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Monday May 20 2013
Maria Barile (Dawson College)
Catherine Fichten (Dawson College)
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ICTs: Tools for Universal Design for Instruction

In this report, the Adaptech Research Network, Dawson College, Collège Montmorency, and Cégep André-Laurendeau present the nine principles of the concept of universal design for instruction. According to the responses obtained in the study on the use of information and communication technologies (ICTs) by students with learning disabilities (LDs) in Quebec colleges, the authors propose recommendations connected to this concept.

Monday January 21 2013
Chantal Desrosiers (Cégep de Trois-Rivières)

Pedagogical Practices That Integrate Learning Management Systems (LMSs)

This paper covers several practices currently developed by college teachers who use Learning Management Systems (LMSs) as part of a hybrid (online and in-class) teaching framework. These teachers adapted and have perfected valuable practices which make their task easier for them, while fostering motivation, success and learning in students. However, a change is always easier to make when supported by appropriate research. The very purpose of this paper is to make the potential that exists in LMSs known to teachers. The starting question is the following: *What uses of Learning Management Systems (LMSs) should be encouraged, in order to harness their full pedagogical potential in a hybrid teaching context, at the college level?*

REPORTS

Monday May 20 2013

ICTs: Tools for Universal Design for Instruction

Maria Barile
Researcher, Dawson College
Catherine Fichten
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Teacher, Cégep Montmorency
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The Issue

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In the past few years, we have seen a growing diversification of the Quebec student population. It varies in terms of disabilities involving physical, motor, or neurological disabilities, and also in terms of cultures, languages, and age groups.

As well, there are increasingly more poor readers in Quebec colleges. These include students with a variety of learning disabilities (LDs). Such disabilities are of neurological origin characterized by difficulties related to reading, writing, organization, or mathematics. LDs affect 4–5% of the Quebec college population. Among LDs is dyslexia, a learning disability involving reading and writing that is the one most frequently reported in colleges.

In view of this reality, it is essential that teachers develop pedagogies that meet the needs of these various skills and learning styles. In this regard, the concept of universal design for instruction provides new and effective solutions that will benefit everyone.

It is in this context that the Adaptech Research Network, Dawson College, Collège Montmorency, and Cégep André-Laurendeau recently completed a three-year study entitled Les cégepiens ayant des troubles d'apprentissage face aux TIC. The study, subsidized by the Fonds de recherche du Québec – Société et culture (FRQSC) and the ministère de l'Éducation, du Loisir et du Sport (MELS), examines the use of information and communication technologies (ICTs) by college students with LDs.

What is universal design for instruction?

Invented in the 1980s in architecture and design, the concept of **universal design** promotes the idea that design of products and environments are to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design (or at extra cost) (Story et al., 1998). For example, large screen monitors were

Monday October 15 2012
Jean-Luc Trussart (Cégep régional de Lanaudière - L'Assomption)

Wolfram|Alpha, the Semantic Web at its best

Jean-Luc Trussart, technical academic advisor at Cégep régional de Lanaudière à L'Assomption, explores the pedagogical potential and impact of the Wolfram|Alpha computational knowledge engine and the semantic Web. He reviews the rise of the Internet and its impact on teaching and learning by giving examples of pedagogical applications of the Wolfram|Alpha engine, while identifying the issues involved in the classroom integration of this toolkit.

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originally designed for people with visual impairments, but today they are used by many people who do not have a visual impairment, including those who work with spreadsheets such as Excel (Barile et al., 2012).

Universal design for instruction, or UDI, involves the creation of environments and study programs that address all students, regardless of their abilities or learning styles. From among several proposed solutions, students can choose the ones that best match their styles of appropriating acquired competencies. This concept is beginning to prove itself in the school environment and is increasingly attracting researchers, educators, and administrators. Table 1 presents the nine principles of universal design for instruction along with examples that would ideally be applied by all.

Table 1 - The Nine Principles of Universal Design for Instruction

	Examples of application by teachers and establishments
1. Equitable Use The course does not disadvantage any group of students.	• Provide materials and lecture notes online before each class. • Provide the syllabus before the start of the semester so that all students can determine if the course suits them. • Ensure that Web pages and course management systems are usable for all students. (Some may not be compatible with screen readers; ensure that the layout of the Web site pages is simple and that the images have alternative text.) • Use various presentation methods for the teaching material (lectures, peer teaching, etc.).
2. Flexibility in Use The course is designed to adapt to several types of abilities and to take into account student differences.	• Offer a greater diversity of course choices online. • Allow all students to use various grammar and spell checkers. • Provide additional time for assignments for all students when they request it (and not only for students with disabilities).
3. Simple and Intuitive Use Instructions are easy to understand and tools are easy to use.	• Make sure the control buttons on the equipment used in science are labelled with simple text or symbols and are easy to understand. • Include clear instructions in plain language on exam copies and repeat instructions. • If you are preparing a handout of lecture notes for your students, include a table of contents enabling students to readily find what they are looking for; and choose a clear structure (e.g., divisions into chapters and sections).

4. Perceptible Information Necessary information is communicated effectively, in a way that it can be understood by all students regardless of their sensory abilities.	• Make sure the videos viewed in class are subtitled (e.g., applications like Camtasia allow filming what is on the screen and adding subtitles, useful for creating videos on the use of ICTs relevant to the course); or that transcripts/detailed descriptions of these videos are available. • Ensure that all students have understood your instructions by asking them questions and giving examples. • For slideshows, use a large font size and choose a good colour contrast between slide text and background. • Use various types of sources for the same information (e.g., video, Web site, popularization text).
5. Tolerance for Error Possible variations in the pace of learning and abilities of students are expected. The risk of errors due to accidental actions is minimized.	• Ensure that online exams allow students who accidentally press a key to go back to correct their mistake. • Suggest that students submit a draft or work plan of their assignment in order to get comments and advice before submitting their work. • Offer students many opportunities for formative evaluation, such as practice tests online or exercises to do at home. • Frequently remind students of deadlines for assignments and evaluations to minimize oversights. • Allow students to make drafts in class on a computer so that they can change or revise without constantly having to erase and rewrite their text.
6. Low Physical Effort The course minimizes physical effort not essential to the learning objectives.	• Allow students to use different methods to take notes in class (e.g., laptop, tablet, digital recorder). • Allow students to submit their work online (e.g., by means of the course management system, by email). • Allow students to communicate with you through various means (e.g., email, instant messaging) depending on the circumstances (e.g., during a snowstorm).
7. Size and Space for	• Ensure that the wireless access zones in schools

Approach and Use The space is organized so that all students, regardless of their size or mobility, have adequate space.	have tables, chairs, and appropriate space for everyone, including people who use wheelchairs, guide dogs, strollers, etc. • Always face the class when you talk to students. (Do not speak and write on the board at the same time.) • Ensure that students at the back of the class can see what is written on the blackboard or screen (e.g., by adjusting the projector).
8. A Community of Learners The environment promotes interaction and communication between students and teachers.	• Create online communities (via Skype or other software) for communication between students and between students and teachers. • Give students the choice of working alone or in a group. (Do not impose a single option.) • Set up study groups for students who need help.
9. Instructional Climate The environment is conducive to learning and to the inclusion of all students	• Do not always ask the same students to answer questions in class. • Show openness to all discussion with all students. • Diversify topics discussed in class as well as presentation methods (e.g., discuss the role of women in the discipline, discuss multiple gender identities [and not only the man/woman distinction] with PowerPoint presentations, speakers, videos, discussions). • Invite speakers to present different current perspectives on topics taught. • Use references or examples from Quebec and Canada when the course material comes from the United States.

ICTs in colleges

Students with learning disabilities (LDs) are increasingly faced with the extensive and varied use of new technologies. In the educational environment, the attraction young people have for ICTs has been used to transform these into tools that encourage and facilitate learning, and that also maximize the impact on academic success. The teachers have access to these tools to present their courses, to evaluate learning, and to make the instructional documents accessible at all times. Students use them to study and to reinforce or expand their knowledge.

For several years now, ICTs have invaded all educational projects in Quebec postsecondary institutions. For the effective transfer of ICTs to learning and teaching activities, however, it is essential that several conditions are met, including positive attitudes of teachers and students.

Studies have focused on the possible impact of these new technologies on the

academic success of certain types of already fragile populations; consequently, Karsenti et al., (2005) studied the case of underprivileged boys. They concluded that the use of ICTs in the classroom by teachers increases student motivation, especially that of boys (which refers to the principle of Principle 9–Instructional Climate). They also observed that ICTs seemed to develop the methodological and intellectual competencies of students.

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