Necessary Skills Now
NETWORK

NSN Network Community of Practice Webinar:
Engaging Technician Faculty in Teaching Employability Skills

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Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

An ATE Coordination Network dedicated to:

Facilitating collaboration between educators and employers to improve the employability skills of entry-level technicians in STEM fields

Engaging Technician Faculty in Teaching Employability Skills

Webinar

December 10, 2019

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Introductions

Louise Yarnall, Ph.D
Principal Investigator
louise.yarnall@sri.com

Julie Remold, Ph.D
Co-Principal Investigator
julie.remold@sri.com

Ann Beheler, Ph.D.
Senior Advisor
abeheler@gmail.com

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Agenda

01

Introduction & Agenda
5 minutes

02

The why and what of employability skills 20 minutes

03

How people learn employability skills
10 minutes

04

How to teach and learn these skills
15 minutes

05

Q&A and web resources
10 minutes

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Project context

- Funded by National Science Foundation's Advanced Technological Education (ATE) program, which supports technician education, particularly in community colleges

- This project was led by SRI Education, which is a division of SRI International, a nonprofit research institute based in Menlo Park, CA. SRI does work mostly funded by government grants and contracts. We partnered with Ann Beheler of Collin County College in Texas.

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Optimizing outcomes | Reducing barriers

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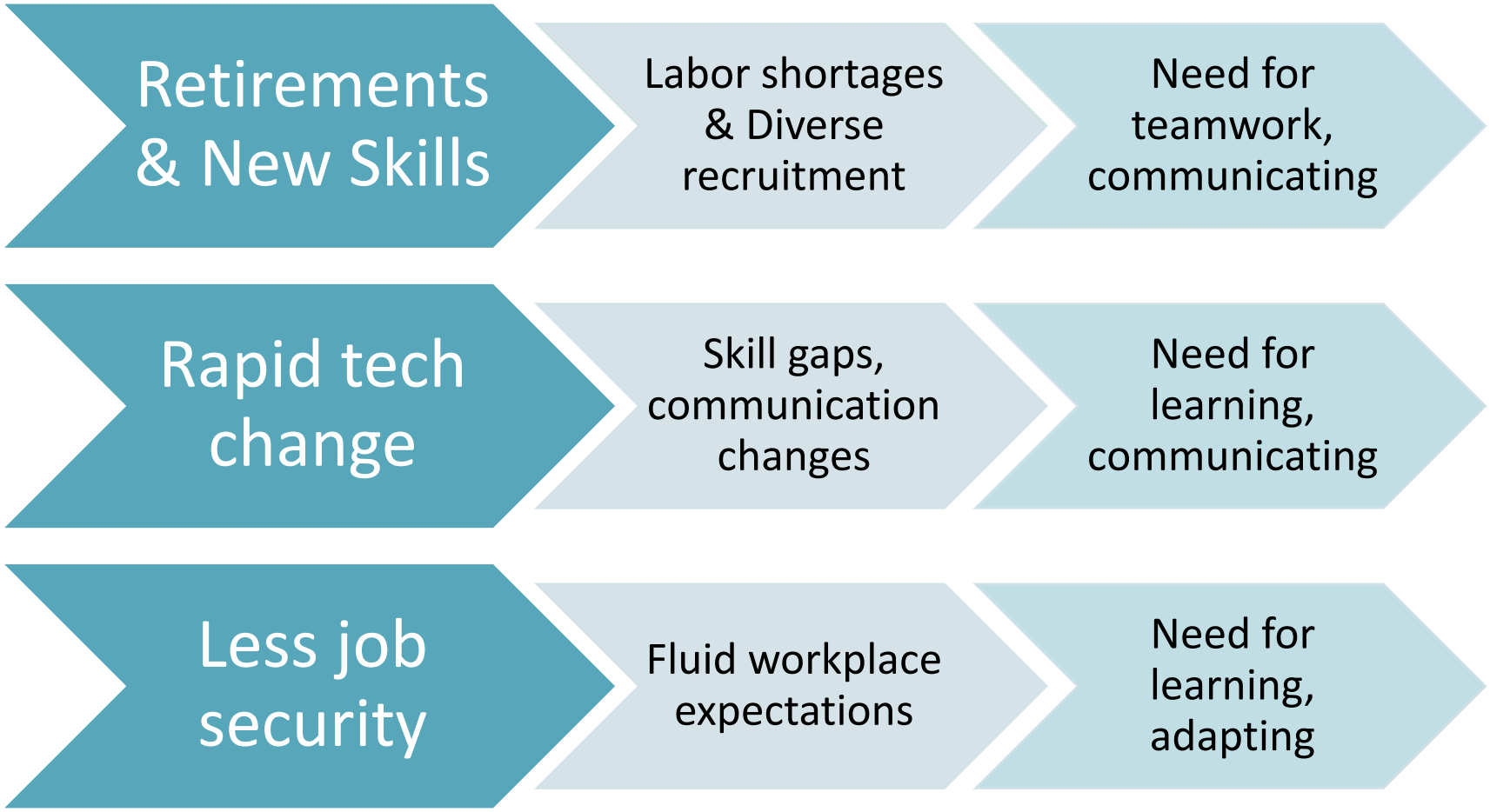
What's driving the increasing importance of these skills?



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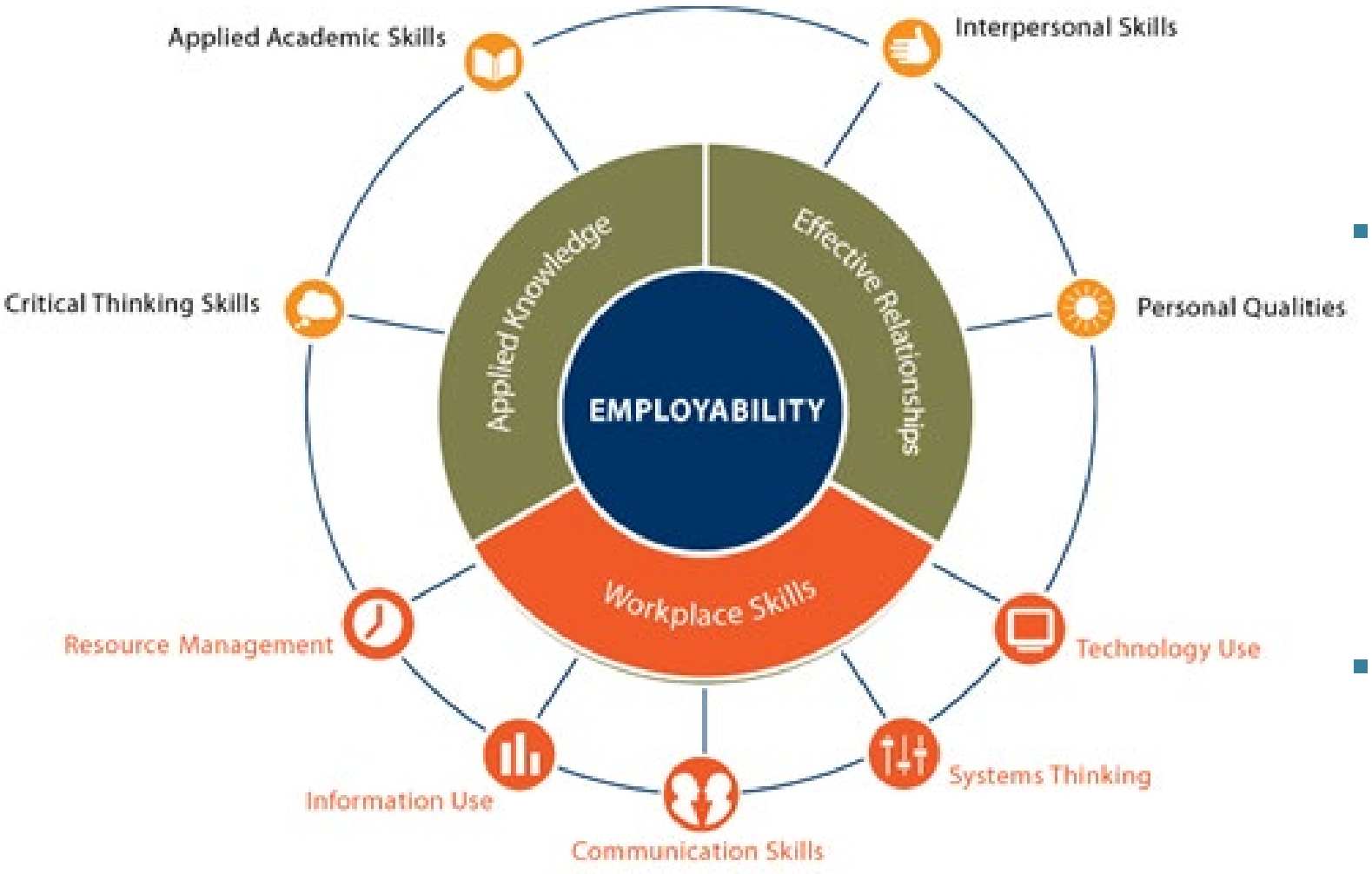
What are employability skills?



- U.S. Department of Education
  - Applied Knowledge
  - Effective Relationships
  - Workplace Skills
- Also, for secondary college and career readiness, one common citation is: National Research Council, 2012
  - Emphasizes cognitive, interpersonal, intrapersonal
- Our report may be found here:
  - employabilityskills.org

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Five High-Priority Employability Skills for STEM Technicians

Essentials

Capacity to build **relationships**	**Personal qualities** for career success	**Business fundamentals** and knowing your business value
1. Interpersonal skills 2. Communication skills	3. Orientation to lifelong learning 4. Meeting workplace expectations	5. Situational awareness

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What technician educators and employers say about capacity to build relationships

Capacity to build **relationships**	**Personal qualities** for career success	**Business fundamentals** and knowing your business value
1. Interpersonal skills 2. Communication skills	3. Orientation to lifelong learning 4. Meeting workplace expectations	5. Situational awareness

- *"You have to be able to relate to people"*
- *"If they don't include 'listening' as part of their definition of communication, they don't have a job with me."*
- *"Even buried in the server room, you need people skills and a huge level of empathy—you have to empathize with the users."*
- *"By the time you get the interview, it's about "Am I going to like to work with you?" Technical skills are not the question so much at that point."*

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What technician educators and employers say about personal qualities for career success

Essentials

Capacity to build **relationships**	**Personal qualities** for career success	**Business fundamentals** and knowing your business value
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- *"Everyone will be learning on the job."*
- *"Just because I'm making parts doesn't mean I shouldn't learn how to weld, do drawings, etc. I should want to be well rounded."*
- *"The big foundational skill is not being afraid to make a mistake"*
- *"It's very difficult to motivate a person into a learning cycle if that's not something that someone has an interest in doing."*
- *"Probably the hardest thing to find is a person who is going to show up every day."*

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What technician educators and employers say about business fundamentals

Capacity to build **relationships**	**Personal qualities** for career success	**Business fundamentals** and knowing your business value
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- *"I think the first thing you look for in an employee is they're embracing what we do as a business and understanding their part in that."*
- *"A lot of the curriculum does not have business at its core, and we need more of that. I've been pushing that."*

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Focused essentials for groups underrepresented in STEM fields

Capacity to build **relationships**	**Personal qualities** for career success	**Business fundamentals** and knowing your business value
1. Interpersonal strategies to manage stereotyping/bias 2. Communication strategies to support awareness/sensitivity	3. Orientation to lifelong learning as a way to strengthen technical confidence 4. Understanding cultural differences in workplace expectations	5. Situational awareness of the importance of advancing cultural change in technician fields

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- *"For the most part, physically, anyone can do this work, but there is still a perception that this is a man's job...Women can be just as good...Usually when they come out of the training, they are confident and ready to build a career up in this industry." -- Advanced Manufacturing Employer 17*
- *"What we have found that those employers that 'get it' is what they have started to do is work with the frontline supervisors around implicit bias. It is not the employee's issue, it is the culture of the organization." -- Advanced Manufacturing Educator 7*

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Focused Essentials Supportive of Historically Underrepresented Technician Learner Population

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How do people learn employability skills?

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Key themes on how employability skills develop

Learners:

- It takes time and practice
- You may encounter those who think if you're not born with them or raised with them, you cannot do them
- This isn't accurate. You can learn them at any time

Coaches:

- Coaching can and should happen at any time
- Coaching around these skills can be intimidating; it's important to support educators and managers who do the coaching
- More should be done to foster a "partnered" approach between education and industry

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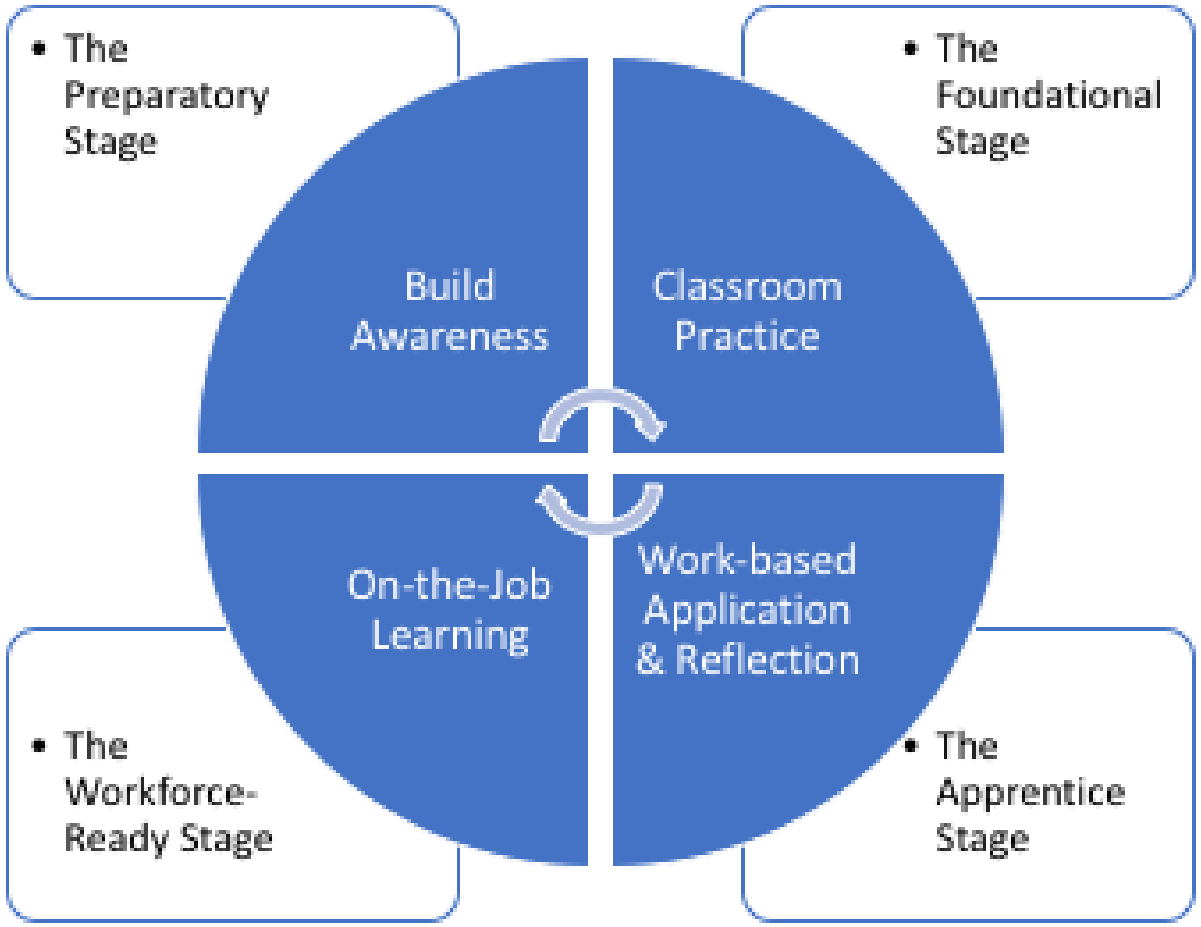
A Better Way: Collaborate and Coordinate Employability Skills Development



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How to teach and learn these skills?

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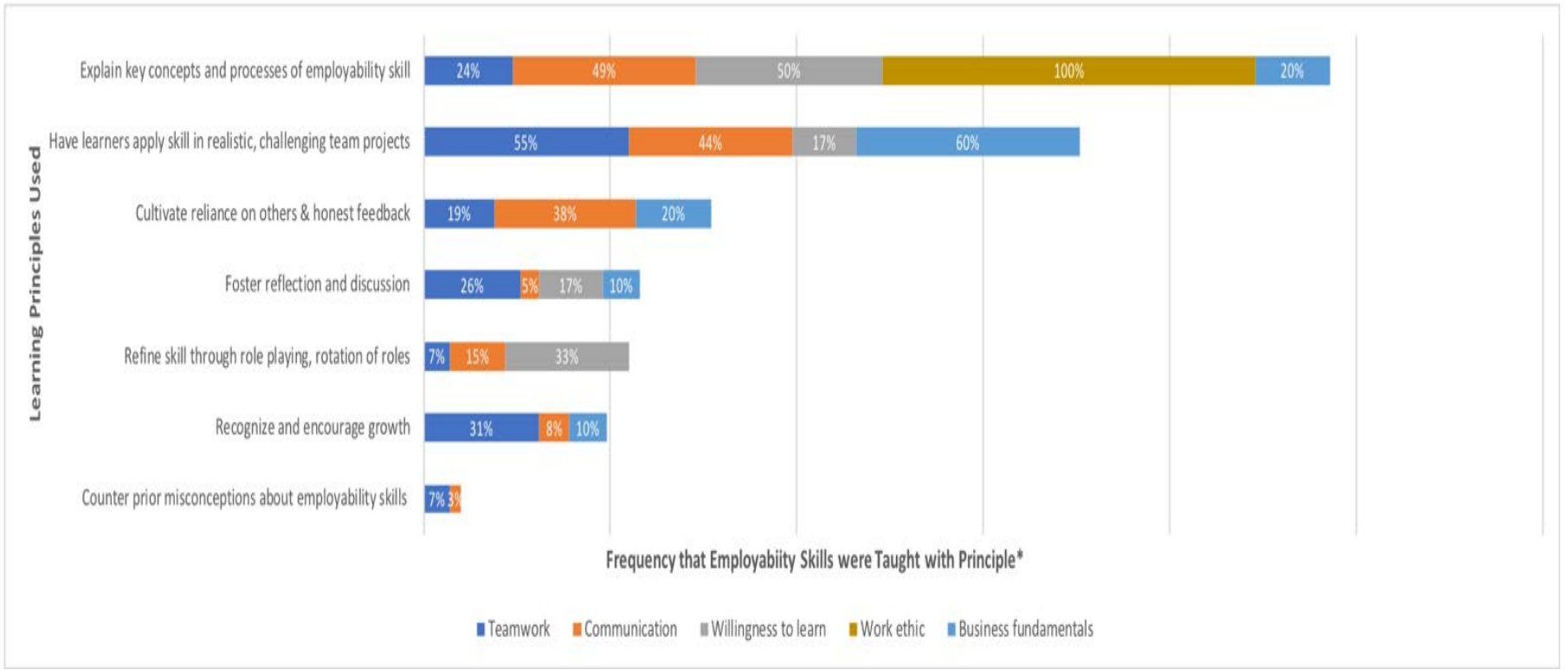
Findings re: 4-year students



On left: Core learning principles for developing employability skills

On right: Frequency of usage of principles to develop each of five high-priority employability skills for technicians

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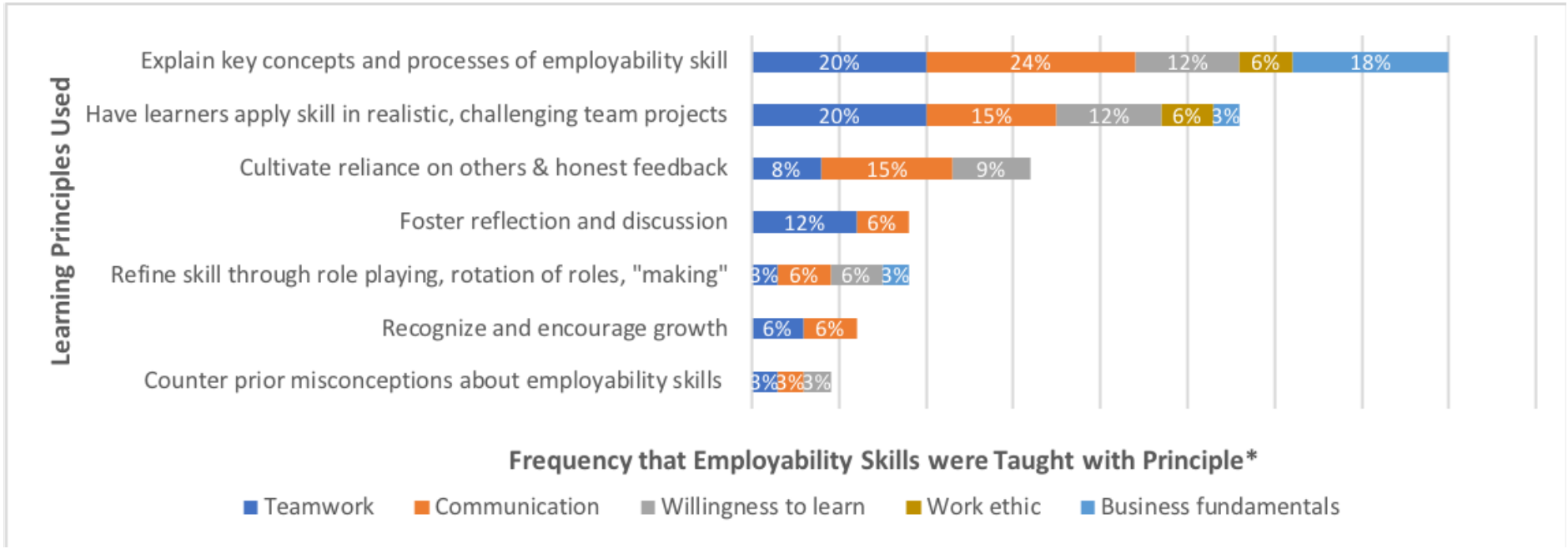
Findings re: 2-year students, workers



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Core learning principles

Learning principle	Description
Explain	Explain key concepts and processes
Practice	Have learners apply skills in realistic, challenging team projects
Support	Cultivate reliance on others and respectful feedback
Reflect	Foster reflection and discussion
Play	Refine skills through role-playing, rotation of roles
Grow	Recognize and encourage growth
Confront misconceptions	Confront prior misconceptions about employability skills

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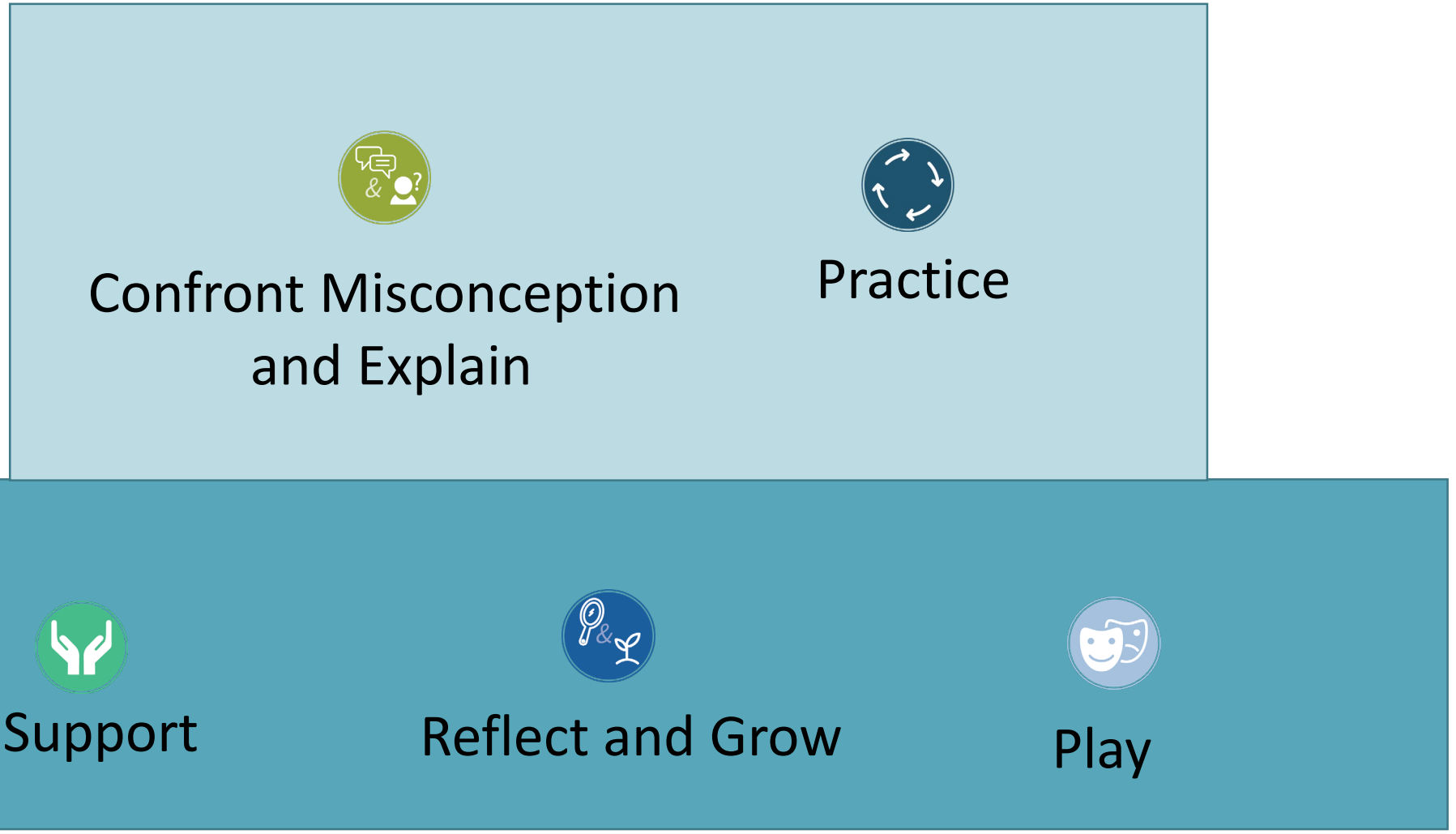
Revised and final set of learning principles



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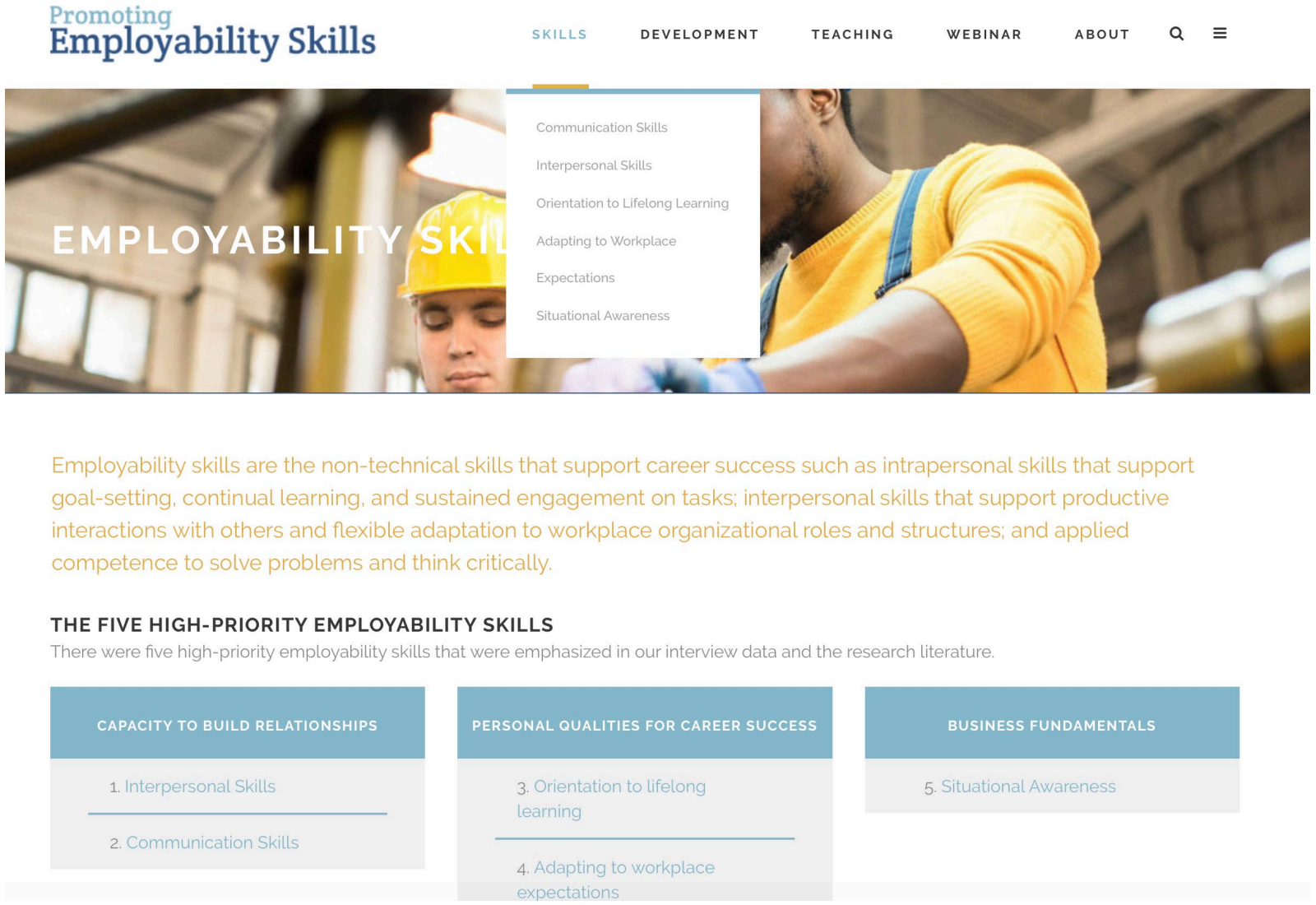
Our website offers examples

- You can browse by the five skills



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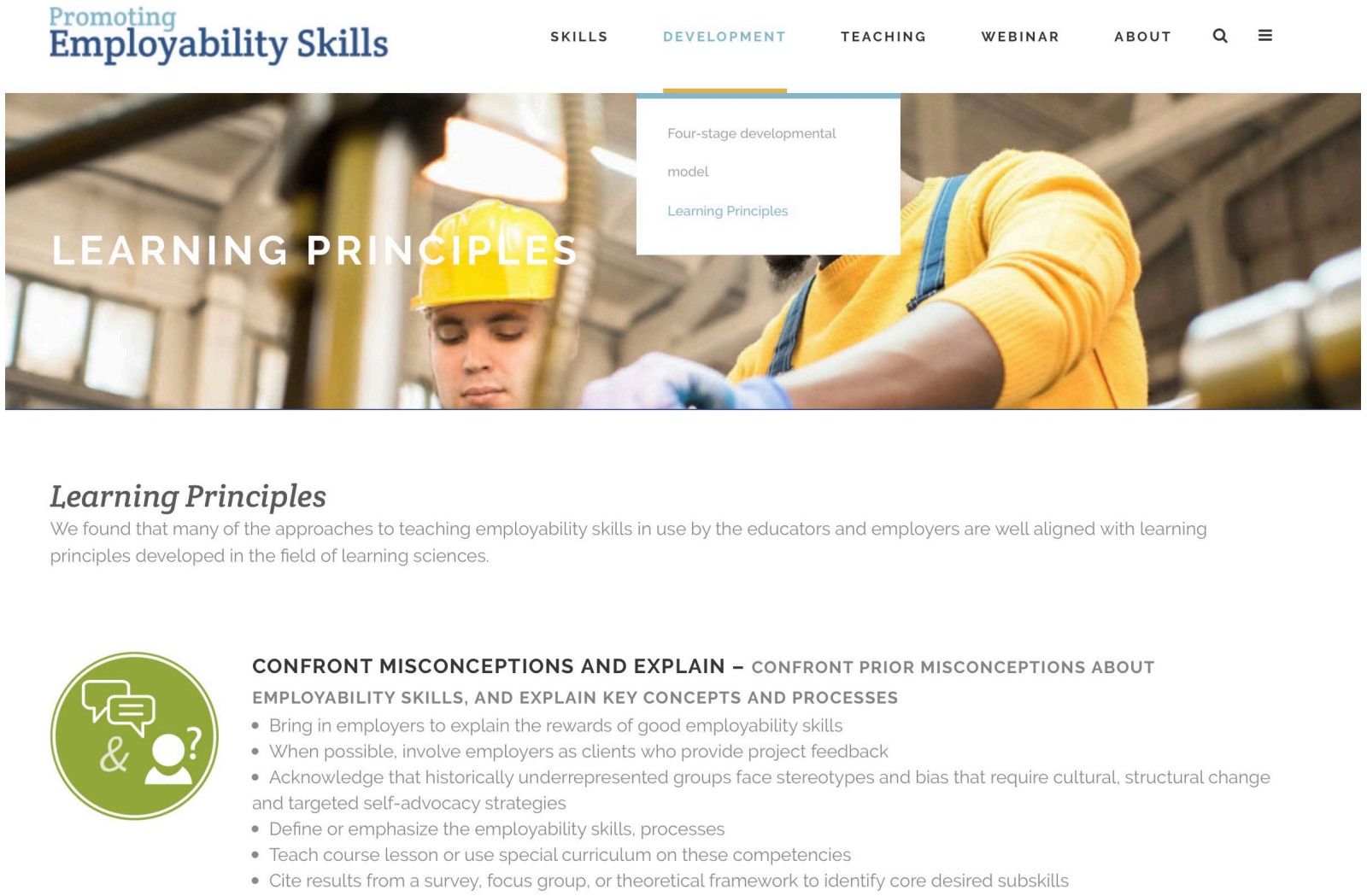
Our website offers examples

- You may search by:
- Developmental stage
- Learning principle



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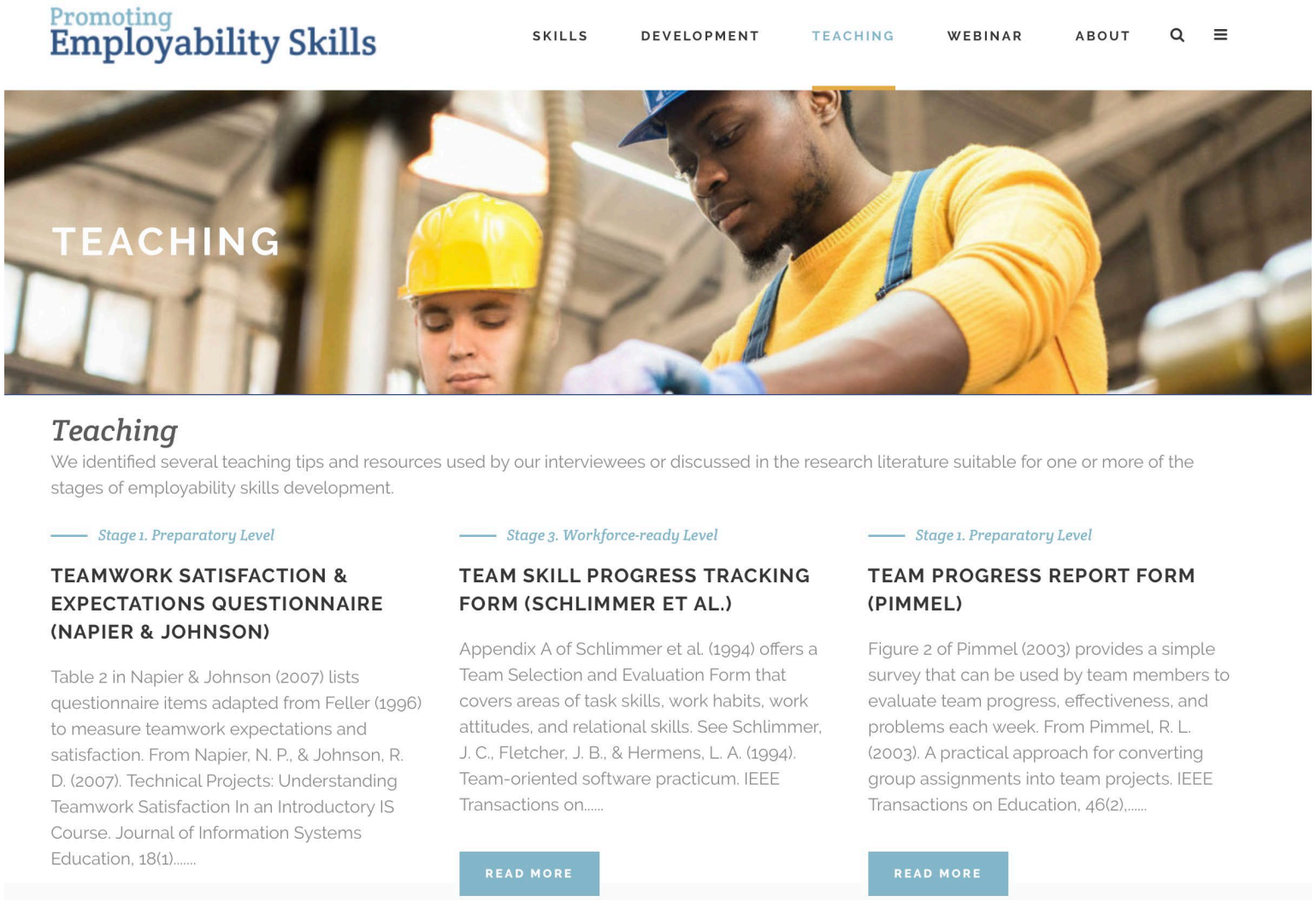
Our website offers examples

- You may browse:
- Teaching tools and approaches



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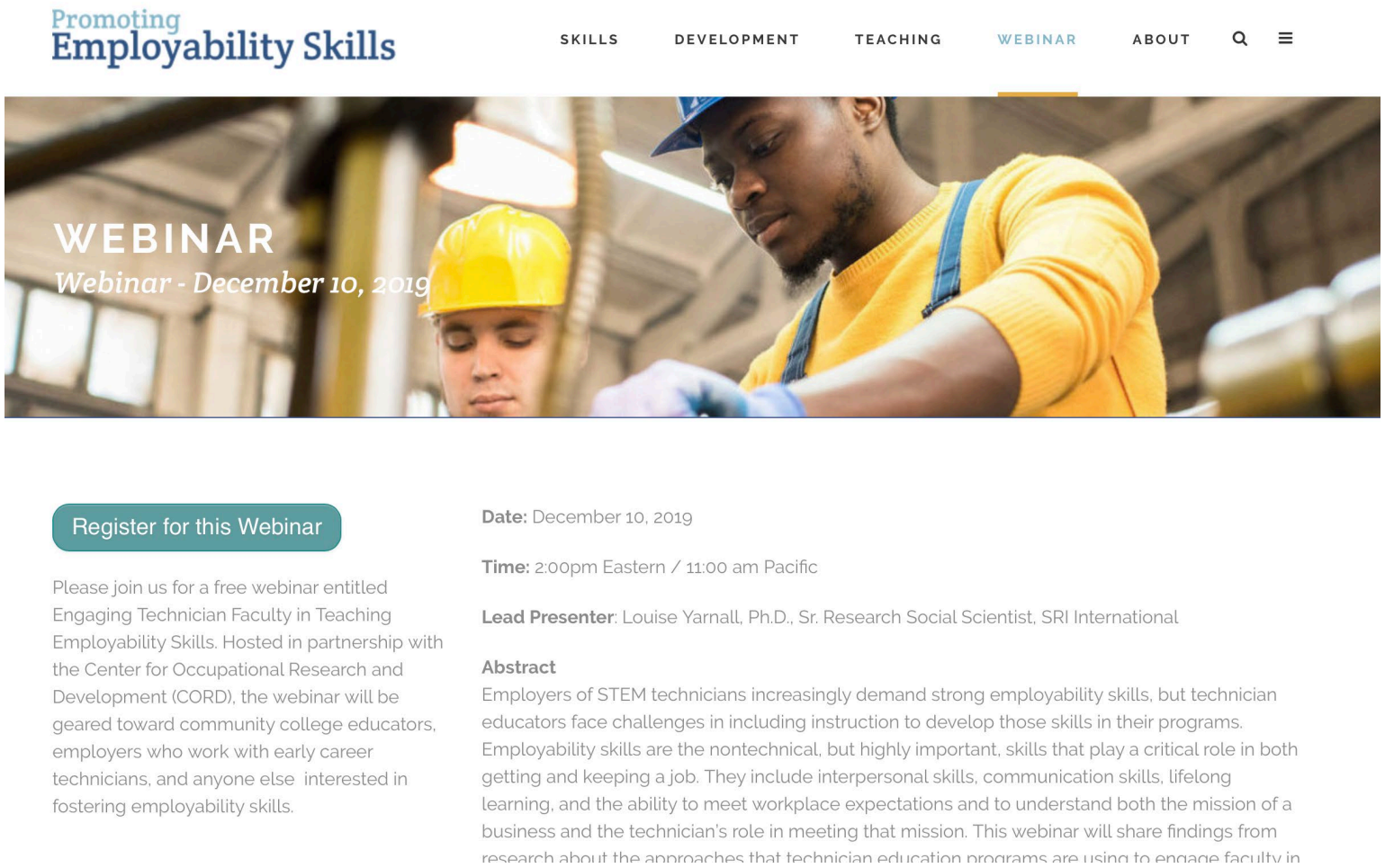
Our website offers examples

- You may seek help and support:
- The webinar recording
- A discussion thread



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Q & A

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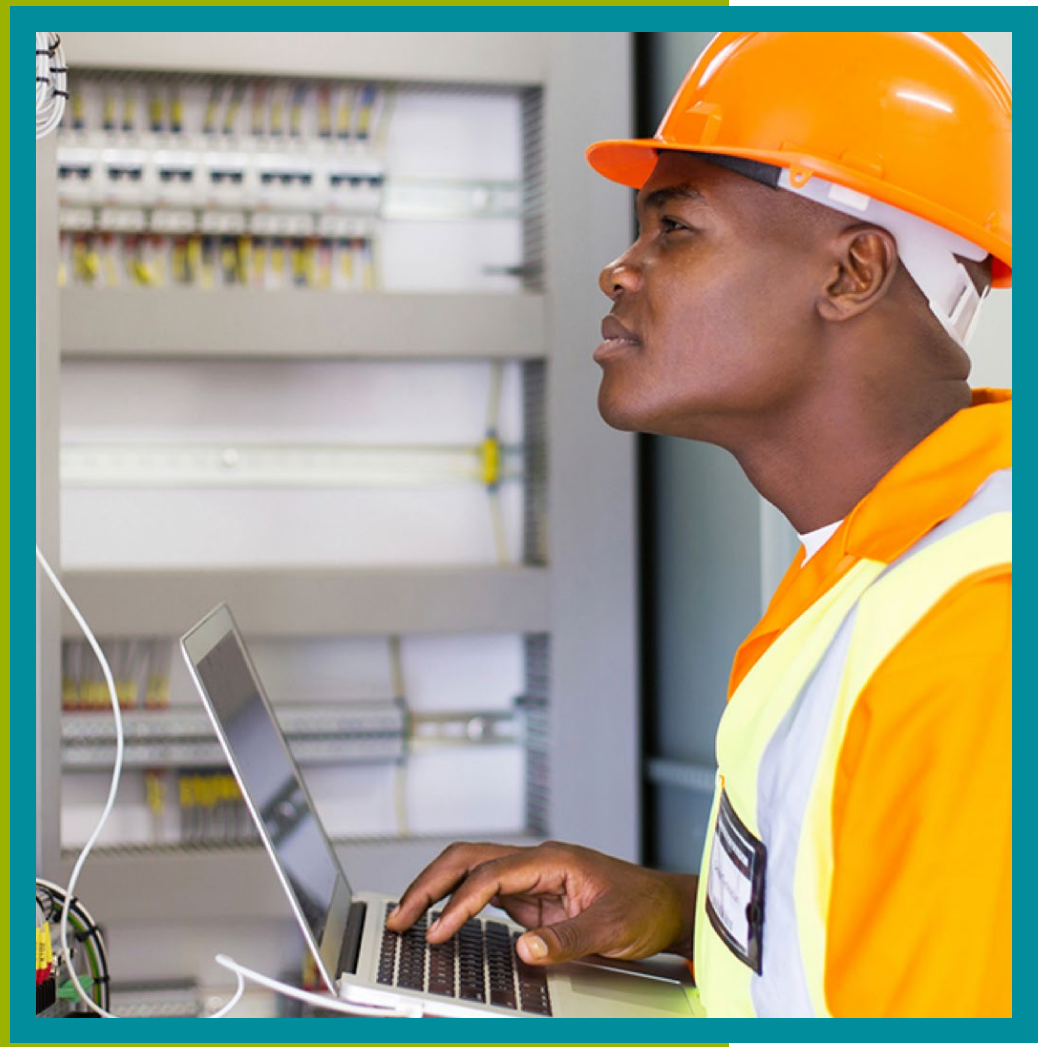

Resources

- **Website:** employabilityskills.org
- louise.yarnall@sri.com
- julie.remold@sri.com
- abeheler@gmail.com

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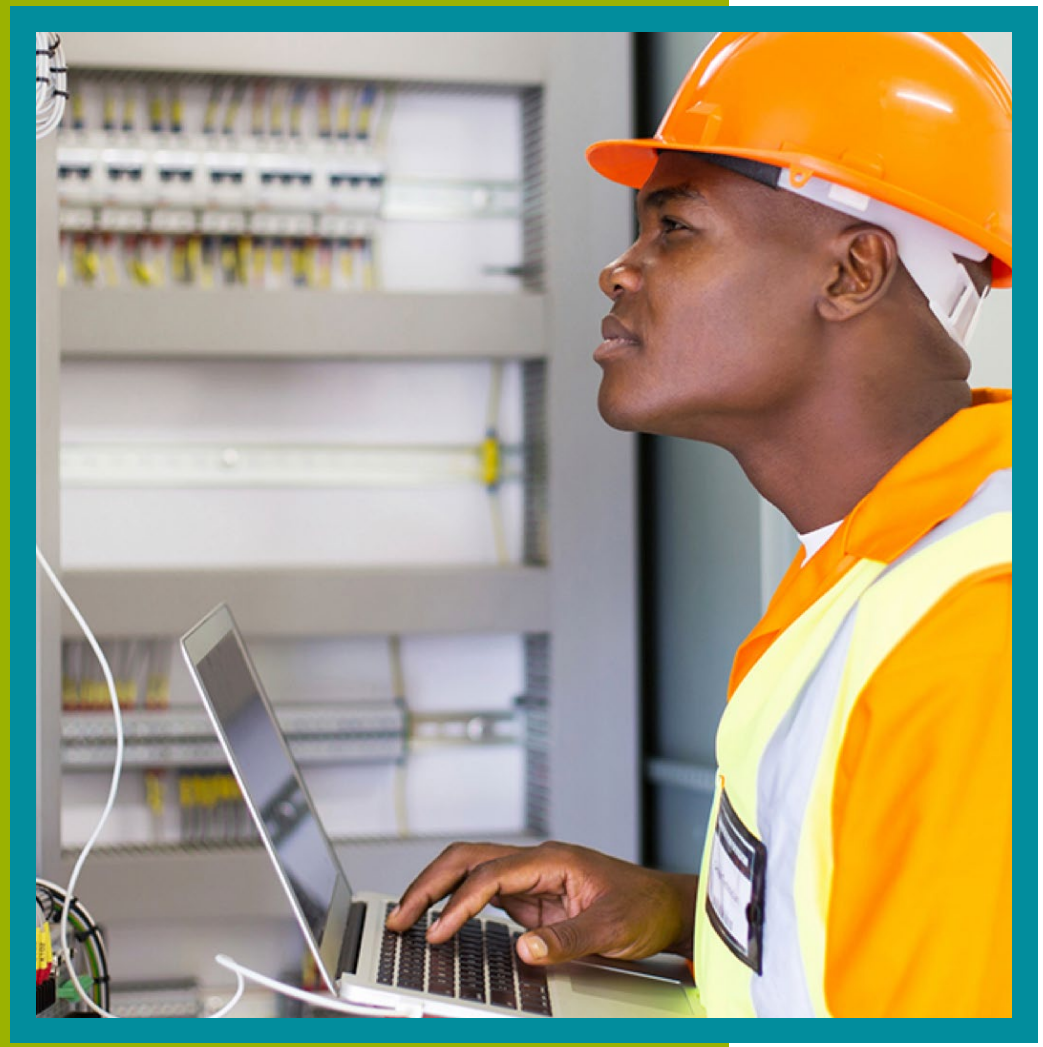

Grant Information

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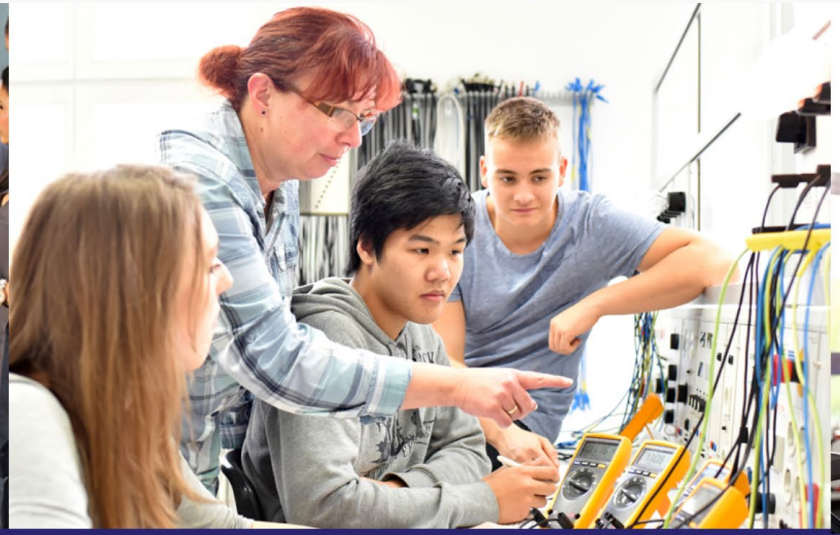
www.NecessarySkillsNow.org

Network Activities

Participate in our community of practice.



Instructional Resources

Explore a wide range of resources and share your own.

Professional Development

Take advantage of NSN's workshops and online courses.