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## Computers, Academic Success, And Students With Disabilities On Campus: An Update from the Adaptech Research Network

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With the start of the new year, the Adaptech Research Network wanted to let NEADS members know what we have been up to and where we are going with our research. First, we will update you on our ongoing research into the use of computer technologies by Canadian college and university students with disabilities. Here, we will describe an exciting new study which we are starting this year. Second, we will describe a recently completed study where we moved our focus from computers and technology to academic success by college students with disabilities.

Computer and information technologies have changed the way Canadian colleges and universities deliver education and the way students learn. Students today benefit from an array of new tools. Email is a good case in point. Now, many students can email their assignment to the professor at the last possible minute. This was not possible 20 years ago. Other examples are online course registration and library research.

Students with disabilities and service providers on campus have tried to ensure that issues of accessibility are an integral part of the policies of their educational institutions. Doing this would save time, cost, and frustration for all. Have Canadian universities and colleges learned this lesson? Has this lesson transferred to the new technology-rich campuses that offer course ePacks, web based registration and various forms of Internet-based learning activities? Do students with disabilities have the same access to campus based computer and information technologies? Are colleges and universities across the country proactive in ensuring access and, if so, how is this done?

During the past seven years the Adaptech Research Network ([www.adaptech.org](http://www.adaptech.org)) has partnered with NEADS in conducting several studies on the accessibility of computer and information technologies by post-secondary students with various disabilities. We surveyed both post-secondary students as well as service providers on campus.

For example, one of our studies showed that not only are students with disabilities heavy users of computers, but that almost half of a large sample of Canadian students with disabilities (numbering 725) said they needed adaptations to use a computer effectively. This referred to such things as screen magnification, captioning, dictation

software, and alternate mice. Although almost half of the sample reported needing adaptations, only a quarter of the sample used these.

Why did students who needed adaptations not use these? The main reason mentioned was cost, a barrier also cited by service providers for when equipment is not available on campus. Another commonly noted reason was lack of information: about what products exist, where to get them, and what subsidy programs exist to help students and institutions defray the cost.

In response to these findings we compiled a listing of free and inexpensive hardware and software alternatives that work in English and French that might be useful. Some of these are demos, while others are fully functional. In no way are we suggesting that these should replace the higher end adaptive hardware and software currently on the market. However, as a short-term solution or to experiment with different adaptive technologies, we think they are a good place to start. If you are interested in checking these out, go to our downloads page (in English: <http://adaptech.dawsoncollege.qc.ca/download.htm> and in French: <http://adaptech.dawsoncollege.qc.ca/downloadf.htm>). If you know of any products that you think we should look at, please let one of us know about it ([catherine.fichten@mcgill.ca](mailto:catherine.fichten@mcgill.ca)). We are continually on the lookout for products that work well and student recommendations are our best source of "free and inexpensive technologies." Many thanks to Chris Gaulin, NEADS' own Website Architect, who continues to help test and update our growing list of software.

When it comes to computer technologies, our studies have also identified problem areas on campus. For example, various forms of eLearning, such as CD-ROMs, math software and websites used by faculty are frequently inaccessible. Moreover, professors are poorly informed about the computer needs of students with disabilities. Finally, many general use computer labs on Canadian campuses are not equipped with adaptive technologies. To better understand what is happening, what works well and what needs improvement, we are examining the accessibility of various aspects of eLearning on Canadian college and university campuses. This is an Adaptech research project going into high gear early in 2004.

## **Research on academic outcomes: An excellent report card for students with disabilities**

Recently, the Adaptech Research Network turned its attention to a new area. We looked at the academic performance of students with disabilities at Dawson College, our home base. Dawson College is a CEGEP in Montreal. It is a junior-community college similar to colleges elsewhere in Canada. Our research, which covers a twelve-year period between 1990 and 2002, investigated questions such as: Do students with disabilities graduate at the same rates as their nondisabled peers? What are their grades like? What factors facilitate their success? To answer such questions we looked at the following four academic outcome measures: (1) graduation rates, (2) first semester grade-point average, (3) course completion rates (percentages of pass/fail), and (4) success rates (percentage of students completing all their first semester courses).

Dawson College is located in downtown Montreal. It has a population of approximately 7500 full time students. The college provides two academic programs: a three year technology program (e.g., nursing, radiation oncology, industrial design), and a two year pre-university program (e.g., social science, creative arts literature and languages, science).

The transcripts of 653 students who were registered with the Services for Students with Disabilities office at Dawson College, were compared to the transcripts of 41,357 students who did not register for such services (their non-disabled peers). Of the sample of students registered to receive disability related services from the college, 53% had learning disabilities (e.g., dyslexia) and/or Attention Deficit Hyperactivity Disorder (ADD/ADHD). The remaining 47% had visual, auditory, speech, mobility, psychiatric or medical impairments.

Results show that the two groups essentially had the same graduation rates. Within pre-university programs, 55.0% of the students with disabilities who began their studies between 1990 and 1998 received (or were eligible to receive) their diploma, compared to 54.5% of their nondisabled peers registered during the same time period. For the technology programs, 53.2% of the students with disabilities beginning their training between 1990 and 1997 received (or were eligible to receive) their diploma. The graduation rate for their non-disabled peers in the technology programs during the same period was 51.7%. These differences were not statistically significant. There was a difference between the groups when it came to

the time required to graduate: between 1990 and 1998 students with a disability required approximately one semester more to graduate than did their non-disabled peers.

The situation was similar for the other factors investigated: differences were not statistically significant. For example, when it came to grade point averages, students with disabilities received an average grade of 66.3% in their first semester compared to an average of 65.9% for their non-disabled peers. With regard to first semester course completion rates (percentage passed courses), the rate for students with disabilities was 81.2% versus 80.5% for their non-disabled peers. Finally, the success rate for completion of first semester courses was 49.2% for students with disabilities versus 49.4% for their non-disabled peers. In general, the grades of students with learning disabilities and/or attention deficit disorder were lower than that of the entire group of students with disabilities. However, their overall performance was not statistically different from the performance of students without a disability.

For more information about the findings, check out the full report by Jorgensen et al. (2003) on our web page. It is available in both Adobe Acrobat ([http://adaptech.dawsoncollege.qc.ca/pubs/PAREA\\_2k3.pdf](http://adaptech.dawsoncollege.qc.ca/pubs/PAREA_2k3.pdf)) and Word ([http://adaptech.dawsoncollege.qc.ca/pubs/PAREA\\_2k3.doc](http://adaptech.dawsoncollege.qc.ca/pubs/PAREA_2k3.doc)) formats.

What do these numbers tell us? On average, students with disabilities graduate at the same rate as non-disabled students. Academically speaking, their grades are on par with those of their non-disabled peers. Can people with disabilities make it in college? The Dawson data very clearly say, "Yes, they can!"

