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Promoting Climate Literacy in the Skilled Construction Trades: An Innovative Project of the Canadian Building Trades' Union

John Calvert, Linda Clarke, Lee Loftus

York University

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Presentation Overview: Advancing Climate Literacy in Building Trades' Training

- Object of the project: promoting climate literacy in the trades' training system
- How the project was established
- The project team:
  - Canadian Buildings Trade Union (CBTU)
  - Climate and Industry Research Team (CIRT)
  - SkillPlan
  - Social Research and Demonstration Corporation (SRDC)
  - CBTU Advisory Committee
- Research findings: English Canada, Quebec, US and Europe
- Curriculum development process
- Next steps in the project: rolling out the climate curriculum

Acknowledgement: Funding for the project has been provided by the Federal Government's Union Training and Innovation Program (UTIP)

Objective of the Project: Climate Literacy

- Define climate literacy and investigate how it can be incorporated into the curriculum for apprentices and upgrade modules for working trades in construction
- Identify best practices and innovative climate training in Canada, US and Europe
- Promote awareness of the potential of the building industry to address climate change and meet Canada's ambitious climate targets in the building sector
- Ensure that the current and future construction workforce has the capacity to deliver net zero carbon/low energy building practices.
- Promote climate literacy, environmental understanding and green energy awareness in apprenticeship programs and in on-the-job training
- Implement this through development of climate focused curriculum for classroom, virtual learning and on-the-job upgrading programs
- Test the new curriculum in trades training facilities and in Canadian workplaces

Background: Climate Change is Largely Missing in Curriculum of Current Trades' Training Programs

- The national Red Seal Standards determine the skills apprentices must master to qualify as certified skilled trades' workers
- Climate change is not covered in the current Red Seal curriculum
- Because the Red Seal exams do not include climate issues, instructors are limited in what they can cover in their training programs
- The Red Seal Standards also shape the content of provincial trades' training programs, limiting what they can include on climate issues
- Climate is having an increasing impact on construction work and workers
- The climate literacy project is intended to address this gap

Establishment of the Project

- The Canadian Building Trades Union (CBTU) represents 600,000 skilled workers in the construction industry
- CBTU recognized there was a need to assess the role of the construction sector and its trades' membership in addressing climate change
- It partnered with an academic team, a curriculum development organization and a not-for-profit firm specializing in project evaluation to develop a proposal
- It successfully applied to the Federal Government's Union Training & Innovation Program (UTIP) for funding to explore climate literacy in trades' training
- It set up a project advisory committee from its member unions to oversee the project and facilitate access to union trades' training programs across Canada
- The 5-year Building it Green project began in the spring of 2021

The Building It Green Project Team

Canadian Building Trades' Unions (CBTU)

- Represents 14 building trades unions in the construction sector
- Responsible for managing the overall project and meeting contract obligations
- Established an advisory committee from its member trades to oversee project development

Climate and Industry Research Team (CIRT)

- Academic team responsible for researching a literature review and environmental scan
- Provides evidence on climate/environmental issues for needs assessment & curriculum development

SkillPlan

- A joint union-management national training/curriculum development organization
- Responsible for developing curriculum and setting up training pilots for instructors/apprentices

Social Research and Demonstration Corporation

- A national not-for-profit corporation specializing in project evaluation
- Responsible for assessing the impact of the new curriculum and fine tuning it

Project Research: Interviewing Trades' Trainers

- The interview process sought to identify best practices and obtain detailed information on climate focused material in the trades' training curriculum
- Interviews were carried out in English Canada, Quebec, US and Europe
- In English Canada, it spoke with trainers from each of the 14 trades to assess the extent to which climate issues were being taught in their facilities
- It also set up apprentice focus groups and interviews with contractors
- In Quebec, researchers approached the Construction Commission to identify key union trainers and completed a dozen interviews
- In the EU, it sought to identify different approaches and good practice examples for embedding climate issues in vocational education and training programs
- EU researchers conducted 17 interviews, 2 group discussions and many training school visits in England, Wales, Scotland, Ireland, Sweden, Denmark and Belgium
- US interviews included union trainers in 15 different facilities

Findings Overview: Canada

- Government climate policy is the driving force for industry change
- This is reflected in tougher building codes and related regulations
- Apprentices are learning technical skills required to implement net zero construction
- But curriculum tends to neglect the principles of building science
- Insufficient emphasis on inter-trade collaboration and shared responsibility
- Inadequate attention to viewing buildings as integrated systems
- Net zero construction requires a higher level of understanding, knowledge, competency and skills to be executed effectively
- Red Seal is a constraint on including climate issues in the curriculum
- Some unions have added good climate modules to their training programs
- But this curriculum is not widely shared within unions or the industry

Findings Overview: Europe

- European Union (EU) has established a policy and legislative framework including aggressive targets for net zero construction
- EU Energy Performance of Buildings Directive, Energy Efficiency Directive, and Green Deal have strongly promoted net zero objectives
- European Qualifications Framework for curricula/qualifications consists of a) knowledge, b) skills/know-how and c) competences/attitudes
- Training is not limited to technical skills but rather incorporates attitudes, values and commitment to quality work (Best example: Belgium)
- Generally, the state plays a larger role in Europe than in Canada, while social partnership (unions and employers) is also important in many countries
- Climate change issues rarely incorporated into curricula (exception = Germany), though energy efficiency measures related to particular occupations are generally found

Findings Overview: Europe

- Vocational education and training (VET) programs differ significantly among EU countries and from Canada
- They are usually divided into three segments: school/college, workshop and site
- Example: Sweden - first 3 years, are school/college based with workshop, followed by on the job of a 1 to 2-year apprenticeship
- Zero energy/carbon elements either mainstreamed into construction occupational profiles/curricula (e.g. Belgium) or bolt-on modules
- Ireland provides a good example of detailed net zero modules/curricula
- UK has combination of full-time training in colleges and then apprenticeship, but VET system fragmented, employer-based and excluding unions
- Some UK local governments have pioneered excellent direct labour programs with effective apprenticeship training, including net zero, in which construction workers are direct employees

Findings Overview: US

- The role of union training centres in the US is similar to English Canada
- But less government support for apprenticeship and journey worker training
- This partly reflects the much lower US union density in construction
- However, there are pockets of innovative climate training by unions in some states such as New York, California, Oregon etc.
- Some unions nationally have also developed good climate curricula
- US Plumbers and Pipefitters (UA) have adopted the US Green Building Council's GPRO program and use it in their training facilities in much of the country
- But while unions have developed good climate curriculum, it tends to be an option, not part of the core apprenticeship curriculum & often not offered at all
- Climate change is still controversial in many parts of the US impeding progress

Findings Overview: Quebec

- Quebec construction labour relations is different from the rest of Canada
- Everyone is unionized, but there are 5 different unions/federations
- There is some limited competition among unions for members and for the right to represent workers in collective bargaining
- The Construction Commission plays a dominant role in overseeing the curriculum and unions do not have a major role
- Employers have a disproportionate influence on the Commission
- The Commission has not been pursuing climate issues very extensively
- Unions affiliated with the US building trades use some international training material which has more climate related content than Quebec's curriculum

Need to Update Education and Training

- To accommodate the increasingly tough code requirements now in the policy pipeline, apprenticeship and trades upgrade programs will have to reflect the impact of public policies on the industry
- This will mean incorporating more climate content into vocational education and training programs to provide workers with the knowledge, capacity and competences to implement low carbon construction practice safely and effectively.
- A clear and strong message from the interviews with trainers is that trade unions across the jurisdictions covered by this research are reporting increasing interest in climate issues from their members, especially the young
- There is wide acceptance among unions that the future workforce must be more reflective of Canada's diverse population

Emphasizing Cognitive and Attitudinal Attributes

- Current training is narrowly focused on technical skills
- But apprentices also require an understanding of how climate change is impacting each area of the building industry and the work they perform
- Net zero construction requires precise, careful implementing of specifications
- Trades need to be able to work together with other trades as well as others on building sites.
- The interrelatedness of everyone engaged with a low carbon construction project means that tradespersons need to be able to communicate their perspective, knowledge and experience effectively
- They need to participate more extensively in every stage of the construction process and exercise responsible agency for building outcomes.

Public Policy is Driving Progress in Canada

- Industry is lagging behind in terms of promoting climate literacy
- The market is not providing the appropriate signals
- Companies will only do climate focused work if they are paid to do it
- Commissioning is key – what building owners demand shapes what gets built and also what workers are asked - or allowed - to do
- So the driving force for change is public policy
- This is most clearly reflected in the building and energy codes which are getting tougher and tougher as targets become more ambitious
- But change will come: it is essential that the workforce is prepared for it
- Hence the need to provide climate literacy in the training system so the workforce will be capable of meeting the increasing demands of net zero

Recommendations From Research and Interviews

- Understand how climate change is impacting nature and society globally
- Identify how climate change is affecting the construction industry and how the industry is affecting climate change
- Be aware of what other trades do and how each trade fits with the others
- Exercise a commitment to teamwork on site
- Recognize that the shift to a low-carbon economy does not just entail technological change but is grounded in a shift to a more inclusive society
- Have a deeper knowledge of the principles of building science
- Demonstrate the ability to communicate and collaborate effectively with other construction occupations/personnel, clients and end users
- Develop an understanding of buildings as a system

Recommendations From Research and Interviews

- There is a need for a holistic understanding of building production as a social as well as a technical process
- Need to understand the broader impact of building and construction on users and communities
- Recognize that all work on a construction site affects carbon emissions
- Understand that a systems approach is essential to organizing net zero construction work effectively
- Learn how sustainable construction can improve population health and address inequality
- See the union, its members, and workers in general as critical actors in shaping the future

Training and Education Key Elements of Industry Transformation

- Creating a more climate literate workforce cannot be done by the education and training system alone
- But it can play a key role in ensuring that workers are fully prepared for their role in the future low carbon construction system.
- Readiness to change, to incorporate new practices, and to embrace new sets of social relations, including teamwork, thus become major imperatives, including in curriculum of vocational education and training programs
- The building and construction sector is absolutely critical to achieving Canada's policies to mitigate and adapt to climate change.

Next Stage of Project: Curriculum Development

- Based on the literature review and environmental scan the research is now being used to shape curriculum development
- SkillPlan and SRDC are incorporating the findings into the climate components of a future curriculum
- Focus is not to provide new technical skills – these are already being taught
- Rather, it is on understanding how climate change is affecting our society
- How it is impacting the building industry & work of construction workers
- How construction can play a major role in addressing climate change
- And how high-performance building practices can also contribute to better health for building workers, for those who live and work in buildings and for communities affected by construction

Piloting, Implementing and Revising the Curriculum

- Once the draft curriculum is finalized it will be implemented in selected trades training centres across Canada
- This will include material for apprentices and for trainers to deliver it
- It will also include upgrade modules for journey workers
- After the pilot delivery, the impact will be evaluated and revisions made to address weakness that are identified
- Then the amended curriculum will be rolled out to 80 trades trainers and 1500 apprentices in the next phase of the project
- The hope is that the outcome of this project will play a role in shaping future revisions to the Red Seal standards

Final Comments

- The project is unique because it links climate research with making concrete changes in the curriculum used in the apprenticeship system
- The research draws on the experience of trainers in three major jurisdictions: Canada, the US and the EU
- It includes developing pilots for testing the curriculum
- It includes evaluating the effectiveness of the draft curriculum and modifying it based on the evaluations
- It includes a commitment to implementing the curriculum more broadly in the training centres operated by the building trades
- It makes use of research to facilitate knowledge translation