



MARS

A Quarterly Publication

Future of Work

Canadian startup founders are
battling it out in the War for Talent



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Cover page image: Chris Bryson, founder and CEO, Unata (left) and Gimmy Chu, co-founder and CEO, Nanoleaf

MaRS is a journal conceived to reflect the creative spirit of our urban innovation hub, as well as the cultural and economic diversity of Toronto, the singular city in which MaRS is based. The mission of the magazine is to examine both new ways of thinking and new ways of doing things, from scientific research to technological advancements, always with a view to improving the human condition. MaRS maps innovation and highlights how it touches our lives.

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HACKING A CAREER: OF RAVES AND RECRUITMENT

BY JOHN LORINC

They've become the tech crowd's version of raves. And increasingly, job fairs.



On most weekends in big cities with thriving startup scenes, hundreds of young programmers, many of them still in school, will turn up at hackathons – freewheeling competitions where amateur developers race to create applications with new software platforms, hardware or data sets provided by the sponsors. For 24 or even 48 hours, they network, brainstorm and grind out code, their efforts fueled by energy drinks, protein bars and the promise of attractive prizes.

“I think I’ve been to a hundred hackathons in the last five years,” says Helen Kontozopoulos, a lecturer at the University of Toronto’s faculty of computer science and co-founder of the Innovation Lab there. “They are crucial to our students because they are places where they meet each other, socialize and learn new skills.”

CROSSROADS

While hackathons have become a widely accepted way for companies and other organizations to crowd-source new apps or solve problems, they have evolved into essential networking venues where talent and potential employers can cross paths.

Hackathons have evolved into essential networking venues where talent and potential employers can cross paths.”

“It’s crazy hard to get good developers,” says Kontozopoulos. “If you know developers are at hackathons, you have to be there. You just go.”

Some observers, in fact, say that hackathons have become the best

way for employers either to find new recruits or brand themselves as places to find a software job. The hothouse environment will also reveal how young techies perform when faced with the pressure of an intense deadline and an open-ended problem.

“The reason we invest in hackathons has little to do with idea generation,” explains Rocky Jain, director of Manulife’s RED Lab, the insurance giant’s incubator, based at Communitel in Waterloo, Ont. “It has everything to do with finding and identifying the talented developers who have the ideas.”

Manulife opened RED Lab two years ago specifically to get itself in front of Waterloo’s programming community, whose members may not have considered the company as a potential employer. Since then, RED Lab has backed two hackathons, and seen its résumé intake grow five-fold. Which



SEAN McCURDY
The Serial
Hackathoner

Age: 29
Profession: Data Scientist,
Co-founder of Zuubly
Hackathon: Hacking Health

“The purpose of hackathons is to get the ball moving. The solutions are always a mess after the hackathon, but the event is really about meeting talented people. I’ve been in six hackathons, and each time, you get to put on different people’s hats and try building things in ways you never thought of before. You get to solve something beyond your 9-5.”

Some observers, in fact, say that hackathons have become the best way for employers either to find new recruits or brand themselves as places to find a software job.”

Image: The HTML 500 by Lighthouse Labs





LEO GODREAULT

The Hackathon Winner

Age: 29

Profession: VP of Product,
iUGO Health (formerly
CareKit Health)

Hackathon: Hacking Health

“I worked within a hospital as a registered nurse and saw that it’s a long process to get anything done. A hackathon is another world where you have only 48 hours to come up with an idea and get something out there. The buzz we got and the follow-up from OTN [Ontario Telemedicine Network] to secure a pilot for our product is tangible – it’s not just an idea on a paper.”

is precisely Jain’s goal: “I want the goose,” he says. “Not just the eggs.”

RADICAL ROOTS

The earliest hackathons, which were loosely organized and somewhat anarchic affairs, sprang up at universities more than a decade ago. Recently, they’ve become more mainstream, seeing uptake by Fortune 500 companies, big retailers and tech companies alike. MasterCard, AT&T, Unilever, PayPal and Microsoft have all held hackathons (both public and employee-only); Facebook recently held its 50th coding event, and more than 40 “intercollegiate” hackathons took place across the United States in 2014 alone.

An industry has grown up around these events, with non-profits like HackerNest organizing them and finding sponsors, some of which provide impressive prizes (Sales-

force, the sales-software giant, once offered \$1-million). In Toronto, there were more than 30 hackathons last year, many held at MaRS, including HTML500 — Canada’s largest learn-to-code event, which was presented by Lighthouse Labs and had hundreds lining up on a cold Saturday morning to participate.

Now, non-profits, governments and charities, especially those with ambitious open-data programs, have joined the fray. The City of Toronto put on TrafficJam at Evergreen Brick Works last fall, asking participants to use transportation data to, as the name would suggest, sort out the city’s congestion problems.

FEEDBACK

But private enterprise remains the driving force. Karl Martin, co-founder of Nymi, says the Toronto firm has participated in, or sponsored, numer-

ous hackathons for multiple reasons, including talent-spotting. He says that since Nymi makes a hardware device — a biometric wristband with security applications — it’s important for code writers to actually see it, so they can truly understand it.

“We want developers to be playing with our product and [give us] feedback,” he adds, although company officials are on hand to get a sense of their skills, as well as to see what participants come up with.

“It’s almost like a way to interview without the pressure of an interview.”

Nymi’s human-resources managers don’t formally track the developers they’ve met at hackathons, but Martin says that applicants always include their experiences at such events.

Indeed, the courting process is somewhat more indirect, says Mike Jarrell,



Image: Mike Jarrell, Partnerships Director, Bitmaker, a startup that runs hackathons.

who is the partnerships director for Bitmaker, a Toronto tech skills accelerator. “I haven’t formally been approached by hiring partners who said, ‘This is how we’re hiring students,’” he says. “It’s often more implicit than explicit.”

It’s almost like a way to interview without the pressure of an interview.”

Martin and others point out that hackathon sponsors should probably take a soft-sell approach to recruiting, and instead send their brand evangelists to network with the participants.

DOWN SIDE

Not everyone in the tech space is a fan of finding new talent this way, however. “In my view, hackathons are not a good recruiting tool,” says Farhan Thawar, a former vice-president of engineering at Toronto software development firm Pivotal Labs, and now chief information officer of a new startup venture (currently in stealth mode).

He says the concentrated hothouse environment of a hackathon bears little resemblance to the way companies, even innovative ones, function on a day-to-day basis. Hackathon participation, he says, “is not typically a great predictor” of success in a corporate setting.

The goal can be somewhat open-ended, Thawar adds, because the point of a hackathon is to have developers brainstorm in an unstructured way, so sponsors may not necessarily find the people they’re after.

He recalls a more specific event from his days at the University of Waterloo, when IBM ran a programming competition, and offered an internship as the prize. “Guess what? They got the people they were looking for — people who want to work for IBM.”

UP FRONT

Firms that do see hackathons as potential recruiting platforms should be meticulous about preparing for them. HackerNest CEO Shaharris advises corporate sponsors to be focused and transparent about their objectives, and avoid the temptation to

use, for example, a charity-oriented hackathon to mask a recruiting exercise. “Developers don’t like being lied to,” he says. “I’d be really, really up front about your goals.”

“You have to be super clear,” agrees Martin. “It can blow up in your face.”

Image: The HTML 500 by Lighthouse



He says companies should make sure they’re able to provide lots of on-site technical support. While Nymi does send HR managers, and Martin himself will drop by to see how the teams are doing, the most important company reps at hackathons are software engineers. “That’s who the developers care about.” Jain, for his part, notes that the “technical mentors” that Manulife sends to hackathons also serve as “our talent scouts.”

WHAT’S NEXT?

Kontozopoulos, meanwhile, points to the advent of new types of hackathons, which take place over longer periods and involve closer, more direct collaboration.

One example: HealthEDGE, a joint venture by partners that include Johnson & Johnson Innovation’s JLABS, Toronto teaching hospitals, Autodesk and IBM. Participating developers will spend several weeks tackling hospital-based challenges, such as patient and diagnostic processes.

As she puts it, “We’re trying to evolve the hackathon.”



DANIELLE THÉ The Hacker Organizer

Age: 27

Profession: Product Marketing Manager, Google; Founder, Devs Without Borders

Hackathon: Break Poverty Hackathon

“When we designed our hackathon, we didn’t want it to be in isolation. The West thinks, ‘These are Third World issues.’ And that’s why so many hackathons are about 18-year-olds making solutions for 18-year-olds’ problems. Our participants built scalable solutions that were based on the needs of citizens in developing countries.”



LEARN TO FACE THE CHANGE

BY PATCHEN BARSS

You've studied for years and landed a job you love. Now what? If you're Amie Huisman, a behavioural therapist with over 16 years of experience, you keep on studying to keep that job.

If the one constant in life is change, in today's workplace, the one thing you can count on is the constant need to change your skills to stay relevant. And employed.

New products. New ideas about leadership skills. New health and safety regulations. New customer-service concepts. And of course, the inevitable hot new social media platform that simply has to be a part of your marketing plan. Like, today.

You might be a manager who embraces the accelerating pace of change with a zeal for all things current. Or you could be a reluctant paradigm-shifter who would rather wait for a sign that something is broken before adopting the latest fix. Either way, continuous learning is a bigger part of working life than ever.

In fact, as British education icon Sir Michael Barber has said, the two “are becoming inseparable” and, if the knowledge economy is to grow, companies must embrace this notion like a mantra.

Previous page image: Brothers and co-founders of CoursePeer, Marwan Aladdin, COO (left), and Hadi Aladdin, CEO

PRESSURE

But for people like Huisman, the ever-increasing expectations of professional development can feel like a hassle as well as a reward.

“My field has exploded,” she says. Throughout her time on the job, she has seen qualification and certification criteria change over and over again. “It’s exciting, but I’m just trying to keep up.”

Huisman, who is based in Hamilton, Ont., started her career armed with a college diploma. In those days, she says, a diploma and “as much floor experience as you could get” were all the qualifications anyone needed.

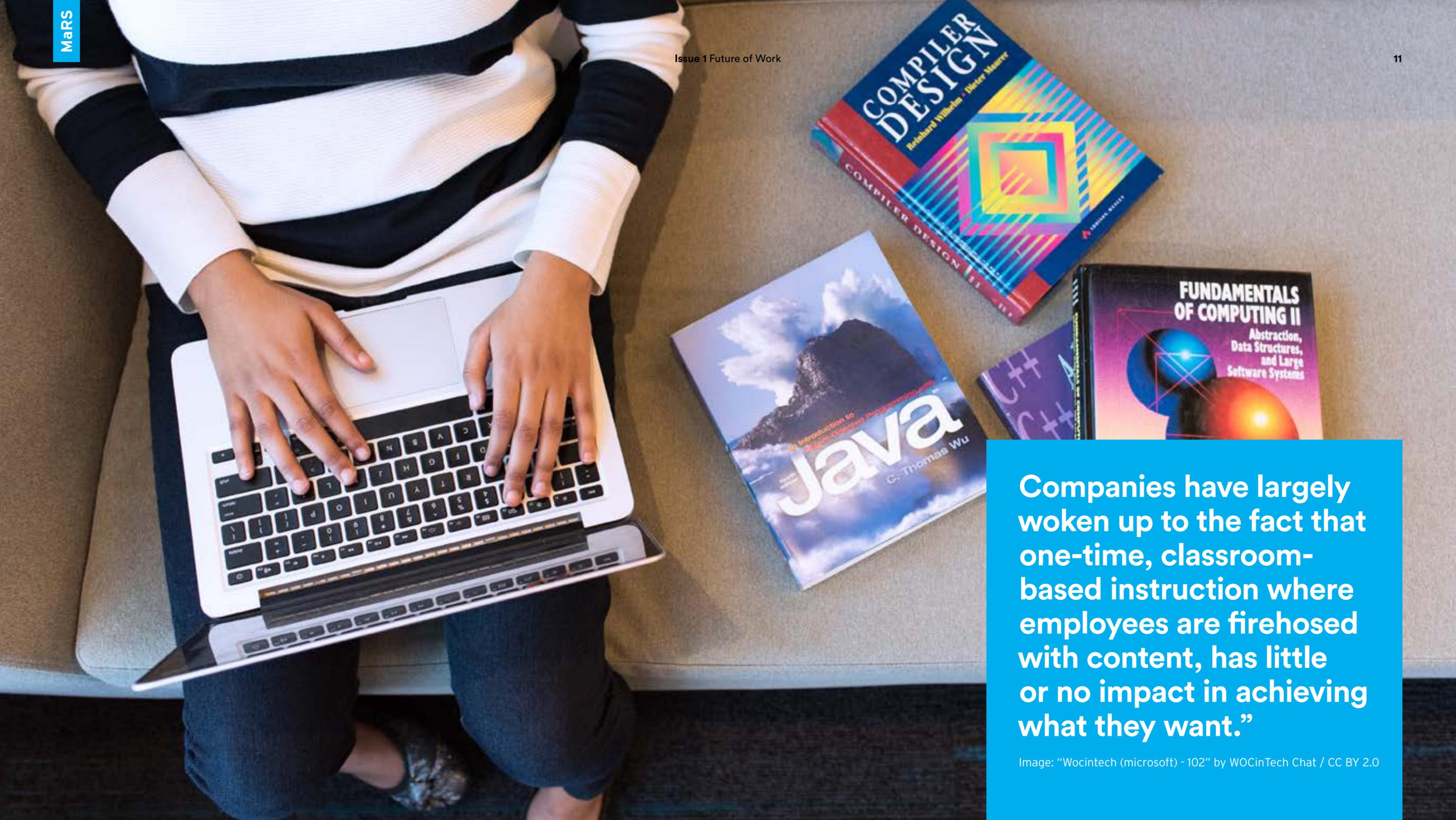
But as has happened in everything from public relations to law, her field has become more technical and professional, which is part of the driving force behind ever-more-demanding requirements.

After she'd been working about seven years, a new certification board required her to get a university degree in order to stay qualified, so she enrolled in university part-time while continuing to work.

If the one constant in life is change, in today's workplace, the one thing you can count on is the constant need to change your skills to stay relevant. And employed.”

Image: Carol Leaman, President and CEO of Axonify





Companies have largely woken up to the fact that one-time, classroom-based instruction where employees are firehosed with content, has little or no impact in achieving what they want.”

Image: “Wocintech (microsoft) - 102” by WOCinTech Chat / CC BY 2.0

Technology is the intersection point where companies can meet the needs of the modern learner.”

“Adult learners are the last to pick their courses, and they have limited choices,” she said. “I was getting qualified, but with courses that didn’t have much to do with what I did.”

Luckily, technology was changing alongside the increased demands for professional qualifications.

ONLINE SOLUTIONS

“I looked online and started to take courses,” she says. While online courses don’t offer the same kind of community, she found it much easier to study relevant topics. “

Huisman’s experience is in keeping with the general trend in continuous learning, whether offered by academic institutions or private training companies. Greater freedom, and more customizable, on-topic training is the trend.

“The thinking around employee training has evolved significantly in the last five to 10 years,” says Carol Leaman, president and chief executive officer of Axonify, a digital professional learning platform.

New digital tools, she says, have driven much of the change in attitude toward continuous learning, creating new expectations as well as new motivations.

“Technology has given learning leaders inside corporate enterprises a way to deliver training, anywhere, anytime, on an individual or personalized basis,” she says. “It has also trained the learner to want to consume information differently. Employees have become ‘prosumers,’ meaning they want a professional experience, but delivered in a consumer-like fashion. Technology is the intersection point where companies can meet the needs of the modern learner.”

LIMITATIONS?

But corporate trainer Nicki Weiss isn’t convinced that technology is the only answer. She has offered workplace training and team-building for more than 30 years through her company, Saleswise.

She contends that the explosion of e-learning platforms and online courses can’t live up to the expectations people place on them.

“Online tools can be good for updating knowledge, but for skills development, it can be limited and fatiguing. You’re on your own,” Weiss says. “For employees to keep honing their skills, they need engaged leaders. If there’s a magic bullet, it’s the consistency and deliberateness of the leader.”

The biggest changes Weiss has observed have nothing to do with technology. She says a shift in

attitude has had a much greater impact: “What’s changing is people really know the value of ongoing learning. Even highly skilled employees know they need to practice all the time if they want to get better.”

Or even if they want to stay in control of their career.

Online training programs are also focusing on employers’ needs. Scalability is an issue when it comes to training, especially when it comes to franchise owners.

Hadi and Marwan Aladdin developed their online training program, CoursePeer, to allow companies to upload e-learning modules and videos, but its value-add is its ability to “surface collaboration.” When the brothers developed their program at the University of Toronto in 2012, they designed software to help students learn while at the same time gain credits for employable soft skills such as problem-solving.

Applied to companies, this platform helps employers better understand which e-learning tools are effective, and where teams are collaborating

across the organization, says Hadi Aladdin, CEO of CoursePeer.

“Employers need to understand which modules are working, and track workflow,” says Aladdin.

ANTE UPPEd

For people like Amie Huisman, the demand to upgrade never seems to end.

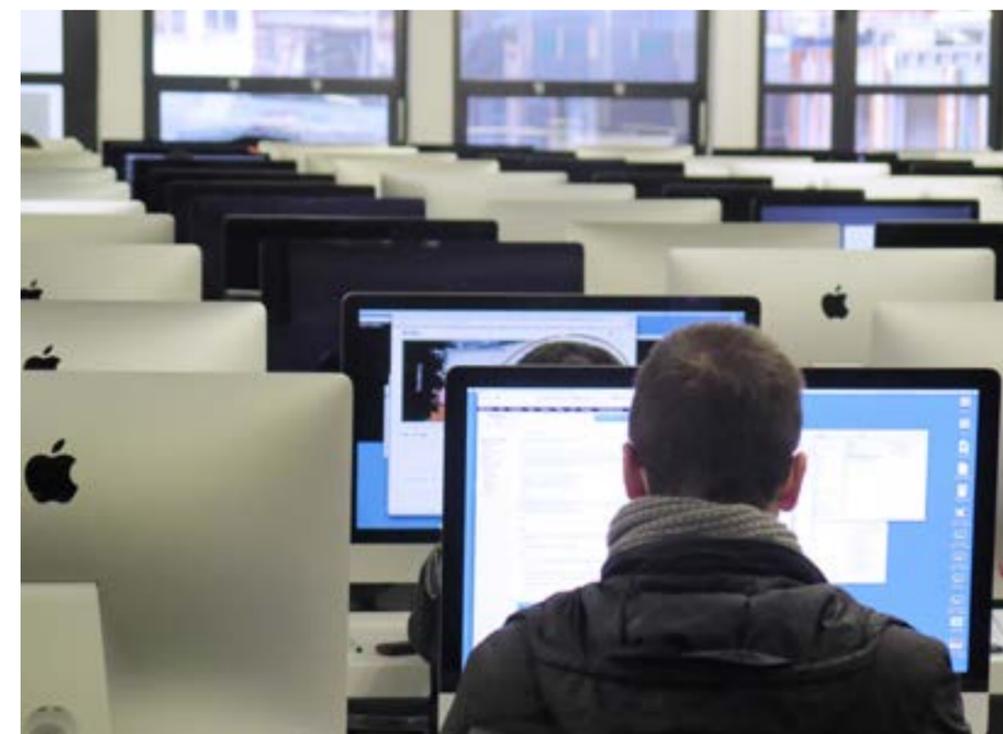
“We’re not earning a ridiculously huge pay cheque to pay for all that education, and there’s no money for professional development,” she says.

But the costs and challenges may be worthwhile.

Huisman says she won’t lose her job as a result of the new criteria. So why even worry about it? Because failing to keep pace in the credentials race makes it much more difficult if she ever wants — or has — to move to another job.

And, of course, with what disruption is doing to the workplace, the future is increasingly difficult to predict.

Image: Photo via Visual Hunt



SKILL UP, EARLY

BY KRISTA JONES

Almost 25 years later, the immortal marching order from Bill Clinton campaign wizard James Carville – “It’s the economy, stupid” – is in need of an update.

AND OFTEN





Image: Krista Jones, head of Work & Learning, MaRS Venture Services

Because today it really is all about skills. Retooling employees has become a real challenge, not only for corporations, but for educators who must train current employees, as well as those of the future, to stay ahead of the technology curve. The pace of change is now measured in weeks and months, and the traditional systems of learning can't keep pace, which is why both corporations and higher education must embrace continuous learning.

Work is not working for millennials – those 18 to 30 and the demographic facing the highest unemployment rates. Last year, European Union members such as Spain recorded an astounding 46% of young people without jobs. In Canada, the rate has hovered at 13%, and this figure doesn't even account for so-called “underemployed” youth, estimated to make up another 27%.

The inequities caused by the gap between over-educated and under-employed workers is worrying politicians everywhere. As Klaus Schwab, founder and executive chairman of the World Economic Forum, pointed out in a recent article, the gap in the job market that increasingly segregates the low-skill/low-paying and high-skill/high-paying

jobs will lead to increased social tensions, and political unrest.

The current definition of low and high skills is no longer divided by manual laborers versus those with a university degree. Today, higher-education programs are no longer valued equally. On one side of the employment gap are the skilled engineers, coders, designers and marketers, who are in such demand that technology recruiters go to great lengths — even staging hackathons — to source them.

But the tragedy is that people with degrees in the humanities are often forced to take low-skilled jobs. Take Talia Ben-Ora, a 25-year-old graduate who recently wrote an open letter to Yelp CEO Jeremy Stoppelman, arguing that she couldn't live on minimum wage, which is all she earned as a customer-relations rep at Eat24 – particularly in San Francisco, where the food-delivery startup owned by Yelp operates.

Ben-Ora's millennial cri de coeur, publicly calling out her boss via social media, was controversial, but her dilemma is not uncommon.

Western University graduate Adam Smith recently spoke to the Toronto Star about being unemployed and living back home, eight months after graduating with a double major in sociology and criminology. Having applied for 50 entry-level jobs, he's still looking.

The employment gap has widened. So how do we fix it? The answer: Skill up, early and often.

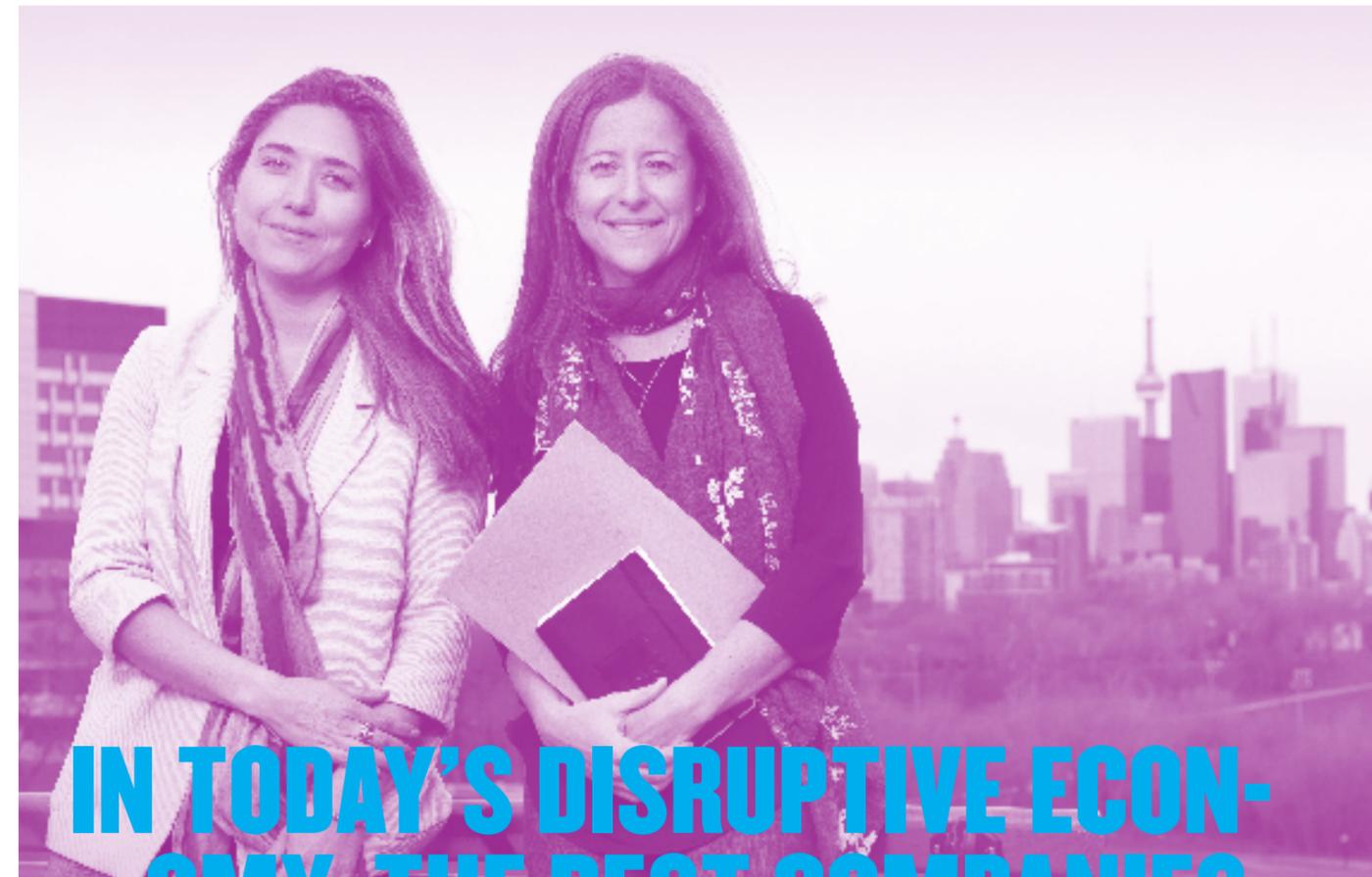
Schools are beginning to introduce coding programs into high school. With the B.C. technology sector employing 86,000 people — more than forestry, mining and oil and gas combined — the government is betting on a new curriculum to equip students for future jobs. It's a laudable strategic plan, but coding alone is not enough. Students should be introduced to entrepreneurial thinking at a young age, or have access to programs such as the Toronto-based

Future Design School, created to tap the entrepreneur in all children by teaching them how to develop commercially viable ideas, thus building confidence in their ability to innovate.

But even curriculum-based changes — when they happen — will not solve the youth-unemployment problem. The gap will be bridged only when corporations themselves embrace a learning culture and provide relevant on-the-job skills training. In today's economy, the best companies understand that education never stops, and provide venues for employees to take advantage of learning opportunities.

A recent article in the Harvard Business Review by LinkedIn's Pat Wadors spells it out: "For organizations to win in the market, they must help their employees stay relevant in their skills. They also need to prepare the workforce to be agile and to adapt quickly to changes in the market." This is not

Image: Sarah Prevette, Founder & CEO, Future Design School (left); and Sandra Nagy, Director of Learning, Future Design School



IN TODAY'S DISRUPTIVE ECONOMY, THE BEST COMPANIES UNDERSTAND THAT EDUCATION NEVER STOPS, AND PROVIDE VENUES FOR EMPLOYEES TO TAKE ADVANTAGE OF LEARNING OPPORTUNITIES.

only critical for corporations but for anyone working in the public service or non-profit sector.

Skills training is essential. According to a recent McKinsey study, on average, young recruits now must have more than five times the number of skills required as recently as 2009, when programming languages such as Swift and Hack, and communications tools such as Slack, PostBeyond and Pressly, were still awaiting birth.

While that may seem to be a frightening prospect, our growing startup community is well-positioned to deliver tools to help employees keep pace by

learning on the job. It's not formal apprenticeship; it's "skilling up" through digital acceleration. A number of new firms are offering HR tools to help employers with assessment, performance management (Kudos, Wirl), and employee recognition (Achievers, Nudge Rewards). Beyond such tools are new software platforms that manage workplace space, community activities and, most important, online training (Horizn, Prollster).

Faced with a tough job market, many young employees are accepting lower salaries or entry-level positions, and are frustrated that their higher education didn't translate into prestigious jobs.

Luckily, some of the new tools offer employees a way to accelerate skills acquisition.

Sahar Taghooni works in at fast-growing telecommunications firm that now offers 1,000 different SKUs or product lines to its customers.

The old learning management tools were "not meeting our audience's demands," she says. But two years ago, the company decided to try another approach, in this case turning to specialists, who provided more efficient ways to train salespeople by offering short, daily bursts of learning via a game-like interface.

Now Taghooni is seeing a wave of ambitious sales reps who are using the tools to scale sales metrics. Properly equipped, they perform better.

The future of work will be shaped by a skills culture: innovators providing models to enable lifelong learning in a time frame that suits the marketplace. And for millennials trying to close the gap between their aspirations and the jobs available to them, these technologies may prove to be a lifeline.



YOUNG RECRUITS NOW MUST HAVE MORE THAN FIVE TIMES THE NUMBER OF SKILLS REQUIRED AS RECENTLY AS 2009."



THE WAR FOR TALENT

BY JOHN LORINC

As Chris Bryson, the founder and CEO of Unata, scales his five-year-old e-commerce loyalty services firm, he is keenly aware of the sword of Damocles that hangs over the 40-employee startup.



Image: "Wocintech (microsoft) - 52" by WOCinTech Chat / CC BY 2.0

Previous page image: Chris Bryson, founder and CEO, Unata (left) and Gimmy Chu, co-founder and CEO, Nanoleaf

He knows that whenever he hires a talented young software developer, the person's LinkedIn inbox will quickly fill with solicitations, including some from headhunters working for U.S.-based firms or global tech giants that can easily out-bid his company on salaries and benefits.

"To me, it's not that different than retail," he says. "You're not necessarily always competitive on price."

Indeed, many Canadian graduates and talented younger tech workers are lured south by U.S.-dollar compensation packages, the allure of working in San Francisco or Silicon Valley, and the prospect of hitching their careers to firms on meteoric growth trajectories. "When someone leaves, it's almost like being broken up with," says Gimmy Chu, co-founder and CEO of Nanoleaf, the Toronto-based developer of ultra-efficient LED lighting.

For startups that depend on employee creativity, the brain drain can strike in every corner, especially in sectors like information and communications technology, health and cleantech. We're talking about engineering talent, data scientists and researchers, observes MaRS vice-president for

talent Joanne Thomsen, who has been piloting a venture talent program at MaRS.

When someone leaves, it's almost like being broken up with."

Few dispute the financial imbalance. "Money and opportunities are the reason 90 per cent of Canadians head to the Valley," says University of British Columbia graduate Ricky Gu, who ran his own startup before moving to the U.S. to work as a senior software engineer at FullBottle, a crowd-sourcing platform for advertising creative. "The pay is twice what it is in Canada."

Lifestyle factors also play a role. "I'm from Toronto, so skipping winter is very appealing," adds Michael Caputo, an engineer at Evidation Health, in San Francisco. "I'm also a cyclist and a runner, so being able to do both those things through the year in very mild weather is another plus."

Some startups are run by young, inexperienced people. You want to make sure they feel they're being treated fairly, which will help create trust — and retention.”

Yet it's increasingly clear that the talent has begun to flow in both directions. In fact, according to a report from the Silicon Valley Competitiveness and Innovation Project, the storied California tech hub has lost more residents than it gained in recent years, as the high cost of living, quality of life issues and opportunity gaps for minorities are making rivals, such as the Toronto-Waterloo tech corridor, more appealing.

Other factors, relating to family, future opportunity and a sense of national loyalty, are also at play. Toronto native Ian Logan, who works in San Francisco as an engineering manager at accommodation disruptor Airbnb, says that, when he left school in 2008, he had a clear understanding of the importance, for his career, of spending five to 10 years with a high-growth firm.

With that experience under his belt, he finds himself looking northward. “One of the draws to return to Toronto is family and friends,” Logan allows, “but I also feel that I can bring a lot to technology in general back home in Canada. I can see that happening within the next two years.”

“For myself, I was able to gain enough context in the Valley to come back to this ecosystem and make a difference,” says Amar Varma, general manager of mobile in Toronto for California-based Pivotal Software, Inc. “That's been helpful, because I don't have that chip on my shoulder. I understand how they work; they're people too.”

To attract either grads or those returning north, Canadian startups should foster a culture that allows employees to tackle tough problems, and work closely with colleagues who are both talented and collegial.

Unata's Bryson says he looks to provide those sought-after hires with plenty of responsibility, and makes certain to check in with employees regularly. “The first couple of hires are really, really important,” he adds, noting that they can create a virtuous circle by establishing the culture of the operation.

Thomsen urges startups to make it clear to new recruits that they will have significant learning opportunities and the chance to greatly impact the company's growth. Also, due to the small size of these firms, they will invariably participate in

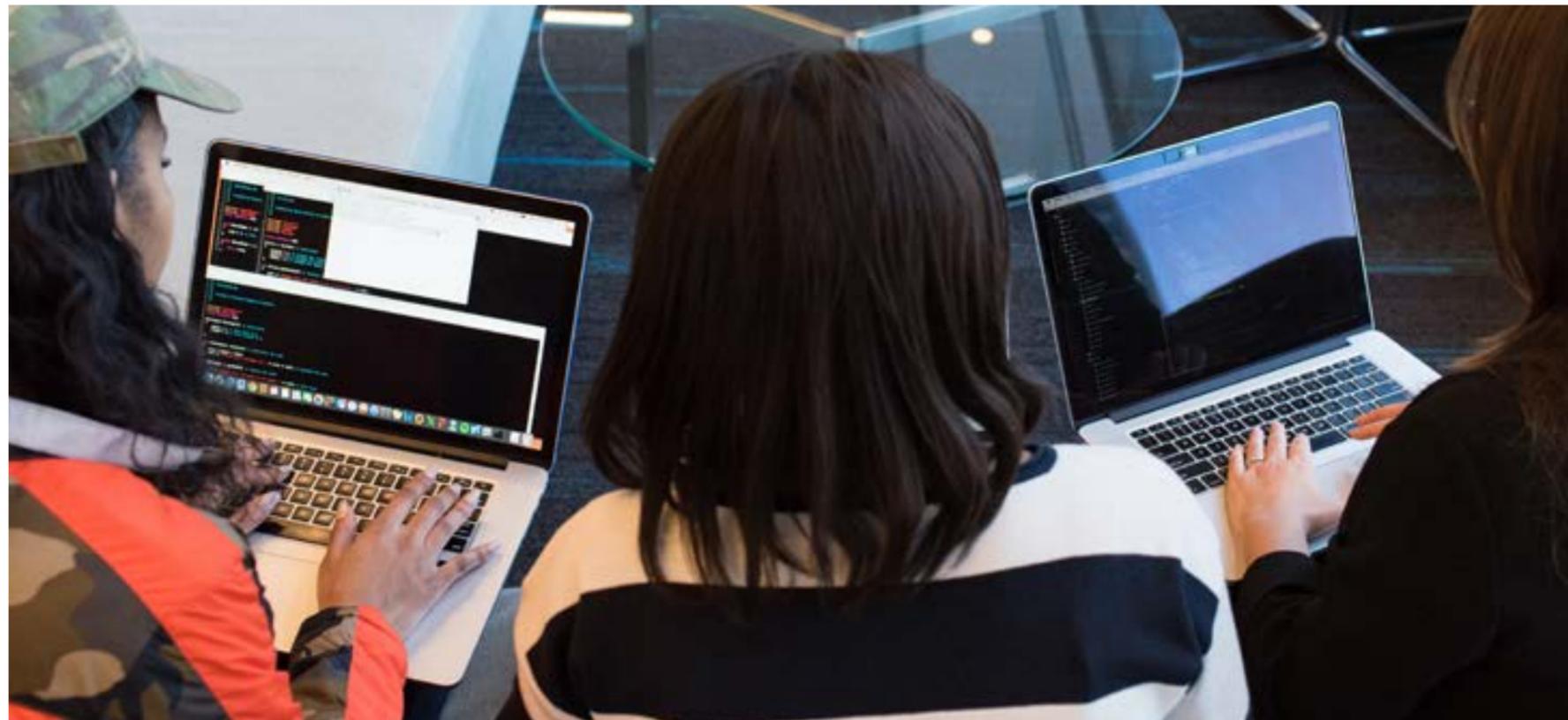
decisions that extend beyond their specific expertise. “It’s exciting, to be a part of a high-growth venture,” she says.

When it comes to compensation, universities are telling graduates they should look at all elements of a package, including benefits and options-based profit-sharing. Bryson says Unata closely monitors compensation levels in the industry and seeks to remain close to average levels, although he’ll aim to make counter-offers for employees who seem to be straying.

Heather Galt, a former Kik Interactive manager who now heads the talent initiative for Communitech in Waterloo, urges startups to establish mind share with potential recruits by making sure they are visible in their own communities, either through involvement in charitable events, hackathons, meet-ups or other activities meant to build their corporate brands.

She also says startups can think about other ways of offsetting the compensation differential, using inducements such as flexible hours, telecommuting or other career-advancement opportunities.

Image: “Wocintech (microsoft) - 60”
by WOCinTech
Chat / CC BY 2.0



Thomsen adds that, when startups are looking for new talent, the founders must be actively engaged in the hiring process. “The CEO is in the best position to convince candidates to join the organization by sharing their startup story and vision in a passionate and compelling way.”

Ultimately, a young company’s brand equity is so intimately linked to its people that its reputation is paramount, and represents a crucial ingredient in the war for talent.

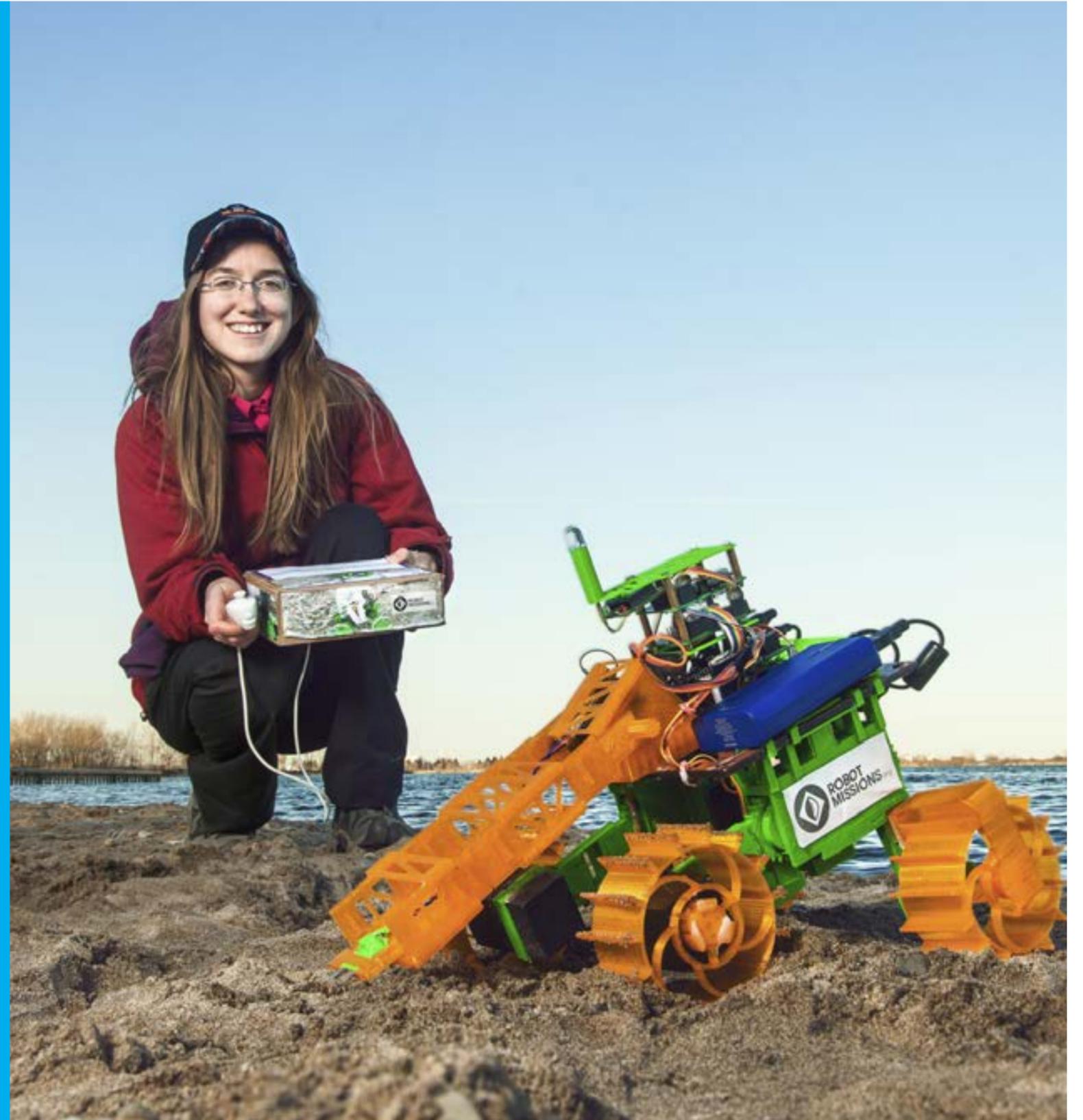
“Treat your people fairly,” advises Jimmy Chu. “Some startups are run by young, inexperienced people. You want to make sure they feel they’re being treated fairly, which will help create trust — and retention.”

With files from Lara Torvi

TRAINING TO TAKE THE LEAD

BY JOHN BARBER

Anyone who thinks that leaders can say what they like should consider the sobering experience of Peter Sloly.





Previous page image: Erin Kennedy, Studio Y fellow, with her shore-cleaning robot.

Earlier this year, the 27-year veteran, and deputy chief, of the Toronto Police Service paid a call on Studio Y, a leadership program for young people based at MaRS Discovery District. The purpose of his visit was to discuss the challenge of police reform. But not long before, he had lost his bid to become chief of the country's biggest law-enforcement agency and, in an animated to-and-fro car-

ried live on the Internet, he described his frustrations so candidly that his comments landed on the front page of the Toronto Star.

The upshot, for Sloly, was his departure from the TPS soon afterward. For Studio Y's two dozen participants, it was an encounter with reality rarely seen in academe. Their intense eight-month

If we look at the future of work and learning, we know that educational models are out of date and they need to be hacked.”

program is designed to stretch proven talent into the broad capabilities necessary for leadership in a world where academic achievement alone is no longer a guarantee of success.

‘MESSY’

The drama sparked by Sloly couldn't have been a better object lesson for the future leaders whose questions set it off. “He made it clear that leadership is messy, leadership is not linear,” says Studio Y director Lekan Olawoye. “You take some losses, and you continue on.”

The deputy chief's apparent willingness to sacrifice his career for the sake of his beliefs certainly made a big impression on Studio Y alumna Arij Elmi. She says that learning how to understand and mediate

such conflicts is one of the main reasons she came to Toronto and Studio Y from her home in Windsor.

“There are consequences to what he did,” she reflects, “but there are also benefits in retaining your integrity and being proud of the work you’re doing.”

The unexpected takes many forms at Studio Y. For example, nobody who knows Erin Kennedy, another alumna, would be surprised to find her tinkering with a kit-built Geiger counter at an improvised electronics bench decked with a 3D printer and a prototype robot. However, to find her pursuing her passion not in a laboratory but in the retail concourse of a sleek new office building at MaRS Discovery District takes some explaining.

‘REAL PURPOSE’

Of course, she too is a kind of prototype. By the end of her time at Studio Y, her latest robot was put to work clearing debris off beaches and shorelines. And its maker acquired skills and goals far beyond the scope of the intensely focused talent that brought her here — fully prepared, she says,

“to apply my tech skills to something that has a real purpose.”

The zigzag path that drew Kennedy from eastern Ontario included a few years of university in upstate New York, online instruction in digital fabrication from the Fab Academy, and the creation and sale of RoboBrrd, a kit for children to build robots of their own. “I guess you could call it education by doing,” she says, as the Geiger counter beeps softly on the bench.

But that’s what made her a good fit at what amounts to a finishing school for those who have already pushed beyond the bounds of a conventional education.

“We look for young people who not only want to be leaders, but have shown their ability to be leaders,” says Olawoye, describing the three-year-old program’s ideal candidate. “They’ve done something with nothing.”

LOST CERTAINTY

Studio Y is an educational experiment because

Studio Y is an educational experiment because it is not only trying to mould leaders to master a fast-changing work environment, it is prototyping a new way of learning.”

it is not only trying to mould leaders to master a fast-changing work environment, it is prototyping a new way of learning. Here, working and learning combine to produce an essential toolkit to help young people thrive in a world where the old certainties have all but vanished.

In that, Studio Y is similar to many other programs that attempt to satisfy two often-divergent demands: the need to acquire both a broad academic education as well as the increasingly specialized skills required by the modern workplace.

It differs, however, by incorporating social purpose into the core of its free-form curriculum: Here, the idealism that fires millennial youth is put to the test, translated into a business plan and set loose to make the world a better place.

“The thing that makes us different is not just hard skills, and not just soft skills,” Olawoye says. “It’s not just leadership in general. It’s purpose-driven leadership.”

“If you don’t have a social conscience,” he adds, “you’re not a fit.”

NO OUTLET

Sarah Saska found her purpose. A recent PhD graduate from Western University, the former fellow came to Studio Y with a passion — women’s studies — and no obvious outlet. “I love my research, but I quickly realized I just didn’t aspire to stay in the academic realm,” she says.

Her overriding desire was to make change. “I couldn’t just do something that was going to sit on a library shelf and collect dust,” she says. “I really needed to figure out a way for it to have legs, and to bring value to the world in a more tangible way.”

At Studio Y, her research interest flowered into Feminuity, a new startup that advises companies and organizations on how to understand and empower women. “We harness the power of a gender lens to help individuals and institutions across all sectors and industries to do their work better,” she says.

Saska’s lateral move into a fellowship at Studio Y, which academic advisers described as “crazy,” turned out to be crucial. “For me the fellowship



Image: “Wocintech stock - 26”
by WOCinTech Chat / CC BY 2.0

Leadership and learning are indispensable to each other.”

John F. Kennedy

was a perfectly complementary piece to the PhD. It rounded out the more practical skill set and gave me everything I needed to be able to launch my company.”

As far as she is concerned, “If we look at the future of work and learning, we know that educational models are out of date and they need to be hacked.”

GROWTH?

After three years, the “hack” at Studio Y seems to be taking root. The next step, according to Olawoye, is to apply it broadly to effect systemic change. “We’re looking at a national scope,” he says, with the first phase executed at MaRS earlier this year at a summit to map out Canada’s future economy.

But educational consultant Rick Miner says it’s an open question whether such an elite — and expensive — program can have a system-wide impact.

“There are now 200,000 students enrolled in post-secondary education in Ontario,” says the for-

mer president of Seneca College. “How many of those can you reasonably put through that kind of program?”

What’s needed, Miner adds, is “a more robust system change” to better align the post-secondary system with the new realities of the 21st-century job market. “I think the principles are the same — more applied learning, more hands-on learning, more direct contact with jobs, more inquisi-

tive thinking, more opportunities to make mistakes without being labelled a failure,” he says.

“Those are laudable things we could build into our existing system,” he adds. “But maybe it takes programs like Studio Y to lead people to a different way of thinking, and to make those changes.”

Image: Anayah Phares, Lorraine Chuen and Tom Gleason, co-founders of CreateSpaceTO and Studio Y fellows



CREATING TOMORROW'S PROBLEM- SOLVERS

BY JOHN BARBER

At the Future Design School (FDS), disrupting the tenets of traditional classroom education is a thriving new business model.

Now a year old, FDS develops programs to transmit the gospel of entrepreneurship and innovation throughout the elementary- and secondary-school systems. “We’re focused on empowering the next

Image: Future Design School student Allison Duckman, 14, created an app during the program that helps kids express loss and access grief support.



generation to solve the world’s most pressing problems,” explains FDS director of education Sandra Nagy.

It’s no small ambition, but neither is the opportunity any small thing. “Our goal is to get this type of programming to every teacher in North America,” Nagy adds.

Elementary and middle school provide the ideal setting in which to build creative, problem-solving skills, according to the FDS philosophy. But it’s also the place where what Nagy calls “divergent thinking” slowly yields to creeping conformism. “We feel that they do an amazing job in kindergarten, so how can we create that sandbox for learning that allows them to keep being curious and resourceful and mindful of how they can help the world?” she asks.

Creativity is as valuable as numeracy and literacy in the FDS program. “We know that, if we think about changing the world, we need to focus on developing kids’ creativity and ingenuity,” Nagy says.

But the basis of the program is entirely practical. Its goal is to teach repeatable skills in prob-

lem-solving using ideas suggested by students themselves. “We guide the kids through a process of ideation, validation and rapid prototyping,” Nagy says, “teaching them a real skill-set for problem-solving.

We’re focused on empowering the next generation to solve the world’s most pressing problems.”

“They develop a degree of creative confidence that they wouldn’t otherwise get in the classroom.”

The variety of projects that FDS students have undertaken already is nothing, if not imaginative: One student designed a system of electric-car-charging stations that would allow homeowners to sell electricity, while another team created an online game to raise funds for a robot arm to collect space debris. Two others focused on delivering clean water to remote communities, and a number of students developed apps to address social problems — from bullying to illness.

While FDS works to expand its reach, the next few months will be spent on conducting a series of evening programs and Young Innovators Camps throughout Ontario, often in partnership with local innovation centres, including MaRS, where it is a tenant and a venture client of the Work & Learning cluster.

“By being at MaRS, we have ready access to lots of entrepreneurs who want to talk to kids about their journey,” Nagy says. “We have a community of innovators that come out to hear the kids pitch, and it’s amazing.”

The response among students and educators to the young company is equally heartening, she adds. “It’s been a true labour of love for us but, more importantly, we’ve seen amazing things.

“You can have a business that does well and does good. We want to demonstrate that to children, too.”



ENTREPRENEURIAL THINKING FOR TEACHERS

BY JOHN LORINC

Five years after he began teaching high school, Ryan Burwell found himself facing the sort of career crunch that those in his profession rarely encounter. It was not long after the 2008 financial crisis and the small Toronto independent school where he worked had to shut its doors.

He and a few teaching colleagues decided to launch a new school where they would offer a variety of creative experiences, including a fully equipped music studio run by students and teachers. Burwell was so keen that he took an apartment nearby so he could maximize the time he invested in the business.

Having embraced the entrepreneurial lifestyle, he promptly smacked into one of its defining experiences: “I made a classic entrepreneurial error,” he says. “I thought it was too good to fail.” But fail it did; after two-and-a-half years, the new school also went bust.

Burwell, 35, concedes the closure was “a bitter moment,” yet also a profoundly educational one. “It taught me the value of not falling in love with your ideas — they need to keep evolving as you learn what does and doesn’t work.”

These days, Burwell is running a MaRS “entrepreneurial thinking” program aimed at training teachers not only to act entrepreneurially, but also to develop pedagogical techniques that push students to generate ideas, form collaborative net-

works and take risks — in short, fostering the sorts of skills that are valuable in startups and corporations alike.

Launched in 2012 by Joeri van den Steenhoven, director of the MaRS Solutions Lab, along with a team of educators, the program has been road-tested at MaRS summer camps and with teachers at 13 Toronto District School Board sites. It includes online teaching materials and coaching supports, entrepreneurship boot camps and hackathons, and a two-week Summer Institute for teachers who want to hone their entrepreneurial-thinking skills by experimenting with new techniques. Teachers who attend the Summer Institute are invited back to join specialized training sessions with colleagues in the fall, with the goal of building a critical mass of innovation-minded educators within a given school. The next step is to scale the program, says van den Steenhoven. “I hope in future years that more schools will adopt it.”

For many years, MaRS has offered entrepreneurship training to adults through a variety of training programs. But van den Steenhoven says the organization decided about four years ago to involve



Image: MaRS Future Leaders student

Previous page image: Ryan Burwell,
Instructional Designer and Facilitator,
MaRS Future Leaders

youth by developing an entrepreneurship camp geared to Grade 9 students.

The rationale was clear, says Burwell, who points to sobering studies that estimate almost two-thirds of today's elementary-school students will wind up working at jobs that don't yet exist. That dynamic is very much in evidence now: Startups and smaller firms provided almost all the jobs that have been created in Canada since the 2008 credit crisis, says Joe Wilson, who helped to develop the program and is now director of business development at Spongelab Interactive, a learning technology company based in Toronto.

Almost two-thirds of today's elementary-school students will wind up working at jobs that don't yet exist."

The curriculum evolved through a lot of trial and error. "In entrepreneurial fashion, we tried a lot of things," recalls Wilson. "We got feedback from the kids and doubled down on the stuff that worked."

One critical element, he says, was a series of brainstorming activities that encouraged students to see themselves in one of three key positions found in most entrepreneurial startups: hackers, hustlers and designers. "The kids get that," Wilson observes. "You need someone who can get their hands dirty and take things apart. You need a kid who is good at talking. And you need someone with deep customer empathy who is thinking about the user experience."

The program's content is also based on insights Burwell gleaned while working with Twenty One Toys, a fleet-footed startup that makes wooden toys designed to teach social and emotional skills to both children and adults. He was hired for his education experience but soon realized how an entrepreneurial environment could help teachers.

Burwell acknowledges that some teachers are willing to try new ideas and draw on resources outside the school. But many more rely on well-practised techniques.

While they must satisfy the expectations of administrators and parents, "teachers have to recognize

that they can do all those things, but not in the way it says in the binder," he explains. "A teacher who is entrepreneurial will try things that may not work, and involve students in the experiment."

But Burwell is also quick to point out that many of these principles are firmly rooted in the longstanding traditions of the Socratic approach and critical thinking. "I don't think we're re-inventing the wheel here."

One of the program's activities — an exercise to show students what it means to have an effective brand — is nothing more, Burwell points out, than a promise to deliver a certain value. The students build brands for themselves based on some personal reflection of their own skills.

Participants then pitch themselves and create networks, which happens frequently with startups and, in the process, learn to "pivot" as they discover how their skill-sets intersect with those of their teammates. "We're asking students to treat collaboration as an active skill, not a passive one," says Burwell.



Image: MaRS Future Leaders students

Adds Wilson: “We want kids to imagine themselves as problem-solvers ... contributors or creators, not just consumers.”

Teachers who participate in the program try the new ideas, and then reflect on what works. The resources are downloadable but everyone is encouraged to adapt them to suit their classrooms. “We ask the teachers to act like entrepreneurs, too,” Burwell says, but adds that it’s critical that they — and ultimately their students — be persuaded this approach is relevant. “You need to tell them what value it can add,” he says.

This past spring, Burwell had a chance to put all these ideas to the test in an intriguing experiment that also involved the Ontario Ministry of Education’s Innovation, Creativity and Entrepreneurship program and the Toronto Catholic District School Board — which a few years ago developed The Next Lesson, a plan for delivering 21st-century education.

The lengthy document, Burwell observes, contains useful ideas, but remains firmly rooted in the 20th century. “We asked the question, ‘What if students

We want kids to imagine themselves as problem-solvers ... contributors or creators, not just consumers.”

had a chance to look at the material and present their ideas?’ We left it open to the students to answer the question, ‘What’s the problem with this document?’”

The kids’ response was trenchant and thought-provoking. Burwell and team began to work with a select group of them on new teaching ideas. When done, the students pitched them to a panel of board administrators and educators that has pledged to support the best one.

Students teaching their teachers — the experiment seems as edgy and surprising and insightful as anything a startup might produce, which, Burwell allows, was precisely the point.

In the fall of 2016, the next issue will examine the future of health: “The next revolution in digital healthcare could significantly reduce the physician’s role as the traditional custodian of medical knowledge.”

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