

Proposed model for a plan to integrate ICTs into the college network:

The Cegep ICT Plan (*Plan TIC du Cégep*) proposes the use of information and communications technologies in helping the college to carry out its mission. More specifically, the plan has the following objectives:

- Develop the ICT competencies that students need in order to pursue university studies or to pursue an occupation involving a specialized technique.
- Choose teaching strategies that are adapted to students and that use the new ways of communicating and gathering information.
- Expand the physical limits of the classroom and timetable to the space made available by an extended range of hours, thanks to the addition of asynchronous activities that will motivate students to persevere in their studies.
- Be prepared to adjust and to change, in a balanced and continuing way, so as to respond to the changing family, social, and occupational situations of the students.

To enact an **ICT integration plan** that helps the college achieve its mission and that takes into account the resources, culture, and new realities of stakeholders, we present a schema of determining factors and their connecting relationships.

Five phases of implementation

- Step 1: Make an institutional commitment, and begin consultation of stakeholders with regard to the ICT exit profile required of college graduates.
- Step 2: Identify the means to be implemented, and specify the role of stakeholders in implementing these.
- Step 3: Agree on the formative and summative evaluation procedures attesting to the achievement of objectives.
- Step 4: Have the ICT plan approved by the college's Board of Governors.
- Step 5: Integrate the development of ICT skills into the learning activities of each program.

Step 1: Make an institutional commitment, and begin consultation of stakeholders with regard to the ICT exit profile required of college graduates.

The college administration must lead the project by committing to the development of an Institutional ICT Integration Plan. This intention probably becomes explicit during the preparation of the Strategic Development Plan, and it is essential that this plan affirms the pedagogical nature of the project so as to ensure that the institution does not commit itself to a path that is exclusively technological. The plan calls for an Implementation Committee that is made up, minimally, of a project coordinator and a project leader. This committee can add further resources as needed.

The project coordinator approves the steps of the initiative, concerns himself/herself with the implications for the various institutional services, and clarifies the material and budgetary constraints that are involved at each step. The project leader makes progress reports to the project coordinator and chairs all the program committee meetings that decide on the ICT profiles required of program graduates. The project leader must have extensive experience in ICT integrated learning strategies along with the ability to motivate teachers in reaching a consensus. The competencies of an ICT teaching consultant quite naturally fit the job of project leader.

Based on the ICT exit profile required of students, the implementation committee and the program committees sort out ICT skills, classifying them as general college-level skills and as skills specific to a study program.

Step 2: Identify the means to be implemented, and specify the role of stakeholders in implementing these means.

At this stage, program committees and the implementation committee decide on the means to be put in place in order to develop the ICT skills required of graduates. These means involve several levels or kinds. The primary concern must involve teaching. Will competency elements be grouped together inside a micro-program leading to certification, or will they be integrated into teaching strategies that include ICTs? Would it be relevant to develop upgrading capsules for students and teachers? Do we set up an aid program for teaching innovations that involve integration of ICTs? All these aspects are related mainly to the college's pedagogical services, and the implementation committee will draw on the appropriate resources for identifying and setting up these means.

More technical aspects relate to material organization such as software, labs, software learning programs, equipment for teachers and students as well as the use of this equipment in the classroom or individually—all these are matter for the college's computer and information services. The implementation committee will agree on the most effective means, taking all factors into consideration within the limits of available budgets and the implementation schedule.

Step 3: Agree on the formative and summative evaluation procedures attesting to the achievement of objectives.

At this stage of preparing the ICT integration plan, the implementation committee works collaboratively with program committees and departments in order to establish an ongoing evaluation process that will enable the student to measure his/her progress towards the required profile. Evaluation instruments can be of various kinds, such as an e-portfolio put together by the student as a demonstration of mastery of the desired skills or the integration of competency elements into a specific program's comprehensive assessment. Does the college wish to accompany such recognition of ICT skills with a mention on the diploma or by handing out a "certificate"? These could be motivating elements appropriate in a context in which the entire project is carried out inside or outside of the program's learning activities, as agreed upon initially. On the other hand, in light of information that has been gathered, the skills identified to date, and given how essential it is for all students to attain the ICT profile, it seems to us important to achieve a complete integration of ICT skills into learning activities. The result should be that all graduates would have the mention "ICT approved." Nevertheless, in a context where, at the most, only 60% of all college students obtain a diploma, management by e-portfolio adds value to students' efforts in acquiring this auto-learning tool, one that they will be able to use as adult citizens.

Conception d'un modèle de plan d'intégration des TIC pour le réseau collégial

(Developing a model of an ICT integration plan for the college network)

(Bilodeau, de Ladurantaye, Martel, 2007)

Step 4: Have the ICT plan approved by the college's Board of Governors.

Once the Institutional ICT Integration Plan has been drawn up, the project leader sends it to the project coordinator for approval. The coordinator submits it to the college administration, who will work with the project coordinator and the project leader to prepare an implementation schedule that will be presented to the Board of Governors along with the Institutional ICT Integration Plan.

Step Five: Integrate the development of ICT skills into the learning activities of each program.

This is the critical phase; teachers create, experiment with, and improve learning activities that integrate the ICT skills to be developed by the students. They draw on the resources placed at their disposal by the college teaching network.

The ICT teaching consultant guides teachers with training that is, although at times, technical, mainly pedagogical. He/she suggests new strategies based on well-researched and established practices. Together they ensure that activities take into consideration the new realities of their students as well as a variety of teaching models with which teachers and students feel comfortable. Modifying teaching practices is a complex process that must respect the main actor, which is the teacher. In this regard, see the three dynamics presented by Bernadette Charlier—transition, adaptation, and addition (Appendix 7). In another essay, Charlier identifies possible action paths in which experimentation has already begun. She specifies “collaborating with management, supporting teachers in their appropriation of ICTs, guiding team projects, collaborating with the resource technician, and taking charge of his/her own professional development.”¹

These learning activities with their integrated ICTs must provide opportunities:

- To search for information
- To process information
- To create and disseminate a production, and
- To communicate effectively using ICTs

The computer and information services of the college maintain and develop a computer environment by maximizing resources made available to them by the college teaching network for use by students, teachers, and institutions. This computer environment is notably dedicated to the learning activities listed above.

Finally, the student develops his/her ICT skills in the contexts of searching for and processing information and of creating and disseminating his/her productions; and he/she uses communication to keep informed about the level of his/her achievement of

¹Bernadette Charlier, Amaury Daele, and Nathalie Deschryver. Vers une approche intégrée des technologies de l'information et de la communication dans les pratiques d'enseignement. (Towards an integrated approach to ICTs in teaching practices.) <http://www.erudit.org/revue/rse/2002/v28/n2/007358ar.html>

objectives. Students have a certain number of ICT skills that have not been much researched, to name only visual memory, speed of manipulation, intuitive grasp of application context, and persistence in dealing with a problem of interest to them but one that resists solution. If students are well guided and supported, they will be able to transfer these skills and use ICTs effectively on the job and for their own continuing studies. And they will know how to find the knowledge they need.

Appendix 7 [Tr. is in a separate Word file.]

Intégrer les ICT dans ses pratiques : quels projets, quelles formations? Bernadette Charlier, Maître de Conférence au Département Education et Technologie, Cellule d'Ingénierie Pédagogique et Directrice du Centre Interfacultaire des Médias de l'Education

<http://www.unifr.ch/didacICT/IMG/pdf/integrerlesICT.pdf>

	La transition	L'adaptation	L'addition
Mode d'intégration	L'usage des TIC s'intègre dans les pratiques sans les modifier fondamentalement	L'usage des TIC transforme radicalement la pratique pédagogique	Les usages des TIC ne s'intègrent pas dans les pratiques
Conditions de mise en oeuvre	Une pratique congruente existait antérieurement. Une insertion dans le curriculum est possible (horaire, modes d'évaluation). L'usage des TIC sert le projet de l'enseignant et est soutenu par la direction.	Pas de pratique congruente au départ. Une insertion dans le curriculum est possible. L'usage des TIC sert le projet de l'enseignant et est soutenu par la direction.	Une insertion dans le curriculum n'est pas possible. L'usage des TIC ne sert pas directement le projet de l'enseignant et/ou n'est pas soutenu par la direction.
Effet sur les pratiques	Confirmation ou évolution des pratiques (adaptation des horaires, du rôle de l'enseignant, des procédures d'évaluation...).	Adaptation des pratiques (modification des horaires, du rôle de l'enseignant, des procédures d'évaluation...).	L'usage des TIC reste expérience temporaire.