

The Future Skills Centre Podcast

Season 4: Episode 2

Educating for Sustainability: Green Skills in Canada

The urgency of the climate crisis is undeniable. The transition to a clean economy demands significant changes in skills, occupations, and attitudes. In this episode, we delve into the challenges, opportunities, and strategies associated with developing higher education graduates who are equipped to lead and grow a sustainable economy. Our distinguished guests provide key employer, post-secondary, and international perspectives. Join us for a thought-provoking discussion on the intersection of higher education, employment, and a sustainable future.

Guests

Kevin Nilsen, President & CEO, ECO Canada

Charles Hopkins, UNESCO Chair in Reorienting Education Towards Sustainability, York University

Tanzeela Faisal, Research Associate, The Conference Board of Canada

Host

Heather McIntosh, Associate Director, Education and Skills, The Conference Board of Canada

Links

Future Skills Centre and Conference Board of Canada links, such as recommended articles and webpages, social media handles, etc.

Future Skills Centre Homepage:

<https://fsc-ccf.ca/>

Toward a More Sustainable Future: Preparing the Students of Today for a Greener Tomorrow.

<https://www.conferenceboard.ca/product/toward-a-more-sustainable-future/>

The Conference Board of Canada Homepage:

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Transcript

Heather McIntosh:

Welcome to Season 4 of the *Future Skills Centre Podcast*, presented by the Conference Board of Canada. Here we explore how skills development can prepare Canadians for the future of work. I'm Heather McIntosh, your host for the season, and I'm the Director of the Education and Skills Team at the Conference Board of Canada. Today we're discussing the topic of green skills, basically all the knowledge, abilities, values, and attitudes that make a society sustainable.

This includes not only technical and scientific knowledge, but also social and emotional skills, things like creativity and empathy, and the ability to incorporate a sustainability mindset and environmental awareness into managing and decision making. There is a high demand for these green skills, exceeding the number of people who have them. We know jobs that need these green skills often require advanced education and training. That's why it's crucial that post-secondary institutions are equipping graduates with these skills. Higher education shape the future workforce and future leaders that will help us transition to a clean economy.

On this episode, we discuss the Canadian job market needs for these green skills and how post-secondary institutions are stepping up to the plate. We'll also explore the history and context for education for sustainable development. Thanks for joining us. Let's dive in. First, let's get some perspective on the current state of sustainability jobs and environmental roles in the Canadian job market. I'm with Kevin Nilsen, President and CEO of ECO Canada based in Calgary. Welcome, Kevin.

Kevin Nilsen:

Thank you very much. Happy to be here.

Heather:

I'm wondering if you could tell us a little bit about ECO Canada and the work you do there.

Kevin:

ECO Canada is a workforce development organization dedicated to support Canada's environmental sector from an HR point of view. We work extensively with the various stakeholders in the sector to make sure that there is an adequate supply of competent people to meet the current and future demand for environmental expertise.

Heather:

Kevin, what demand is the organization responding to?

Kevin:

Right now, we know that the environmental sector is growing at a tremendously rapid pace. Our research suggests that the sector is growing at a rate of 17% in 2029. We're also faced with a retirement challenge that the entire country is faced with. Within our sector, that's about 30% retirement to 2029, which is significant. We need new people in to replace existing professionals in the sector. The sector is also expanding into new and emerging areas. We all know about climate change, moving beyond the actual challenges to come up with the mitigation strategies. We know the blue economy is big in Canada.

How do we, with the largest ocean shoreline in the world, capitalize on that, become leaders in that field? Clean technology is also very key on our agenda. How do we make sure that we have the competent people that's needed in those specific areas? Which is all from the traditional environmental science-based occupations to more into the newer areas. We know that if you want to be a successful finance manager, you need to have green literacy skills these days. If you want to be a construction manager, you also need to have green literacy skills. What are all these new occupations that now require a much more rounded experience and competencies within environmental areas?

Heather:

When you say environmental sector, what exactly does that mean?

Kevin:

When we talk about the environmental sector, it's the broadest definition you can imagine. It starts with some of the more traditional areas of environmental protection, which would be air quality, water quality, land quality. Moves into conservation and management of natural resources within mining, within energy, forestry, agriculture, to environmental sustainability, which really spans all sectors. Every organization will have sustainability departments these days. In addition to that, it's also in the emerging areas within manufacturing, green manufacturing. Electric vehicles is a big focus of Canada at the moment. How do we make sure that that's actually net zero? Not just a net zero for the transportation sector, but net zero overall. The sector is broad and it's encompassing really every industry across Canada.

Heather:

I'm wondering if you can describe what are the mechanics of how your organization works?

Kevin:

Everything we do is grounded in labor market research. We have a team of economists that tracks the sector, tries to come up with, what are some of the gaps that are there? What are some of the opportunities that are there? What programs can we create to stimulate a perfect balance in the supply and demand of competent people? With that in mind, we develop training on our own that covers gaps that are not covered by any other training providers or academic institutions. We work with organizations on the recruitment front, making sure that we support them in getting adequate people, getting them trained, getting them certified with our EP, Environmental Professional Designation.

Overall, it's anything that has to do with human resources in the environmental sector. We do have about a million people coming to our

website on an annual basis looking for either to get into the sector, to get a job, or to grow in their careers.

Heather:

I understand that ECO Canada runs a variety of programs, events, and training initiatives. What is your approach to plan or develop these initiatives? How do you balance the needs of academic partners, employers, government, and individual learners within these initiatives?

Kevin:

We start everything with research and usually gap analysis. What are some gaps that are there? Then we try to bring in perspectives from academia, from industry, and then use expertise that's there in the development of the training. We always try to ground things in what we call the National Occupational Standards. We've developed NOS, or National Occupational Standards, over the past 25 years, which are competency benchmarks that employers have identified as being needed in the industry in order to successfully do various types of jobs. Those are at the core or the backbone of all training that we do. Then it's also important to evaluate that training and to update that training as needs emerge and as needs changes.

One example that's easy to understand would be within environmental monitoring. Traditionally, environmental monitors would have a clipboard, would go into the bush, and would count moose, for example, and would do that periodically to see if there's any changes, any trends. Now with emerging technologies, we have drone technology that can do that. We have acoustic monitoring that can take care of much of that. That is more accurate and more rapid, but it demands a little bit of a different skill set. As we're doing this, we need to always bring in the new players that are in this field to try to ensure that the training is useful and it's needed in the sector.

Heather:

I'd love to know more about what do employers want? What do they need? Where are the gaps?

Kevin:

It's a broad question, but employers, and we do research and talk with employers on an annual basis, they rarely complain about the technical skills of graduates. Overall, universities and colleges do a very good job of making sure that the recent graduates have the technical skills they need. However, when it comes to more enabling competencies or more sometimes called soft skills, that's more of a gap. That can be anything from, for example, financial literacy, working available hours. Often when technical people come from university, they're not under any time crunch. They go to the lab and they can spend weeks on end trying to come up with some solution.

That's not feasible in the private sector. You have to come up with a solution within a particular timeframe and everything has to make financial sense. Some of those gaps are there. Project management is probably the biggest gap we're seeing. Organizations lose a lot of money by poor project management. We've developed a couple of courses to try to mitigate some of those gaps that are in the project management sphere specifically as it relates to the environmental sector. A couple of years ago, we did an analysis on climate change. There's a lot of focus on climate change. There's a lot of programs that dabble in climate change.

From our feedback from employers, it was that, okay, we don't need more people who have knowledge about climate change. We need people who have solutions to it. Someone who can actually come into an organization and determine, okay, where exactly should you build that dock so it will sustain a changing climate over the next 50 to 100 years. Those real concrete skills is what's needed and what employers are looking for, beyond just awareness of what's happening.

Heather:

Are there things that you believe that post-secondaries need to do to better respond to the needs of Canadian employers as we navigate through the climate crisis?

Kevin:

I think academic institutions have gone through an evolution over the past 10, 15 years. When we started working very closely with academic institutions about 15 years ago, some institutions had a very high hesitation to work with us because they valued academic freedom above all else. We've seen a shift in that where more and more organizations or academic institutions are embracing the notion that graduates from programs need to have a career path. They need to have a smooth transition from academic institutions into the workforce. If not, we end up with an over-educated population that's underutilized and that's not what we want.

Although academic freedom is still exceptionally important as something we all stand behind, and more and more organizations are working with us to try to use some of the competency standards that we have come up with as frameworks for program accreditation and take that very seriously in developing programs, but also rolling them out and improving them along the way. All the programs that we accredit at the academic level, we supply them with outside academic people and industry leaders to come in and take a review of their programs once every seven years to make sure that they're still aligned with industry needs once students come out of it. That has proven to be quite successful.

Heather:

Kevin, how can we improve alignment between Canadian post-secondary education and industry needs?

Kevin:

Yes, that is a challenging job because it has different focus areas. I think as a sector, we need academic input, and we need industry input, and we need them to work together. I think more and more we're seeing advisory committees at post-secondary institutions comprising a broad range of different types of industry experts, and that is a very positive sign.

We're seeing more and more of that interplay between them. When we run programs, we try to always have steering committees or advisory committees that involve both industry and academic experts. The more they work together, the more I think they can be part of shaping each other and in the process achieve what our goal is to have an adequate supply of good people to meet the current and future demand.

Heather:

Kevin, I've really enjoyed this conversation. I'm wondering if you can share some final thoughts on what you think it's really going to take for us to tackle this climate crisis.

Kevin:

The one gap that I see a little bit coming in the environmental space is critical thinking. More and more environmental challenges are we quickly jump on a particular solution, and then we don't question that solution. We just roll with it. One of them is, for example, around the electric vehicle, which is a big focus of Canada at the moment, where we want to electrify the transportation sector, and in doing so achieve more net zero. That's great. Unless we take care of some of the other areas, we actually won't achieve net zero with that. With that, the mining that goes into rare earth metals, who owns all those mines? What is the process of mining? How intensive is it in terms of emissions? Where is manufacturing of EV vehicles and batteries taking place?

It's taking place in China, where they use coal-powered energy in the process. Then you transport it to Canada. In the process, it just adds a ton of emissions. You move emissions from the transportation sector to another sector. I would like to see much more critical thinking about some of these things so we can attack those as well. I'm not saying that electric vehicle is not good because it's great, but you need to also look at all those other areas. That's where I think academic institutions need to really stimulate students to be active critical thinkers all the way through their programs so that they can bring that with them into the industry and not just be someone who follows orders and someone who does what they're told to do, but someone who can really take things to the next level.

Heather:

Thank you so much, Kevin. Next, we're going to dig into what's going on at post-secondary institutions. We'll take a look at the international level and the historical level to better understand the broader context for and the philosophy of post-secondary education for sustainable development. To have this conversation, I'm joined by Charles Hopkins. He is the UNESCO Chair in Reorienting Education Towards Sustainability at York University. Charles, I'm wondering if you can tell me a little bit about your work.

Charles Hopkins:

Yes. I hold a UNESCO Chair at York University in Toronto. UNESCO Chairs are sort of a strange mixture of an agreement between the United Nations Education, Scientific and Cultural Organization in Paris and a university to sort of blend and have the work of the professor align with many of the objectives of UNESCO. There are about 800 of these chairs around the world. I held the first one in the field of education for sustainable development. That's what I currently work at and have since 1999.

Heather:

You have vast experience working at the international level, including UNESCO, the United Nations University and many educational institutions and ministries of education throughout the world. How would you characterize the role of education in our global transition to net zero economy?

Charles:

Yes, it's at the heart.

Heather:

Tell me more.

Charles:

On four occasions now, the United Nations General Assembly has declared that education for sustainable development, not just education, but education for sustainable development is the key enabler of all the sustainable development goals, which are at the heart of our move towards a more sustainable future. Education for sustainable development is not just formal education. It's comprised of, yes, education, but public awareness, public understanding, training programs and so on. In that broad aspect, you can see that, first of all, we need the research to find out how to move forward. We need education for disseminating that. We also need public awareness and understanding because governments can't move without public support.

Heather:

What has been the evolution of international perspectives on education for sustainable development? You've been in this for a while, so I'm curious to get your perspective on how things have evolved over time, how they've changed for better, for worse.

Charles:

It's really changing for better now, but in the beginning, we have the concept of sustainable development that was agreed upon in 1987. They then took five years until 1992 to come up with a work program. I was involved with a handful of us in actually writing that particular document. Simply going out to the world's

education systems and saying the UN would like you to, it really didn't travel that far, but it sort of eked along. The next big step came with the second implementation plan, the Millennium Development Goals, which identified education again as crucial in moving forward.

It wasn't until we've now come back with the third implementation plan, the 2030 Agenda, with the 17 sustainable development goals at its heart, that they really look at the role of education for sustainable development. We had a decade of education for sustainable development, a global decade from 2005 to 2014. During that time, nations really did begin to see and understand what we were doing. We had to move from a concept of, when we look at it as sustainability education, along with peace education, driver education, environmental education, anti-smoking education, anti-drug education, on and on. I used to be a superintendent of curriculum with the Toronto Board of Education years ago.

I've made up a list of 80 of these I call them adjectival educations that we had to squeeze into an overcrowded curriculum. What we've had to do in working through UNESCO and ministries and so on, it's saying, we're not trying to create another discipline. What we're trying to do is embed sustainability and creating a more sustainable future, embed that into the DNA of education, public awareness and training. You don't want to just have a course in sustainable development.

That would reach a handful of students who would like to take that particular course. We need to reach every graduate. It has to be embedded in the whole thing. That's been the change from the UN would like you to, through to guilt, you really should do this because of what is happening, through to now, we look at it as an essential part of a quality education. If an education system did not address the future of the planet and the well-being of not only humans, but all life, is that education really a quality education?

Heather:

I'm curious to know, where does Canada stand? Are you able to comment on comparatively to other nations? How is Canada doing?

Charles:

From a look at training, I think we're doing really quite well. We may not be the best in the world, but certainly the history of our community colleges is a tremendous one. We were early into this in the 1990s. We were real leaders in it. Universities, not so much, but they are really coming along now pretty well. I saw a survey recently from Universities Canada that said 76% of Canadian universities, there are about 50 of them, all have a pretty advanced sustainability plan. We would assume that these strategies are looking at what is being taught, what is their research programs, how is that being affected, community service, and their operations.

What understanding does a graduate leave from their university with? What understanding? It becomes part of the milieu, part of the brand, part of what it means to have this kind of an education.

Heather:

Yes. In that university sector, there's lots happening it sounds like.

Charles:

It is front and center compared to 10 or 15 years ago where it was not on the radar at all. I'm very hopeful.

Heather:

How do post-secondary graduates need to see or understand the world when they graduate? What can post-secondary institutions do to help equip students with the skills, the mindset that they need?

Charles:

It boils down into maybe two or three big sections. One is the personal life skills, and a second one would be what you need for the workplace or your employment or whatever. Then the third one is moving beyond the

knowledge and skill to action. Let me back up a little bit and just talk about personal skills, sort of the critical thinking thing. That ability to see what's going on, to critically analyze it, understand it in a complex situation. Another one would be the anticipatory, the skills of evaluating and understand what's emerging, what's coming and how you should act in two ways.

One is if it is a newly emerging thing, like when SARS, COVID, when these kinds of issues or if they're long-standing issues, but what should we do about energy wastage, water issues, that sort of thing. Then a really big one is the whole understanding of media and literacy. What is truth? Does this sound reasonable? How do you navigate through the fire hose of information that is coming at you and managing that? Then those are personal skills, but then there are all the employment skills where you really do need to have a basic understanding of sustainability, social, environmental, economic, and habit. Then secondly, what are the particular aspects in your employment?

There's the big one because you have to be able to bring about change. Then the other is the skill, especially for college and university graduates, to be agents of change. Globally speaking, it's a small percentage of people who graduate, especially from university, and yet they will be the vast majority of the world leaders. They'll be the shapers of the future. That's why it's important that everyone who graduates from college and university has some idea of what it is that we're talking about. This can't just be a particular part as a course in faculty of environmental study. It has to be embedded in health care. It has to be in the law. It has to be in carpentry, in plumbing, all of these various aspects.

Heather:

I really like that. Everything from law to carpentry, right? I'm wondering if there's any sort of elevator pitch or something you want to say to sum up this interesting and critical nexus of post-secondary education and sustainable development.

Charles:

I'd just like to go back with post-secondary in the context of number one, how important it is that they do this because they are the ones who are creating the next generation of leaders, whether they're in the private sector, or they're in public sector. They will be the poets, the painters, the artistic influencers, head of faith-based groups, all of these things. They have a responsibility and that responsibility entails themselves transforming to become transformative agents themselves. The idea that quite often what we just try to grow our percentage of the population who attends, but simply doing what we've been doing better with more people is not the answer.

We need to come up with new forms of education. Somehow we need to go beyond the multidisciplinary kinds of working together in the university world to add the real world together with us so that we come up with transdisciplinary ways of thinking of things, that way of bringing together the leaders in the community with the university and college world to find ways that will be politically acceptable, that will actually work, that will have people on board to bring about the change we need. Bottom line, I'm very hopeful.

Heather:

I love it, Charles. I love it. This is so helpful. Finally, we'll hear about some recent Future Skills Centre research done by the Conference Board of Canada. I'm here with my colleague at the Conference Board of Canada, Tanzeela Faisal. Tanzeela is a research associate on the education skills team. Welcome, Tanzeela.

Tanzeela Faisal:

Hi, Heather. I'm happy to be here.

Heather:

We're going to talk about a research project on green skills that I understand you've been working on, which is a Future Skills Centre funded project. I understand that through this research, you wanted to understand what Canadian post-secondary institutions were covering when it comes to green skills in their program curricula and generally how leaders in Canadian schools are approaching the development of these skills. Tanzeela, could you tell me a bit more about this project and in a nutshell, what was this research project all about?

Tanzeela:

Heather, you already touched on it a little bit, but we conducted this project to gain a deeper knowledge of how Canadian post-secondary institutions can promote green skills in their future graduates. To do this, we held interviews with post-secondary institution leaders and educators who are knowledgeable about sustainability in higher education. The goal of these interviews was to gain insights into what Canadian post-secondary institutions, though these can include universities, colleges and polytechnics, are currently doing to prepare their graduates with the green skills that are needed for a more sustainable future and economy.

Heather:

From your interviews with these education leaders from across Canada, what did you hear about what Canadian post-secondary institutions are doing to support the development of green skills?

Tanzeela:

They're definitely doing stuff loud and clear. Post-secondary institutions across the country are actively integrating green skills into their campuses and curriculums, both formally and informally. I'll talk about the formal methods first. Many colleges and universities have degrees and programs specifically related to sustainability. They'll try to teach green skills in courses and programs like environmental science and climate change, but then green skills are also included in non-environmental courses.

For example, they'll include examples of biodiversity and climate change in courses like Math, History and English. Now informally, beyond the classroom, institutions try to promote environmental consciousness in their students through programs like student clubs, recycling programs, tree planting and other sustainability events and workshops like Earth and World Water Day celebrations.

Heather:

Where are these initiatives coming from within these institutions? Who is responsible for introducing them?

Tanzeela:

Many institutions have internal accountability measures for sustainability that help them incorporate these sustainable values into their practices. For example, there are these global frameworks that help guide them to do so. One of them is the United Nations Sustainable Development Goals, or SDGs. Another one is the Sustainability Tracking, Assessment and Rating Systems, or STARS, and the Telluris Declaration. These are just some of the ones that I've mentioned, but these global frameworks guide and assess the sustainability efforts of these institutions to reach their own goals.

Heather:

You heard about lots of work being done to introduce sustainability into curricula, into the student experience and into broader institutional strategies. Did the people you speak with tell you about challenges in doing this work? If so, what did you hear about these challenges?

Tanzeela:

Yes, so despite the dedication of wanting to add green skills by both leaders and educators, they do face some key challenges. One major issue we heard about is insufficient resources. Funding is limited and that makes it hard to get quality teaching materials and hire experts. Then there's the issue of institutional inertia. Slow and complex approval processes makes it very difficult to update curriculum and requires strong leadership to drive this change. Then there's also the issue of a lack of incentives. Instructors struggle to add green skills without them, and then students aren't recognized for their sustainability efforts outside of the classroom. These hurdles are significant and overcoming them is crucial for advancing sustainability education.

Heather:

Tanzeela, from your perspective and your experience with this work, what do you think could help address these challenges?

Tanzeela:

What we heard from our qualitative research and the 41 interviews we've conducted are some key recommendations. Firstly, industry collaboration is crucial. Employers should offer work-integrated learning to help students gain practical green skills and prepare for sustainable careers and jobs. Secondly, setting up sustainability offices or having experts in teaching centers can also support instructors and students with workshops, guidelines, and resources. We also do need a dedicated funding pool for labs, learning materials, and green skill projects.

They can also help for stipends for faculty who want to improve their green skills teaching. Then finally, we should be integrating green skills into all courses and programs, not just those focused on sustainability and encourage co-curricular programs that recognize student efforts, so reimaging teaching approaches. These steps will help institutions meet the growing demand for green skills and contribute to a sustainable future and economy.

Heather:

Thank you so much, Tanzeela. It's been a pleasure to have this chat with you today.

Tanzeela:

Thank you, Heather.

Heather:

Thank you to all our guests on this episode, Kevin, Charles, and Tanzeela. This was such an important conversation about the intersection of Canadian higher education and sustainability. Schools are supporting sustainability through their curricula and through the broader educational experience for students. By prioritizing these efforts and collaborating with employers, they're paving the way for a cleaner, brighter future. Thanks for listening to this episode of the *Future Skills Centre Podcast*. If you enjoyed this episode, please subscribe and recommend to others to take a listen. I'm your host, Heather McIntosh. Until next time.

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