THROUGH THE LOOKING GLASS AND WHAT WE FOUND THERE:
Examining Information and Communication Technology that Helps College Students with LD[1]

By Laura King, Catherine S. Fichten, Jillian Budd,
Alexandre Chauvin, Mai Nhu Nguyen & Maria Barile

When Alice first enters the looking-glass house she is happy to find some familiar things. As she begins looking about, however, she discovers that all the rest is as different as possible…

Alice's experiences mirror ours when we went looking for experts to tell us what types of information and communication technologies (ICTs) help college students with learning disabilities (LD) succeed. At first, we were on familiar ground, as previous research by the Adaptech Research Network (**http://www.adaptech.org**) tells us that:

➢ When first-semester college students with learning disabilities receive accommodations, they obtain the same grades as their non-LD peers;

➢ College students with LD in pre-university programs graduate at the same rate as students without LD, although they take an extra semester to do so;

➢ One frequently-mentioned postsecondary accommodation is the use of information and communication technologies (ICTs).

As we began the investigation of ICTs for students with LD, some of the things we learned were expected, and we were comfortable with the familiar just like Alice when she first enters the looking-glass room. But soon, we felt we had, indeed, gone through the looking glass and that we had landed in a different world… This is how we got there.

In this first phase of a larger investigation we interviewed 58 experts about what ICTs they felt were useful for postsecondary students with learning disabilities (LD). In terms of the key results, the most frequently mentioned ICTs were multi-purpose, dictation, writing and reading software (King, Chauvin, & Nguyen, 2010). Not surprising, really, as these types of software help students with reading and writing - arguably two of the most important skills for success at the college level. Success in school was the number-one perceived advantage of using ICTs, while autonomy, leveling the playing field as well as increased confidence and motivation were other popular advantages. Some of the major drawbacks mentioned were cost, technical problems and a steep learning curve. Negative perceptions such as '*using technology allows students to cheat*' or '*it's not fair to the other students*' were rather unexpected, as we thought that in today's technology-driven and inclusive educational system, these old-school ideas would have disappeared.

Suggestions for improving the situation for students with LD and for the campus professionals who provide academic supports for them included the need for more time, resources, communication, collaboration, access to ICTs as well as sensitization and training. To learn more about what our experts said, please see Fichten et al. (2010).

Having spoken to a variety of people, I put theory into practice by seeing first-hand how a student with LD uses ICTs to succeed. The requirements? Someone who does well at school, knows what it is like to have a learning disability, and is good with technology. I did not have to go very far as one of the members of the Adaptech Research Network, whom we shall call Jane Doe, fitted the profile.

Jane started by recounting how long and frustrating it used to be for her to learn the required reading material when she was not using ICTs. First she needed to read each chapter in her textbook. Then she would have to go back, reread the chapter and highlight the most important concepts she found in the text. Only after these first two steps were completed could she then go back to the beginning of the chapter and begin to take notes. Every time she was unclear about the meaning of a word, she had to leave the text she was reading and consult the dictionary. This entire process for a single chapter often took over 13 hours to complete! All of this was merely to prepare her for studying the material, since taking notes was not enough for her to remember all of the information. To emphasize her point, she reminded me of how precious time is for post-secondary students who study full-time. In her opinion, one of the key benefits of using ICTs for students with LD is the amount of time saved.

What took her 13 hours now takes only four. She showed me the anthropology chapter she was studying (it is on her screen in front of us as she used scanning software (OmniPage) to convert it to an electronic version). She saved the chapter as a Word document (you can save it in a variety of formats such as pdf). While she read the chapter, she used multi-purpose software (Microsoft Word) to make notes. She is able to quickly pare down a sentence to its essence, highlight the main word, and paste the sentence or bulleted point under one of her subject headings. She explained that she can read, take notes and consult her on-line dictionary (WordWeb) all at the same time. She pointed out that she can now listen to the chapter (she saved her chapter as an mp3 file using Balabolka and Audacity), and follow the voice file in the text with word highlighting (Balabolka). She used (Aldo Magnifier) to zoom in on tiny print footnotes and uses (WordQ) for pronunciation support.

Jane's demonstration showed that some types of software have word-prediction (WordQ) while others have graphical views of word-list and main-idea versus secondary-idea options (Inspiration). For those who do not like to type, or do not find it be an effective studying strategy, Jane suggested talking out loud about the reading material and having

---

it recorded (Dragon Naturally Speaking). Studying could be re-listening and/or re-reading the dictated material which the software has transferred to written text. Jane's work also showed how text-to-speech (computer speaks what is written - Balabolka) lets students not only plan and write papers, but also do much more of their own editing. Jane's goal was for me to see how ICTs offer a wide variety of ways to achieve key school goals: improved and more time-effective reading, writing, studying and paper writing. Glancing over Jane's study notes (she has an exam in two days) reveals their impressive clarity and completeness. Clearly, time-saving is not the only advantage!

In our short time together, Jane was able to cover a number of different types of general -use and specialized technologies. Sometimes, she moved so quickly from one task to another that it felt a little like Alice's trip at the start of her first adventure when she fell suddenly and quickly down a rabbit hole and landed in a different reality! There are so many types of ICTs that were unfamiliar. How can one keep up with it all? Fortunately, a brief explanation of the ICTs mentioned by Jane and our other experts can be found in a glossary prepared by our team by going to (http://www.adaptech.org/ AQETA2010HandoutEnglish.doc). For those of you who have financial restrictions, you can visit the Adaptech Research Network's free and inexpensive specialized technology downloads database (http://www.adaptech.org/en/downloads/fandi). In just two clicks, you can learn more about what ICTs can help students with LD succeed at college

As Alice's second adventure draws to an end, she asks her beloved kitty a serious question: Did she dream it all or was she was part of the Red King's dream? A few of our experts described dream-like learning environments. These include colleges with a wealth of ICTs and training available to students with LD. Alas, though, a widespread lack of resources and financing quickly draws us back to a reality where too many students with LD in Quebec's colleges do not have adequate access and/or training to effectively use needed ICTs. For, as Jane's dream takes her closer to the reality of obtaining a coveted spot in Educational Psychology at the Ph.D. level, too many others are living a limited and controlling red-king dream.

N.B. If you are college student with an LD and you want to learn more about technology and/or other accommodations, you can talk with one of your teachers or your academic advisor. Have the person help you find the campus-service provider or go right to this person on your own.

Références

— Chauvin, A., Nguyen, M.N., King, L., Barile, M., Budd, J., & Fichten, C.S. (2010, mars). **Brève description des TIC présentées dans notre étude.** Glossaire distribué à la conférence annuelle de l'Association québécoise des troubles d'apprentissage (AQETA), Montréal, Québec.

— Fichten, C.S., King, L., Barile, M., Heiman, T., Nguyen, M.N., Chauvin, A., Budd, J., Mimouni Z., Havel, A., Raymond, O., Tibbs, A., Juhel, J-C., Fortin, C., Adato-Biran, I., & Pieterse, E. (2010, mai). **À la recherche de la réussite postsecondaire : Les technologies de l'information et de la communication (TIC) pour les étudiants ayant des troubles d'apprentissage.** Présentation à l'Association pour la recherche au collégial (ARC) dans le cadre du 78e congrès annuel de l'Association francophone pour le savoir (Acfas), Montréal, Québec. Disponible à **http://www.adaptech.org/ARC-Acfas2010PosterFinal.pdf**

— King, L., Nguyen, M.N., & Chauvin, A. (2010, juin). **Troubles d'apprentissage et utilisation des technologies de l'information.** Présentation à la conférence annuelle de l'Association québécoise de pédagogie collégiale (AQPC), Sherbrooke, Québec.