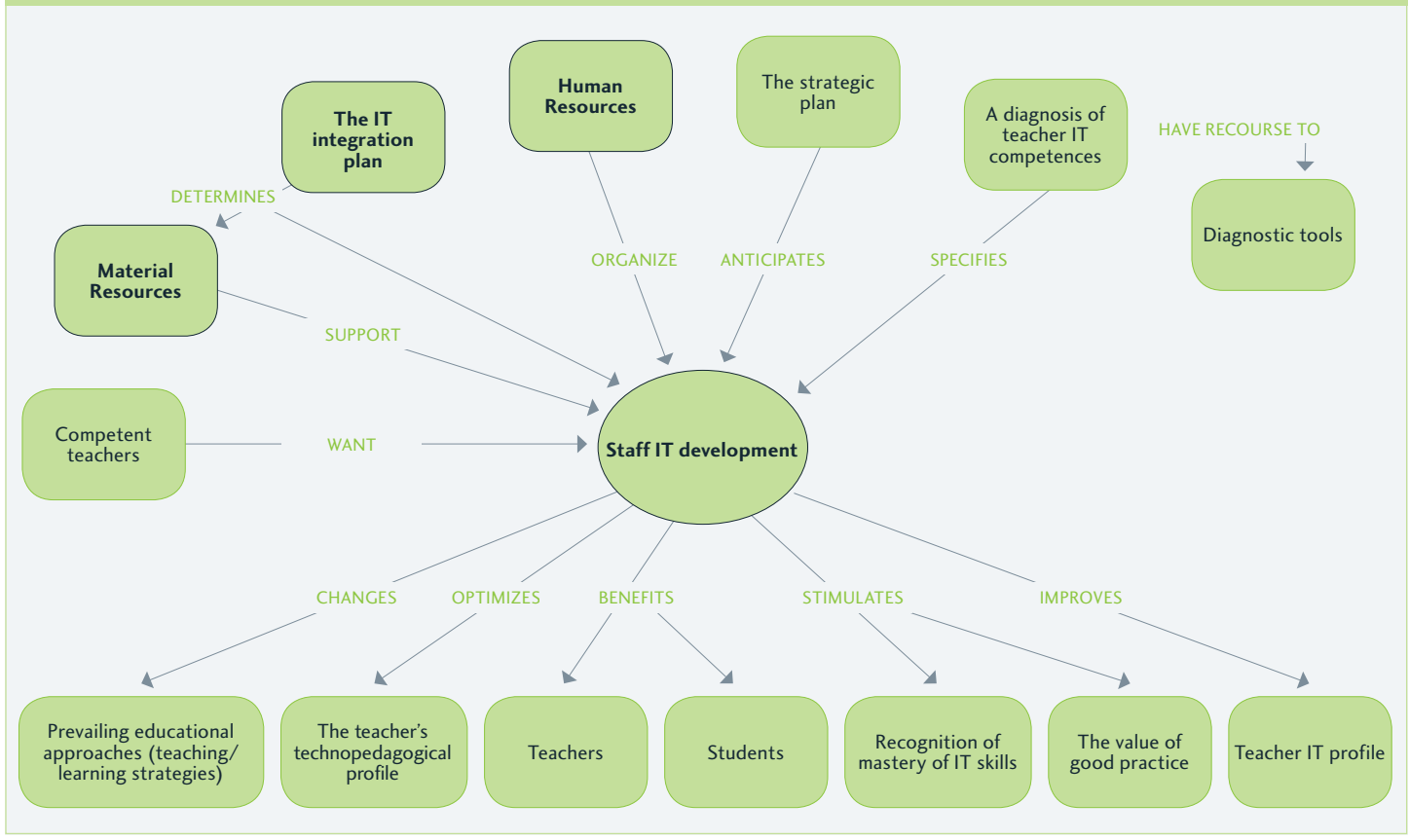
Staff IT development plays a crucial role in optimizing the organizational conditions conducive to effective use of IT in education. It is to some degree the motor that drives teachers toward mastering IT skills. Analyzing these skills and their various stages of development makes it possible to establish an IT profile and a technopedagogical profile for teaching staff. This development can also be said to promote better practices in integrating IT into education. As a result, it brings additional elements to the process of transforming prevailing educational approaches during this reflection on teaching/learning strategies. Therefore, the outcomes of this development not only concern teachers, but students as well.

*Staff IT development depends on key organizational factors. It can be one of the objectives in an institution’s strategic plan or part of its IT integration plan. Its implementation and development require both **human resources** and **material resources**. Even though competent teachers can be expected to participate willingly, sound planning will ensure that this development program results from an ongoing process of assessing skill levels and uses effective tools to achieve this end.*

¹ [<http://www.reptic.qc.ca/dossiers/conditions-integration-tic-reussie/conditions-presentation-cartes.html>] (accessed April 25, 2011).



FIGURE 1 – CONCEPT MAP OF STAFF IT DEVELOPMENT ACCORDING TO REPTIC



In the above text, which can be viewed as a kind of expose or brief overview, the concepts appearing in bold are linked to their own maps. When taken as an aggregate, the shared cognition exercise carried out by the REPTICs generated a mass of knowledge about the proposed theme. A review of this state of knowledge may prove useful not only to the REPTICs but more specifically to newcomers to their community, or those who want to interact with them: managers, professional colleagues from other areas, and teachers.

In essence, making use of cognitive maps allowed the REPTICs to build models and develop theories of their realities and practices. Beyond the wealth of data collected by the researcher (outlined above), this exercise was instrumental in initiating a real appropriation of research findings by a community of practitioners.

DEVELOPING A PROFESSIONAL TOOL BASED ON RESEARCH: AN ANALYSIS GRID

The second outcome of this collaborative work between the researcher and REPTIC members was developing and creating a professional tool based on the research to assist network members in their daily work. This tool, which facilitates the implementation of the conclusions of the metaresearch as regards conditions favouring the successful integration of IT, was broadly supported by the REPTIC community. Through a series of graduated statements and responses, the grid makes it possible to determine the chances of success of a practice that a teacher might want to implement, and more specifically, the paths that would be useful to follow in order to improve its chances of success.



In order to validate the tool's form and content, the researcher made the most of the large bank of articles published as resources on the *Profweb*² site. This enabled him to assess the extent to which the analysis grid allowed for anticipating a positive or negative result for an experiment set up by a teacher, and to what degree it facilitated the educational advisor's supportive role. The work was completed with the help of three REPTIC network members. After analyzing 13 of these narratives, some changes were made to the grid, both to its form (more user-friendly) and to the wording of some of its statements.

Throughout the development of this analysis grid, one requirement was a commitment to not focus on the simple transfer of knowledge resulting from research, but rather to offer a tool that could really be used by stakeholders in the milieu.

After barely a year and a half, this two-part activity (building models and developing theories, and working on a professional tool) has made it possible to transfer research results to a network of practitioners throughout Québec CEGEPs. This experiment, which was exceptionally productive, seems to contain lessons that deserve further attention. In fact, it seems that by allowing the greatest possible number of stakeholders to contribute to the direction of research, and by taking advantage of the knowledge and experience of professionals in creating models based on research results, these professionals not only became aware of current research findings, but, beyond that, were able to take ownership of the results.

[...] this two-part activity [...] has made it possible to transfer research results to a network of practitioners throughout Québec CEGEPs.

MODELIZING, THEORIZING AND APPROPRIATION!

The third outcome of Barrette's work completed in conjunction with REPTIC network members was formalizing a process that is truly instrumental in promoting a real appropriation of research by milieu stakeholders.

The concept of appropriation not only allows for recognizing the practitioner's knowledge and benefiting from it, it also promotes a transfer of knowledge that is truly operational and functional. In fact, the concept of appropriation recognizes the active role and power of those who appropriate the knowledge, in addition to recognizing the fact that practitioners

will inevitably assess the legitimacy of a theoretic proposition (resulting from research, for example) based on their own cognitive and experiential representations. Unless this proposition is considered legitimate, it will remain inoperative regardless of the methodology used by researchers in their research or transfer activities (Habermas 1987).

By taking this reality into account – that is, the challenge involved in bringing a practitioner to agree with the conclusions of a study and by realizing that the latter need not necessarily master the lessons drawn from the research, but rather take ownership of its conclusions – a researcher targeting appropriation should facilitate exchanges between research and actual practice. This is what was attempted in the third stage of the metaresearch dealing with conditions favouring the successful integration of IT.

Using a three-stage process, the researcher was able to create conditions conducive to a real appropriation by a community of practice. First, to a certain extent, he allowed practitioners to guide his own work. He then created situations designed to alleviate the confrontation that often occurs between practitioner representations and research findings. Finally, he focused on creating a professional tool that would meet the immediate and expressed needs of practitioners. These lessons dealing with the appropriation process proved to exceed the scope of the work begun with practitioners in the REPTIC network in February 2009.

In this respect, while Tardif, Lessard and Gauthier attribute part of the gap between researchers and practitioners to the linear model of transferring research findings to practice, which many researchers have adopted (Conseil supérieur de l'éducation 2006) and that Lenoir (2000) underlines the model's negative effects on links between researchers and practitioners, it would seem that a process that promotes not only the simple transfer of knowledge but a real appropriation by practitioners could prove of significant interest. Similarly, considering the importance of beliefs with regard to teaching and the tenacity with which they are held (Pajares 1992), working on appropriation may be the only really promising path. Obviously, this type of exercise can only be conducted after considerable effort by the researcher. However, it seems easier to consent to these efforts considering the legion of examples of studies in all areas of research that have had no effect whatsoever on practice. ●

² The *Profweb* site, which proposes to be the "Québec College Crossroad for IT Integration", offers some 140 narratives written by teachers in the college network who present their experiences with IT integration in their respective practices [<http://www.profweb.qc.ca>].



REFERENCES

BANDURA, A. 2003. *Auto-efficacité: le sentiment d'efficacité personnelle*. Brussels: Éditions De Boeck Université.

BARRETTE, C. 2009. "Métarecherche sur les effets de l'intégration des TIC en pédagogie collégiale". *Revue internationale des technologies en pédagogie universitaire* 6(2-3):18–25.

CONSEIL SUPÉRIEUR DE L'ÉDUCATION. 2006. *Le dialogue entre la recherche et la pratique en éducation: une clé pour la réussite*. Québec: Conseil supérieur de l'éducation.

HABERMAS, J. 1987. "Théorie de l'agir communicationnel". Vol. 1, *Rationalité de l'agir et rationalisation de la société*. Paris: Fayard.

LE BOSSÉ, Y. 2003. "De l'habilitation au pouvoir d'agir". *Nouvelles pratiques sociales* 16(2):30–51.

LENOIR, Y. 2000. "Introduction—Éléments de problématique: quels rapports curriculaires établir dans le cadre de la formation professionnelle à l'enseignement entre les savoirs disciplinaires et les savoirs professionnels?" *Éducation et francophonie* 28(2), autumn–winter [http://www.acef.ca/c/revue/revuehtml/28-2/01-Lenoir.html] (accessed March 21, 2011).

PAJARES, F. 1992. "Teachers' Beliefs and Educational Research: Cleaning Up a Messy Construct". *Review of Educational Research* 62(3):307–332.

Charles-Antoine BACHAND has trained as a teacher and historian. He is the co-author of the series *Présences* and *Regards sur les sociétés* intended for teaching history at high-school level, published between 2003 and 2009. He has also worked as educational advisor on programs, on research and on IT integration at Cégep de l'Outaouais. Since 2010, he is one of the institution's Assistant to the Academic Dean and, as such, is in charge of the Service de recherche et de développement pédagogique.

Charles-Antoine.Bachand@cegepoutaouais.qc.ca

Both the French- and English-language versions are available on the AQPC Web site as a result of the financial support of the Canada–Québec Agreement on Minority-Language Education and Second-Language Instruction.

We are particularly grateful to Susanne de Lotbinière-Harwood for revising this text.