

## **Jobs of future will require more training, more education**

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Last of a seven-part series

When 32-year-old Jason Doherty of Kitchener saw the assembly lines of area plants during a tour organized by Conestoga College, he realized how much the economy has changed.

The thousands of people who laboriously assembled and packaged products by hand have disappeared. In their place are automated machines controlled by computer software.

Products moving on conveyer systems are assembled, finished, painted and packaged with a speed and tireless precision no human can match.

"The repeatability and the accuracy of these machines is amazing," Doherty says.

Welcome to the future, says Larry Smith, a University of Waterloo economics professor.

"Routine work will be done either in low wage countries, or by machinery," he says.

These changes mean the jobs of the future will demand a higher level of education and training.

"The skill level that is needed has gone up," says Carol Simpson, executive director of the Waterloo Wellington Training and Adjustment board.

According to 2001 census figures, this region has been lucky so far. Only 53 per cent of the adult population here has a diploma, degree or certificate from a trade school, college or university.

That means this region is in the bottom third of urban areas in Canada in terms of the education level of its work force.

Yet the average income for someone with a full-time job was \$44,883 in 2001, higher than the national average.

One explanation is that people who came as immigrants in the past didn't necessarily have a high level of education but were able to get good jobs in manufacturing plants.

But as the economy changes and unskilled jobs disappear, people are having to go back to school to get jobs.

The 2001 census shows the number of adults with trades certificates or some post-secondary education grew 42 per cent in this region between 1991 and 2001.

"At one time, there might be four jobs in the factory and you could have one person with a Grade 8 education, two with Grade 10 and one with Grade 12. Now they all have to be able to do each others' jobs." Simpson says.

While unskilled workers are being laid off, local industries will need people like Doherty.

After working at auto dealerships for 10 years as a service adviser, Doherty decided to apprentice in a hot new field. He is learning to become a machine tool builder and integrator.

That means he will build automated assembly lines, adapt them for different products, and be able to service them.

Conestoga College recently received \$1.3 million in provincial funding to expand training in the trades, including the unique machine tool builder integrator program.

Instructor Brad Smith says the program encompasses aspects of the tool-and-die trade and involves learning everything from blueprint reading to hydraulics, pneumatics, electronics, math and physics.

These apprentices must be academically strong, he says.

"It used to be, if your kid was not good in school, you sent him into the trades to work with his hands. That is no longer the case."

It will take Doherty four years and 8,000 hours of work experience and in-school training to become licensed as a machine tool builder integrator.

But he believes it's worth it and says local companies are chomping at the bit. "They wish we were available right now," he says.

Local post-secondary institutions -- the University of Waterloo, Wilfrid Laurier University, the University of Guelph and Conestoga College -- are cited as the reason the economy here is so strong and diverse.

The region had an average unemployment rate of 5.1 per cent, one of the lowest in the country last year.

The late Val O'Donovan, who founded satellite-component maker Com Dev International, cited both Conestoga College and the University of Waterloo as reasons for moving his company from Montreal to Cambridge, says John Tibbits, president of Conestoga College.

Com Dev "wanted access to skilled workers and researchers," says Tibbits, who adds that Conestoga College will have to expand to serve the growing catchment area.

David Johnston, president of the University of Waterloo, says the wealth of this region is linked to clusters of post-secondary institutions.

He points to the Boston area, which has 32 degree-granting institutions and one of the highest standards of living in the United States.

Investments that Cambridge made in the new UW school of architecture and that Kitchener is making in a new UW school of pharmacy will be vital to the future economy, he says.

The UW Research and Technology Park will be another critical economic driver.

"I do not know of a single better investment to enhance a community's prosperity than an institution devoted to talent," Johnston says.

Co-operative education, a large part of the work-based learning at the UW, "also contributes enormously to our local economy," he adds.

But there are challenges ahead.

Simpson says upgrading the skills of the present unskilled work force is a major issue.

"There are a lot of people who have been in the work force for about 20 years who are probably one technological step away from being unemployable," she says.

Mike Rushton, 32, of Kitchener is an example of someone who is investing in a skilled trade after his former employment disappeared.

He was laid off from Kaufman Footwear in Kitchener. Now, he is third-year machinist apprentice at Strite Industries in Cambridge.

According to a study UW professor Larry Smith did for the Waterloo Wellington Training and Adjustment board, about 20,700 people, or 6.2 per cent of the work force, had trades certificates or diplomas in this area in 2001.

Smith says while there isn't necessarily a shortage of skilled trades people in all areas of industry, the issue is complex because employers are looking for people who are self-motivated and have a broader range of education and skills.

Smith also says this region relies heavily on importing skilled trades people. His study shows about 3,000 skilled trades people will migrate into the region by 2011, which just barely covers the positions of older skilled trades people who will retire by then.

If not enough skilled trades people migrate here in the future, the region will be vulnerable. It is important, therefore, to train more people locally, he says.

Meanwhile, immigrants also need to be better integrated into the economy. That topic will be addressed at a Waterloo Region immigrant skills summit on April 28.

Rich Janzen, research director at the Centre for Research and Education in Human Services in Kitchener, says as the Canadian society ages and family sizes remain small, immigration will be a vital to prosperity.

"We are projecting that 100 per cent of our labour market growth will come from immigration by 2011," he says.

Immigrants are coming with higher education and skills, he says, but they often end up underemployed and frustrated.

This represents a huge loss to the economy, Janzen says.

Adds Simpson: "We have to maintain and increase our ability to meet our local needs . . . the only way to do that is through ongoing training and personal development."

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**[Illustration]**

Photo: DAVID BEBEE, RECORD STAFF / First-year Conestoga College students (from left) Greg Smeltzer, John Amaral and Ryan Poole use multi testers to gauge the continuity in an automated system donated to the school by ATS Automation of Cambridge. Changes in the economy mean jobs of the future will demand a higher level of education and training.

Credit: RECORD STAFF

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