



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*

www.NecessarySkillsNow.org

Engaging Technician Faculty in Teaching Employability Skills

Webinar

December 10, 2019



SRI Education™

Introductions



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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

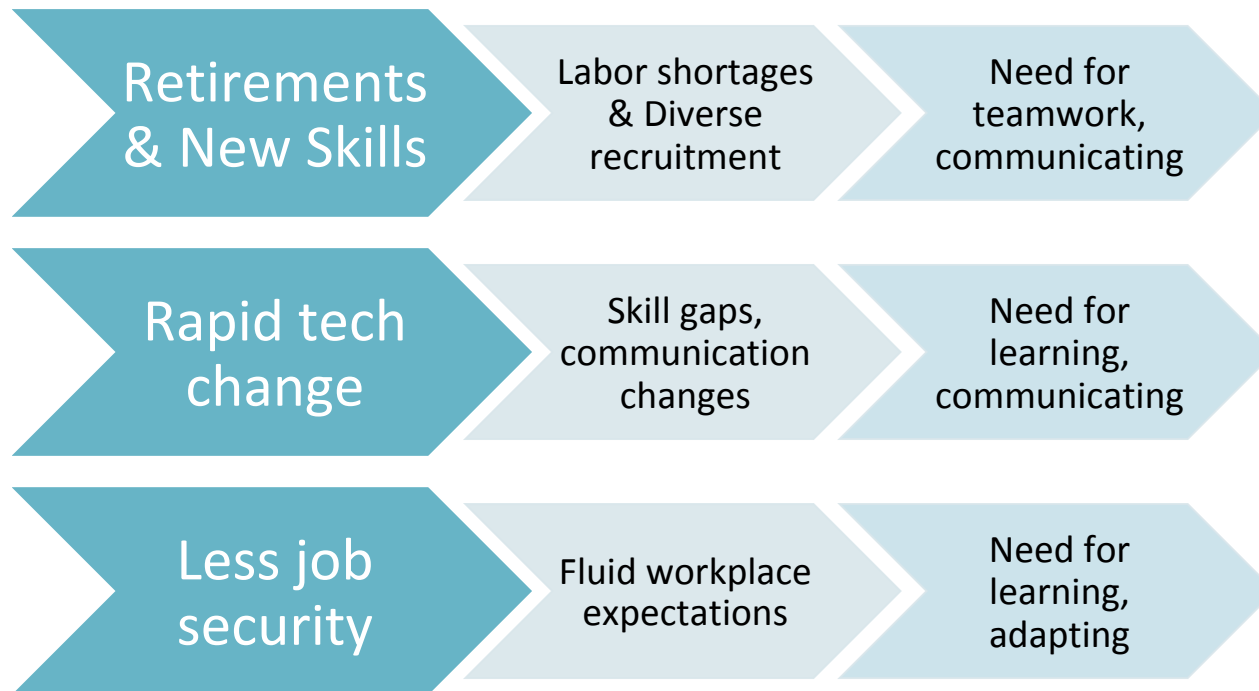
Project context

- 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.

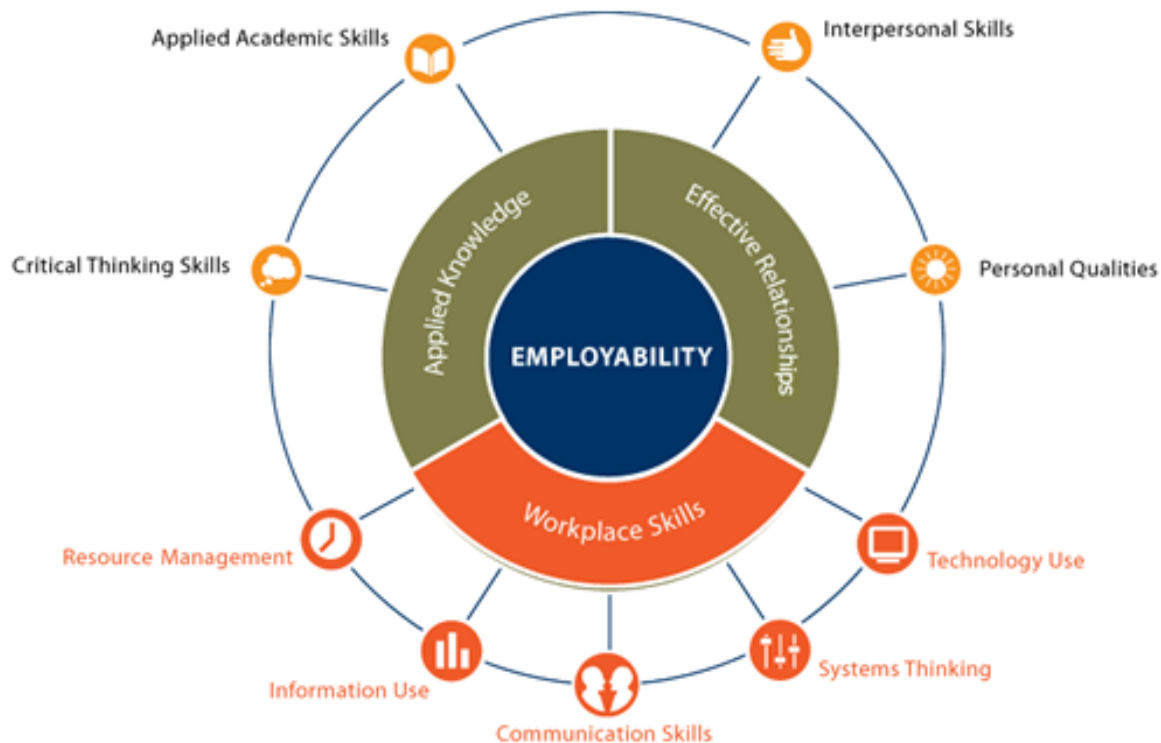


SRI Education[™]
Optimizing outcomes | Reducing barriers

What's driving the increasing importance of these skills?



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

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

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.”*

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.”*

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
<ol style="list-style-type: none">1. Interpersonal strategies to manage stereotyping/bias2. Communication strategies to support awareness/sensitivity	<ol style="list-style-type: none">3. Orientation to lifelong learning as a way to strengthen technical confidence4. Understanding cultural differences in workplace expectations	<ol style="list-style-type: none">5. Situational awareness of the importance of advancing cultural change in technician fields

Focused essentials for groups underrepresented in STEM fields

Capacity to build relationships	Personal qualities for career success	Business fundamentals and knowing your business value
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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

Capacity to build relationships	Personal qualities for career success	Business fundamentals and knowing your business value
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How do people learn employability skills?



Key themes on how employability skills develop

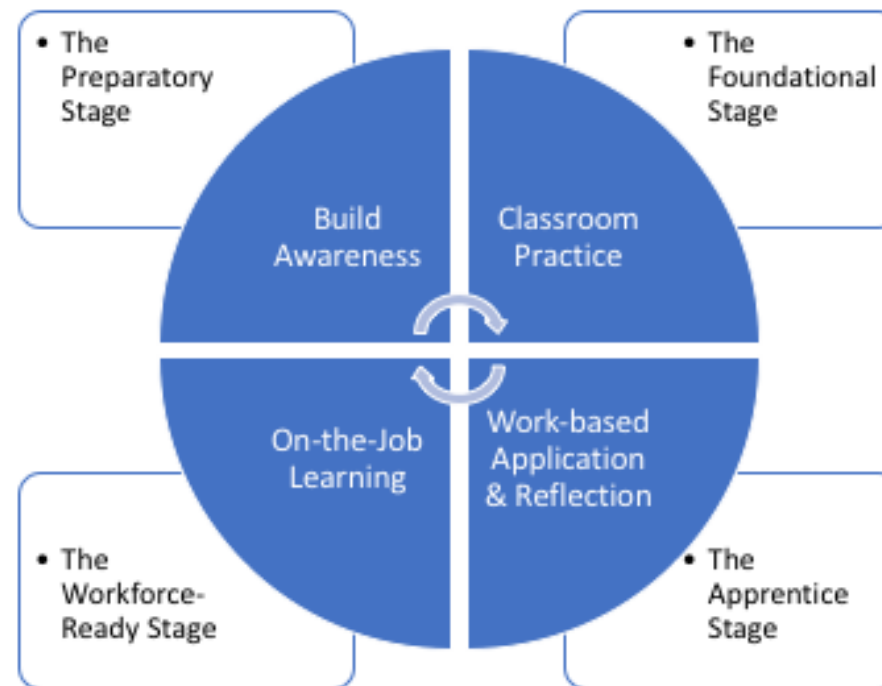
Learners:

- 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

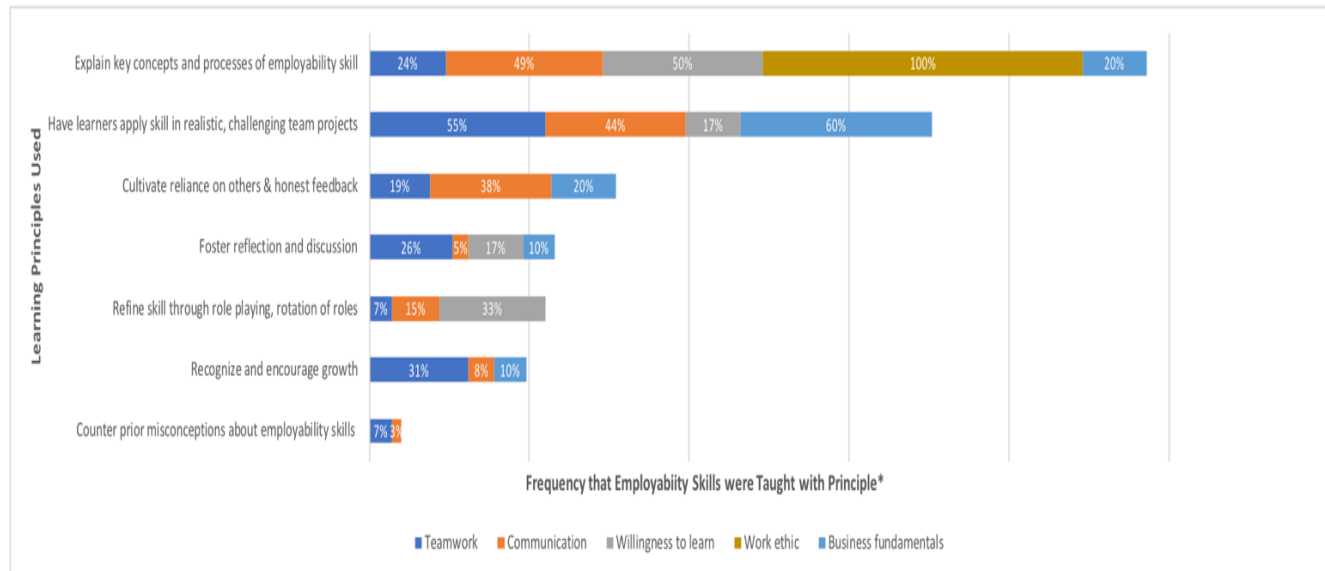
A Better Way: Collaborate and Coordinate Employability Skills Development



How to teach and learn these skills?



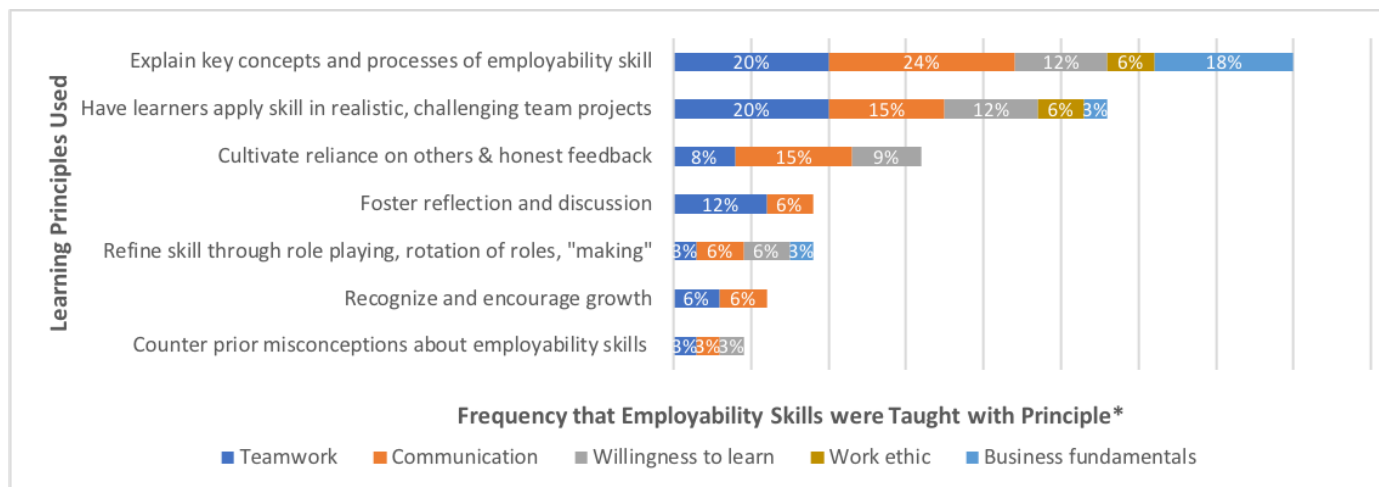
Findings re: 4-year students



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

Findings re: 2-year students, workers



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

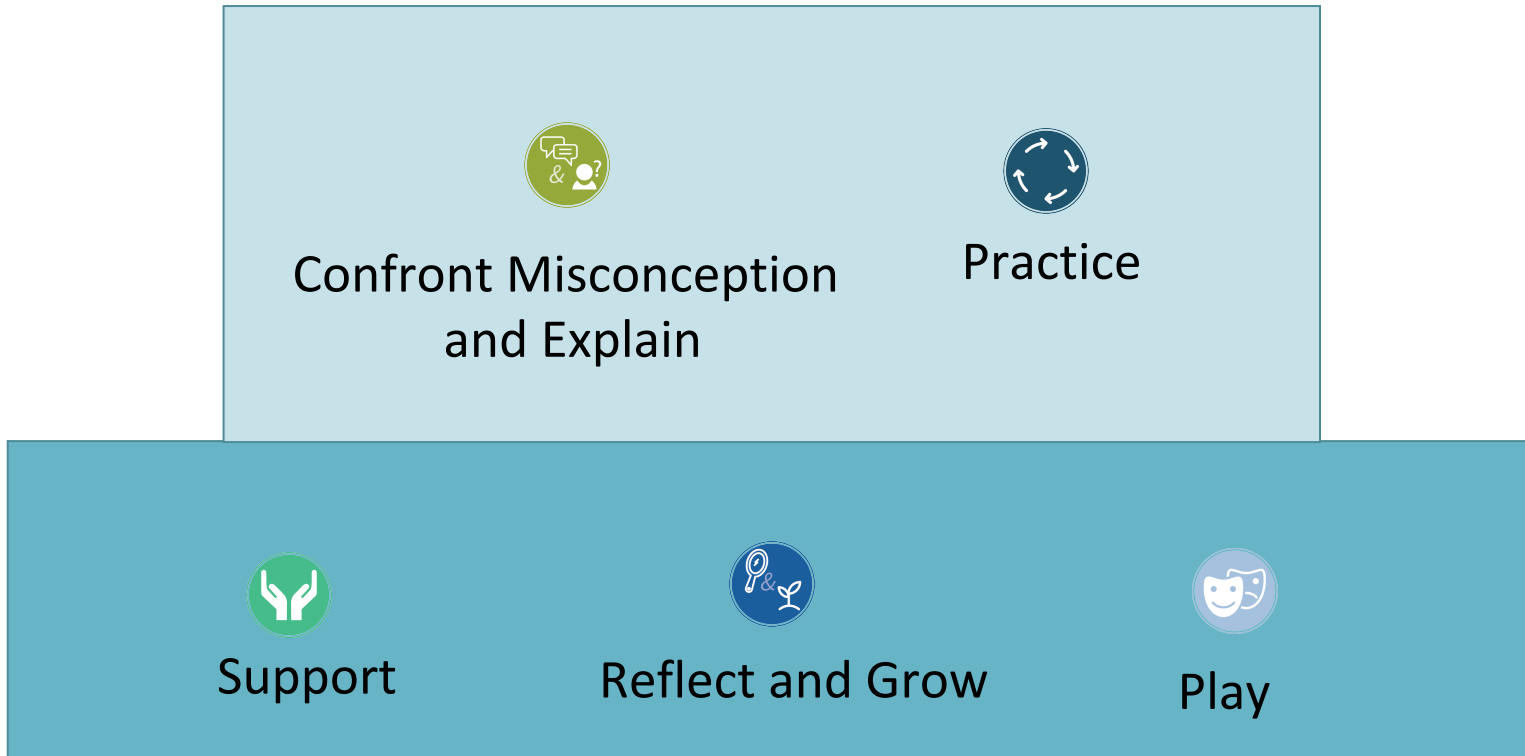
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Core learning principles

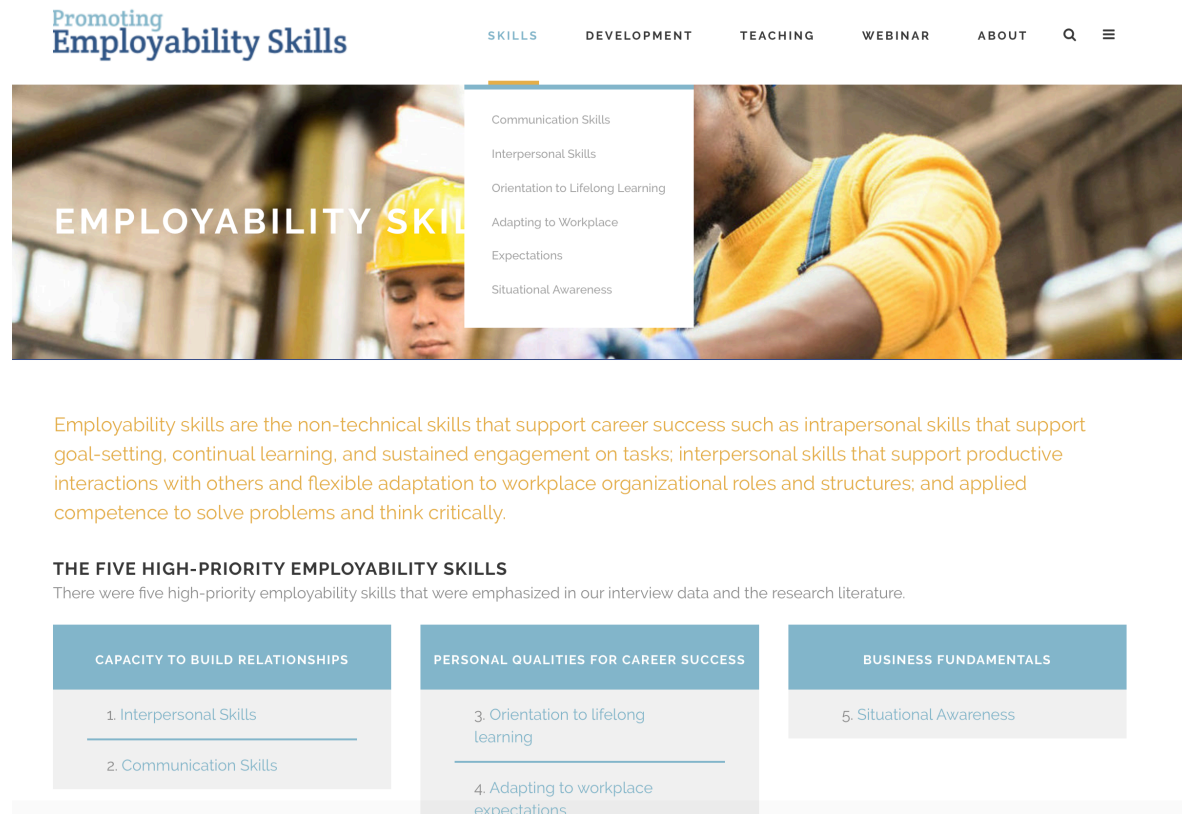
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Revised and final set of learning principles



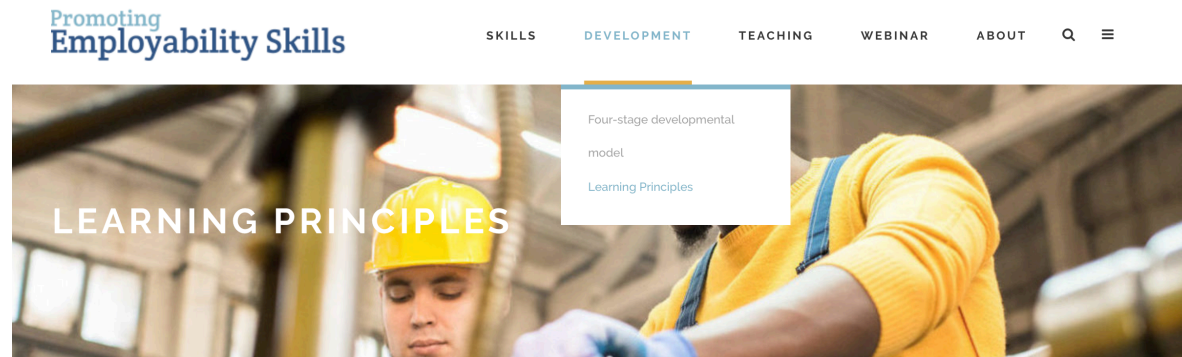
Our website offers examples

- You can browse by the five skills



Our website offers examples

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



CONFRONT MISCONCEPTIONS AND EXPLAIN – CONFRONT PRIOR MISCONCEPTIONS ABOUT EMPLOYABILITY SKILLS, AND EXPLAIN KEY CONCEPTS AND PROCESSES

- Bring in employers to explain the rewards of good employability skills
- When possible, involve employers as clients who provide project feedback
- Acknowledge that historically underrepresented groups face stereotypes and bias that require cultural, structural change and targeted self-advocacy strategies
- Define or emphasize the employability skills, processes
- Teach course lesson or use special curriculum on these competencies
- Cite results from a survey, focus group, or theoretical framework to identify core desired subskills


Our website offers examples

- You may browse:
- Teaching tools and approaches

Promoting
Employability Skills

SKILLSDEVELOPMENTTEACHINGWEBINARABOUTQ≡

TEACHING



Teaching

We identified several teaching tips and resources used by our interviewees or discussed in the research literature suitable for one or more of the stages of employability skills development.

Stage 1. Preparatory Level

TEAMWORK SATISFACTION & EXPECTATIONS QUESTIONNAIRE (NAPIER & JOHNSON)

Table 2 in Napier & Johnson (2007) lists questionnaire items adapted from Feller (1996) to measure teamwork expectations and satisfaction. From Napier, N. P., & Johnson, R. D. (2007). Technical Projects: Understanding Teamwork Satisfaction In an Introductory IS Course. Journal of Information Systems Education, 18(1).....

READ MORE

Stage 3. Workforce-ready Level

TEAM SKILL PROGRESS TRACKING FORM (SCHLIMMER ET AL.)

Appendix A of Schlimmer et al. (1994) offers a Team Selection and Evaluation Form that covers areas of task skills, work habits, work attitudes, and relational skills. See Schlimmer, J. C., Fletcher, J. B., & Hermens, L. A. (1994). Team-oriented software practicum. IEEE Transactions on.....

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Stage 1. Preparatory Level

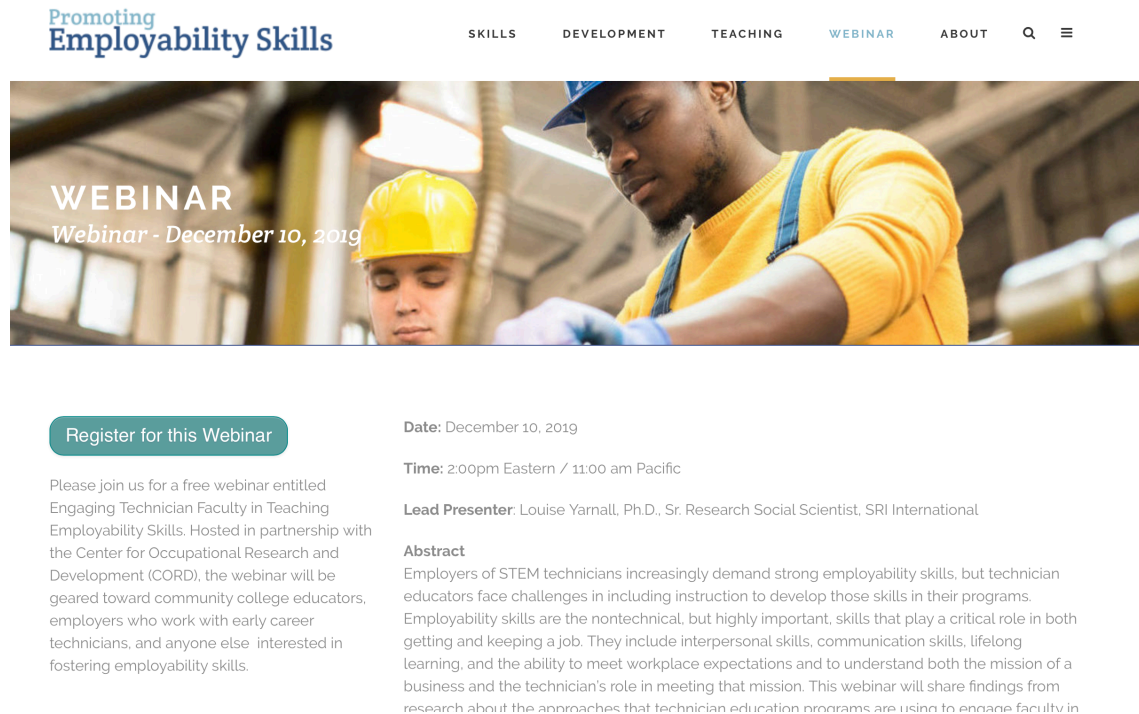
TEAM PROGRESS REPORT FORM (PIMMEL)

Figure 2 of Pimmel (2003) provides a simple survey that can be used by team members to evaluate team progress, effectiveness, and problems each week. From Pimmel, R. L. (2003). A practical approach for converting group assignments into team projects. IEEE Transactions on Education, 46(2).....

READ MORE

Our website offers examples

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



The screenshot displays the website for 'Promoting Employability Skills'. The navigation bar includes links for SKILLS, DEVELOPMENT, TEACHING, WEBINAR (highlighted), and ABOUT, along with search and menu icons. The main banner features a photo of two technicians in a workshop, with the text 'WEBINAR Webinar - December 10, 2019'. Below the banner, there is a 'Register for this Webinar' button. The text describes a free webinar titled 'Engaging Technician Faculty in Teaching Employability Skills', hosted in partnership with the Center for Occupational Research and Development (CORD). The abstract discusses the demand for employability skills in STEM technician education and the challenges of teaching them.

Promoting Employability Skills

SKILLS DEVELOPMENT TEACHING **WEBINAR** ABOUT 🔍 ☰

WEBINAR
Webinar - December 10, 2019

[Register for this Webinar](#)

Please join us for a free webinar entitled Engaging Technician Faculty in Teaching Employability Skills. Hosted in partnership with the Center for Occupational Research and Development (CORD), the webinar will be geared toward community college educators, employers who work with early career technicians, and anyone else interested in fostering employability skills.

Date: December 10, 2019

Time: 2:00pm Eastern / 11:00 am Pacific

Lead Presenter: Louise Yarnall, Ph.D., Sr. Research Social Scientist, SRI International

Abstract
Employers of STEM technicians increasingly demand strong employability skills, but technician educators face challenges in including instruction to develop those skills in their programs. Employability skills are the nontechnical, but highly important, skills that play a critical role in both getting and keeping a job. They include interpersonal skills, communication skills, lifelong learning, and the ability to meet workplace expectations and to understand both the mission of a business and the technician's role in meeting that mission. This webinar will share findings from research about the approaches that technician education programs are using to engage faculty in

Q & A



Resources

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



Grant Information

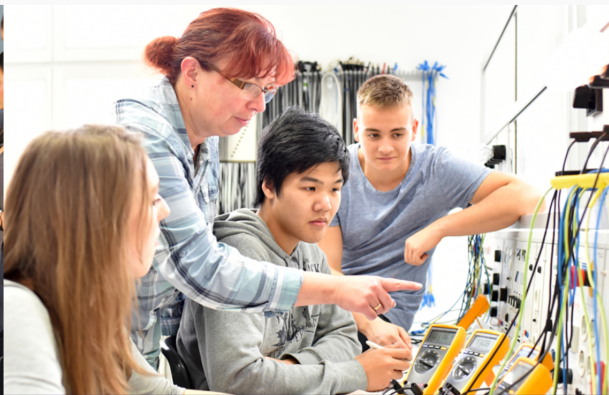
- This work was supported by the National Science Foundation under DUE# 1700703
- Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

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.

