

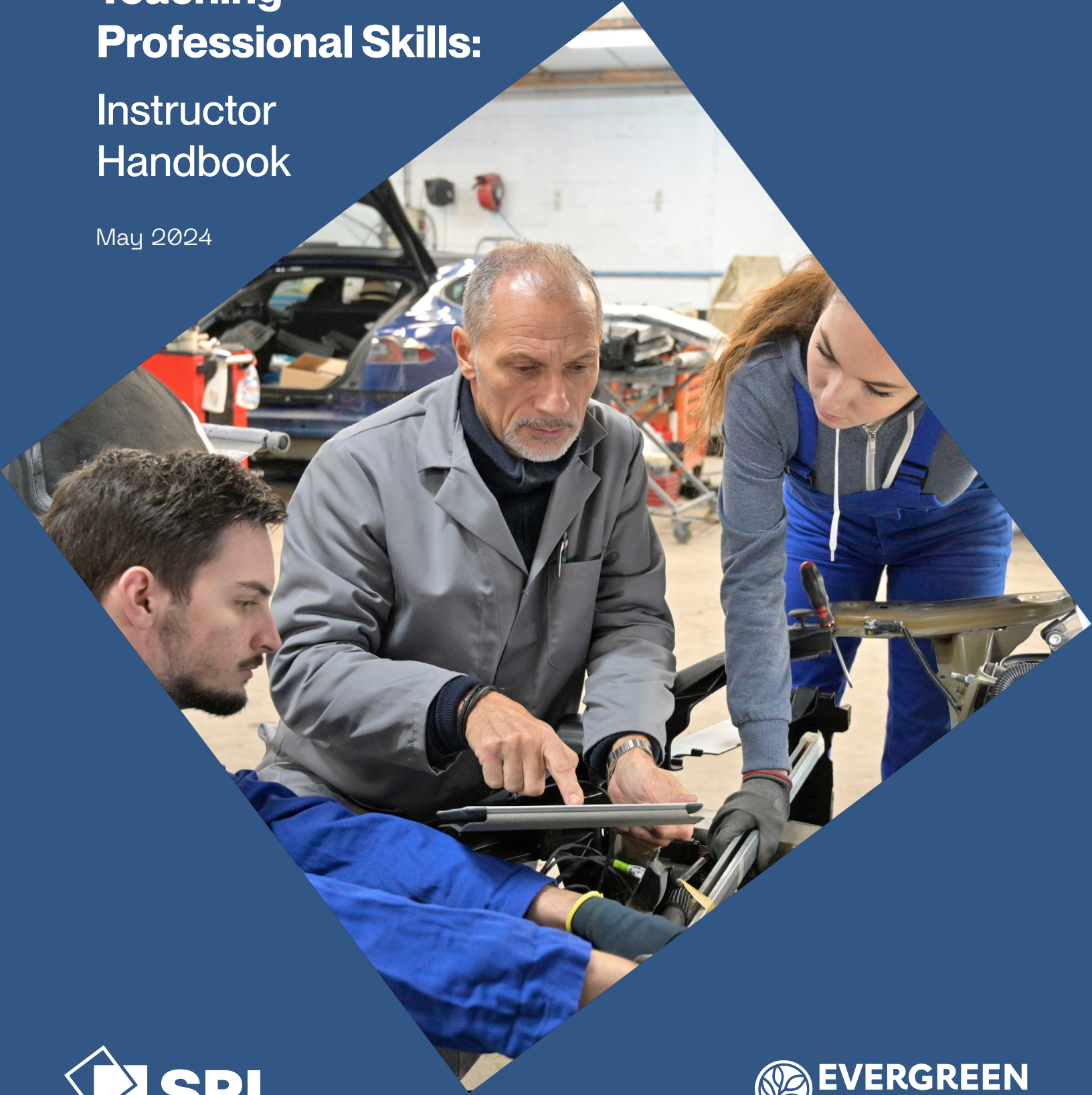


Project GOALS

Greater Opportunities to Advance Lifelong Success

Teaching Professional Skills: Instructor Handbook

May 2024



Acknowledgments

Employers expect community colleges to produce graduates who are not only technically skilled, but also possess professional skills. This handbook aims to support technical instructors to develop students' professional skills. It represents the culminating work of Project GOALS, a researcher-practitioner partnership funded by the National Science Foundation. These research-based materials were developed by Louise Yarnall, Erin Smith, Anandita Krishnamachari, Patrik Lundh, and Rebecca Griffiths of SRI, with invaluable input, testing, and review by educators affiliated with Evergreen Valley College in East San Jose: Angel Fuentes, Roberta Kunkel, Maniphone Dickerson, Mark Bernbeck, Manuel Rosas, Michael Cortese, Michael Hernandez, Lawrence Lyon, Chetan Shah, Mithran Menon, Jim Burnham, Fred Mitchem, and Erik Koepf.



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Project GOALS

Greater Opportunities to Advance Lifelong Success

Introduction

Professional skills are increasingly important to success in the workplace as technologies and the global economy rapidly change. Technical education programs face continual demands from employers to improve the professionalism of graduates. This handbook provides technical instructors with research-based instructional strategies, tested and refined in the classroom, to help students strengthen their professional skills.

This handbook starts by outlining a set of core teaching principles that were drawn from a review of 273 studies by classroom instructors like you.¹ Then the handbook describes instructional strategies and lessons for each principle. These lessons were co-developed with career technical instructors in community colleges and secondary schools.

By using this handbook, you'll learn how to:

- **explain the importance of professional skills**
- **define what professional skills are**
- **model and explain what professional skills look like when performed well**
- **provide opportunities for students to practice and reflect on professional skills**
- **help students set goals for personal growth**
- **give students ways to describe their professional skills for career planning, job applications, and interviews**

This handbook focuses on four professional skills that technical employers particularly value in entry-level employees:

- **teamwork**
- **communication**
- **adapting to workplace expectations**
- **lifelong learning**

Technical employers may look for other professional skills, too. You can apply the instructional strategies you learn in this handbook to other professional skills as well. In addition, there is a student handbook for them to use to track their development of employability skills across the courses in your career program. You will see cross references to the student handbook so you can reinforce students' usage of that important tool.

Whether you have experience coaching students in professional skills or are new to the topic, by using this handbook you can build your confidence as an instructor and grow stronger relationships with your students as you help them develop their own skills.

¹ Yarnall, L., & Remold, J. (2019). *Working stronger and smarter: A handbook on theory and techniques for developing employability skills for technicians*. SRI International.

Starting Point: Five Principles for Developing Professional Skills

The five core teaching principles below will help you cultivate students' professional skills. They are based on extensive research and listed in the recommended sequence for using them.



Explain skills and confront misconceptions: This is the foundational principle. Students often don't recognize how critical professional skills are to their success. They may think only academic or technical skills matter. You can explain to them what the skills are and confront those misconceptions by sharing how important the skills are to workplace success.



Support: This core principle involves establishing a culture of candor, conversation, and mentorship around professional skills.



Practice: Students need opportunities to apply professional skills in work-related activities. This handbook provides some ways to build such opportunities into classroom labs.



Play: Sometimes it helps to design distinct roles students can play during the lab activities. They can practice different professional skills depending on their role.



Reflect and grow: After lab activities, it is essential to give students (and you!) time to reflect on the performance of the professional skills. This helps students see how they can grow these skills over time.

For the rest of this handbook, you'll explore lesson modules that give you strategies for applying these five principles in your classroom. The modules are tailored to each of the four professional skills listed in the Introduction.

Setting the Foundation

Two instructional strategies will help you apply the first core teaching principle, explain skills and confront misconceptions:

- Explain what skills are important by identifying professional skills in a job listing
- Define each professional skill in terms of its behaviors and mindsets

The first two lesson modules guide you in using these strategies in your classroom.

Module 1: Identifying professional skills in a job listing



What will I do?

- Review a job listing from your technical field
- Engage students in identifying professional skills in the job listing
- Discuss the importance of professional skills in technical jobs

What will my students learn?

- What professional skills look like in a job listing
- Why professional skills are important

What should I consider before the lesson?

- You can project the job listing, print and distribute it, or give students a link to it online.
- You may review more than one job listing, as needed.
- You may want to set the context for the lesson. The videos below show why and how professional skills are so important to the work lives of students.
 - Importance of Professional Skills: <https://www.youtube.com/watch?v=yYBwEpXZanY&t=8s>
 - Recommendations for Jump-Starting Professional Skills: <https://www.youtube.com/watch?v=sqb1WfTC4DM&t=7s>
- You can assign this task as homework and discuss briefly in class.

When should I review a job listing?

- Do this activity before a lab to emphasize the importance of a professional skill.

Teaching tips

- **Check** students' current understanding first. For example, you might say:
 - "A technical job involves both technical skills and professional skills. Do you know the professional skills for jobs in the field? What are some?"
 - "Those of you who already have jobs or internships, can you describe for the class an example of when you needed to use these professional skills?"
- **Review** a job listing, saying: "Here's a job listing. Find the professional skills."
- **Discuss** the professional skills: "What questions do you have about how to perform the professional skills mentioned in this job listing?"

Example job listings

The following pages present three examples of job listings for different technical fields. Each has an “answer key” that highlights content related to the four professional skills. Using Adobe Acrobat, you may download the worksheet pages and upload to your class learning management system (LMS).

Manufacturing technician²

Description

The Radio Frequency (RF) Technician's responsibilities are focused in the area of microwave circuit alignment and testing in support of shipping schedules. The RF Technician will support production activities within a group concentrating on advanced microwave subsystems for applications including missile front ends, radar receivers, wideband tuners, and synthesized sources. Duties include alignment, testing, and troubleshooting of RF thin film circuits, circuit cards, and subsystems, as well as collecting and reviewing test data and providing feedback to manufacturing engineers on production products.

Responsibilities

The RF Technician's responsibilities also include:

- Work in a production environment to perform RF tuning, troubleshooting, and testing on complex, multifunction thin film microwave integrated circuits (MICs), circuit card assemblies, and/or subsystems, and carefully review data for compliance.
- Carefully follow production documentation and processes, including keeping detailed records of testing and rework performed.
- Actively participate in daily production meetings and regularly interface with manufacturing engineers.

² To find additional examples, search on Indeed.com using the keywords "manufacturing technician."

Answer key

Description

The Radio Frequency (RF) Technician's responsibilities are focused in the area of microwave circuit alignment and testing in support of shipping schedules. The RF Technician will support production activities **within a group** concentrating on advanced microwave subsystems for applications including missile front ends, radar receivers, wideband tuners, and synthesized sources. Duties include alignment, testing, and **troubleshooting** of RF thin film circuits, circuit cards, and subsystems, as well as collecting and reviewing test data and **providing feedback to manufacturing engineers on production products.**

Responsibilities

The RF Technician's responsibilities also include:

- Work in a production environment to perform RF tuning, **troubleshooting**, and testing on complex, multifunction thin film microwave integrated circuits (MICs), circuit card assemblies, and/or subsystems, and carefully review data for compliance.
- **Carefully follow production documentation and processes**, including **keeping detailed records of testing and rework performed.**
- **Actively participate in daily production meetings and regularly interface with manufacturing engineers.**

Associated Skills

Teamwork: Working within a group

Communication: Providing feedback

Adapting to Workplace Expectations: Documentation, detailed records

Lifelong Learning: Troubleshooting

Computer-aided design and drafting (CADD) technician³

Description
Who are we?
TriCore Panels is the provider of choice for manufacturing, fabricating, and installing architectural paneling systems in the San Francisco Bay Area and Silicon Valley. As an entrepreneurial family-owned business, founded in 2012, our core advantage is that we control the whole process from A to Z, which allows us to offer very competitive pricing compared to the industry standard. TriCore Panels continues to provide innovative solutions in architectural panel systems in order to keep up with our clients' creative building designs.
What are we looking for?
Candidates can expect to go through on-job training in drafting, reading, and understanding fabrication drawings, shop drawings, and department standards. The ideal candidate for this role is able to understand and utilize shop drawings/architectural drawings to produce fabrication drawings. These drawings will be used by CNC programmers in the department, the fabricators on the shop floor, and the installers in the field. This position will work closely with our project managers to learn and produce these necessary products. Occasionally, other responsibilities will arise, including tracking revisions, helping refine standards, helping facilitate remakes, etc.
'Day in the life':
<ul style="list-style-type: none">▪ Develop working drawings in AutoCAD based on field measurements and shop drawings▪ Work with the project management team throughout a project life cycle▪ Create hand sketches and renderings▪ Review special conditions to ensure feasibility▪ Prioritize and work on multiple projects while maintaining deadlines
What do we require?
<ul style="list-style-type: none">▪ Ability to prepare and develop design presentations to internal teams▪ Excellent verbal and written skills▪ Proficiency in AutoCAD (recommended)▪ Read and understand architectural shop drawings/plans (recommended)▪ Familiarity with manufacturing processes
Is this you?
<ul style="list-style-type: none">▪ Excellent organizational, detail, and relationship-building skills▪ 3+ years in AutoCad (preferred)▪ Open-minded and coachable

³ To find additional examples, search on Indeed.com using the keyword "drafter."

Answer key

Description
What are we looking for?
Candidates can expect to go through on-job training in drafting, reading, and understanding fabrication drawings, shop drawings, and department standards. The ideal candidate for this role is able to understand and utilize shop drawings/architectural drawings to produce fabrication drawings. These drawings will be used by CNC programmers in the department, the fabricators on the shop floor, and the installers in the field. This position will work closely with our project managers to learn and produce these necessary products. Occasionally, other responsibilities will arise, including tracking revisions, helping refine standards, helping facilitate remakes , etc.
'Day in the life':
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What do we require?
<ul style="list-style-type: none">▪ Ability to prepare and develop design presentations to internal teams▪ Excellent verbal and written skills▪ Proficiency in AutoCAD (recommended)▪ Read and understand architectural shop drawings/plans (recommended)▪ Familiarity with manufacturing processes
Is this you?
<ul style="list-style-type: none">▪ Excellent organizational, detail, and relationship-building skills▪ 3+ years in AutoCad (preferred)▪ Open-minded and coachable
Associated Skills
Teamwork: work closely with project managers, project management team, relationship-building skills Communication: helping to facilitate, excellent verbal and written skills, read and understand, presentations Adapting to Workplace Expectations: review special conditions Lifelong Learning: on-the-job training, open-minded and coachable

Automotive technician⁴

Description

CALLING ALL TECHNICIANS! We want YOU to apply today and join our team! Work for a company that is socially conscious, environmentally friendly, and pays it forward to the communities we serve.

Responsibilities

- Perform work specified on the repair order with efficiency and in accordance with dealership
- Test-drive vehicles, and test components and systems, using diagnostic tools and special service equipment
- Diagnose, maintain, and repair vehicle automotive systems including engine, transmission, electrical steering, suspension, brakes, air conditioning, etc.
- Communicate directly with the Service Advisor so that customers are informed if any additional service is needed. Provide an estimate of time needed for additional repairs
- Execute repairs under warranty to manufacturer specifications

Qualifications

- 2+ years of Service Technician experience preferred
- High school diploma or equivalent, ASE certification required
- B level qualifications, including Diagnostic, Electrical, and Engine Repair
- Dexterity, requiring a steady hand, excellent hand-eye coordination
- Mechanical and troubleshooting skills and ability to operate electronic diagnostic equipment
- Excellent customer service skills and basic computer competencies
- Positive, friendly attitude, along with an eagerness to improve
- Enjoy working in a dynamic environment
- Teammate with the ability to collaborate with others effectively
- Ability to learn new technology, repair, and service procedures and specifications
- Valid driver's license and clean driving record

⁴ To find additional examples, search on Indeed.com using the keywords "automotive technician."

Answer Key

Description

CALLING ALL TECHNICIANS! We want YOU to apply today and join our team! Work for a company that is socially conscious, environmentally friendly, and pays it forward to the communities we serve.

Responsibilities

- Perform work specified on the repair order with efficiency and in accordance with dealership
- Test-drive vehicles, and test components and systems, using diagnostic tools and special service equipment
- Diagnose, maintain, and repair vehicle automotive systems including engine, transmission, electrical steering, suspension, brakes, air conditioning, etc.
- **Communicate directly with the Service Advisor** so that customers are informed if any additional service is needed. Provide an estimate of time needed for additional repairs
- Execute repairs under warranty to **manufacturer specifications**

Qualifications

- 2+ years of Service Technician experience preferred
- High school diploma or equivalent, ASE certification required
- B level qualifications, including Diagnostic, Electrical, and Engine Repair
- Dexterity, requiring a steady hand, excellent hand-eye coordination
- Mechanical and **troubleshooting skills** and ability to operate electronic diagnostic equipment
- **Excellent customer service skills** and **basic computer competencies**
- **Positive, friendly attitude**, along with an **eagerness to improve**
- Enjoy working in a dynamic environment
- **Teammate with the ability to collaborate with others effectively**
- **Ability to learn** new technology, repair, and service procedures and specifications
- Valid driver's license and clean driving record

Associated Skills

Teamwork: ability to collaborate

Communication: communicate with service advisor, customer service skills

Adapting to Workplace Expectations: positive, friendly attitude, meeting manufacturer specifications and doing basic computer competencies

Lifelong Learning: ability to learn, eagerness to improve

Module 2: Explaining professional skills



What will I do?

- Define the four professional skills using videos
- Review the behaviors associated with performing each professional skill well
- Share a personal testimonial about the relevance of professional skills to workplace success
- Ask students to share experiences and observations of these skills from their own lives
- Refer students to the Checklist of Professional Skills, p. 4 in their Student Handbook

What will my students learn?

- The definition of each professional skill
- The relevance of each skill to workplace success

What should I consider before the lesson?

- You can share videos in class or assign them as homework.
- Consider focusing on one professional skill at a time.
- Consider defining each professional skill before lab activities where students will practice that skill.

How can I teach the professional skills?

The sections below include videos and define behaviors for each professional skill. They also provide guidance for creating your testimonials and leading brief classroom discussions about the skills. You may cut and paste the links below into your LMS.

Teamwork

Define teamwork

You can use one or both of these videos:

- **Teamwork** (<https://www.youtube.com/watch?v=PG3f83K3ssU>). This British video (1:53) defines teamwork, explains how to describe it in a resume, and suggests ways to gain experience in this skill.
- **Collaboration Assessment 2** (https://www.youtube.com/watch?v=C_n1RMembJk). This video (3:16) illustrates how to manage teamwork tasks. You can have students reflect on which approach they prefer and why.

Review relevant behaviors

- Be on time and attentive at meetings
- Be cooperative, handle conflict well
- Assist team members when needed

Share personal testimonial

- Offer a brief personal testimonial in class about the importance of teamwork to your own career success. In your testimonial, you can:
 - Describe how much of your job involves collaborating with others team members
 - Describe how teamwork has supported your own learning on the job, whether in developing technical skills or attitudes toward their jobs
- Alternatively, you can share a video of your testimonial and assign reflection questions as homework.
- You could also invite a guest from a local business or a graduate of your school to present on the importance of teamwork. Students can ask questions about the role of teamwork in the guest's career success.

Discuss questions with class

1. Think back to when you've had a good team experience, can you describe examples of what made it positive?
2. If you've had a bad team experience, can you describe examples of what made it negative?

Communication

Define communication

You can use one or more of these videos:

- **Communication** (<https://www.youtube.com/watch?v=ugD2EpgTmV8>). This British video (1:52) defines communication, explains how to describe it in a resume, and suggests ways to gain experience in this skill.
- **The Power of Nonverbal Communication** (<https://www.youtube.com/watch?v=fLaslONQAKM>). In this TEDx video (12:55), a former FBI interviewer discusses how understanding nonverbal behavior builds empathy and is central to influencing others. It involves understanding how the ways people dress, shake hands, and move their faces and bodies conveys their feelings and attitudes. (Note: YouTube pushes an ad at the midpoint.)
- **Speaking Professionally** (<https://www.youtube.com/watch?v=8lc3K5W9Gqc>). This video (2:56) summarizes the basics of communication skills in an interview format and provides an exercise to practice with a classmate at the end.
- **Communicating Digitally** (<https://www.youtube.com/watch?v=ZwNmTX8Sna4>). This video (5:12) summarizes digital communication skills in an interview format and provides an exercise to practice with a classmate at the end.
- **Nonverbal Communication** (<https://www.youtube.com/watch?v=9pNF1sSp944>). This video (4:04) summarizes the importance of nonverbal communication, such as eye contact, in an interview format and provides an exercise to practice with a classmate at the end.

Review relevant behaviors

- Contribute ideas or concerns well
- Use digital tools to share ideas or concerns
- Listen well to team members' ideas or concerns
- Provide a quality section of a report or presentation

Share personal testimonial

- Offer a brief personal testimonial about the importance of communication to your own career success.
- Alternatively, you can share a video of your testimonial and assign reflection questions as homework.
- You could also invite a guest from a local business or a graduate of your school to present on the importance of communication. Students can ask questions about the role of communication in the guest's career success.

Discuss question with class

1. Think back to when you've seen effective communication. Like someone listening well or reporting on team progress, or an email request or presentation that impressed you. Can you describe what made it effective?

Adapting to workplace expectations

Define adapting to workplace expectations (also called “work ethic” or “adaptability”)

You can use one or more of these videos:

- **Taking the Initiative at Work** (<https://www.youtube.com/watch?v=ZsNokG73-kE>). This video (3:58) describes the importance of having a proactive attitude to work situations and the attitudes and behaviors that hinder and help with taking initiative.
- **Adaptability Intro** (<https://www.youtube.com/watch?v=PJ3lZ48WJxc>). This video (1:09) summarizes the basics of adapting to change in the workplace in an interview format and provides an exercise to practice with a classmate at the end.
- **Dealing with Stress** (<https://www.youtube.com/watch?v=vTWW-r4MYLY>). This video (3:32) summarizes the basics of adapting to stress in the workplace in an interview format and provides an exercise to practice with a classmate at the end.
- **Stay Positive at Work** (<https://www.youtube.com/watch?v=XBcYVKn6Rkg>). This video (6:56) discusses strategies for shifting one’s outlook about workplace situations: finding gratitude, rewarding oneself, making time for other things besides work, connecting with colleagues empathetically, creating a positive workspace, and smiling.

Review relevant behaviors

- Be positive and polite
- Respect deadlines
- Respect others’ ideas

Share personal testimonial

- Offer a brief personal testimonial about the importance of adapting to workplace expectations to your own career success.
- Alternatively, you can share a video of your testimonial and assign reflection questions as homework.
- You could also invite a guest from a local business or a graduate of your school to present on the importance of adapting to workplace expectations. Students can ask questions about the role of this skill in the guest’s career success.

Discuss questions with class

1. Think of someone in your life with adaptability. Can you describe what they did that impressed you?
2. Think of a time when someone disappointed you or your team. To what extent was that because they did not adapt to workplace expectations?

Lifelong learning

Define lifelong learning

You can use one or more of these videos:

- **Lifelong Learning** (<https://www.youtube.com/watch?v=IV6pMObHVL A>). This video (1:36) discusses the reasons for developing lifelong learning skills in an everchanging world.
- **Lifelong Learning** (<https://www.youtube.com/watch?v=kDsWJaFg1HY>). This video (2:39) describes types of topics for lifelong learning and the ways to build a lifelong learning mindset: asking questions, persisting until getting answers, and knowing where to look for information.
- **Why You Need to Be a Lifelong Learner** (<https://www.youtube.com/watch?v=DekAMet0qA8>). This video (4:22) describes reasons to keep growing and learning in life and on the job. It provides steps for lifelong learning at the end. Students might create a list of lifelong learning goals after watching.
- **The Importance of Learning on the Job** (<https://www.youtube.com/watch?v=GZRuzUtVn5l>). This video (4:32) describes the differences between learning in school and on the job, particularly how to embrace the risks of failure, look for learning opportunities in the workplace, and ask for help.
- **Connecting Information with Critical Thinking** (<https://www.youtube.com/watch?v=MmhTymtQ-jc>). This video (4:16) summarizes the basics of connecting available information to understand a work situation in a new way and provides an exercise to practice with a classmate at the end.
- **Thinking about Multiple Solutions** (<https://www.youtube.com/watch?v=0S27VhpUZLc>). This video (3:59) summarizes the basics of developing and trying different ways to solve problems in an interview format and provides an exercise to practice with a classmate at the end.

Review relevant behaviors

- Ask for help (for example, check to understand role and responsibilities in a work task)
- Gather information to offer solutions to problems with a work task
- Gather information to contribute to work products or tasks

Share personal testimonial

- Offer a brief personal testimonial about the importance of lifelong learning to your own career success
- Alternatively, you can share a video of your testimonial and assign reflection questions as homework.
- You could also invite a guest from a local business or a graduate of your school to present on the importance of lifelong learning. Students can ask questions about the role of lifelong learning in the guest's career success.

Discuss question with class

1. Think of a time *outside of school* when you or someone you know did a good job of asking for help or trying to learn. What was effective about their approach?

Building a Culture of Support

To apply the second core teaching principle of support, you will share a personal story to model how to learn about professional skills from experience. This instructional strategy illustrates a growth mindset, which is foundational for developing and strengthening professional skills both in the classroom and on the job.

Module 3: Sharing a personal story of a lesson learned



What will I do?

- Explain how it takes time and practice to develop professional skills
- Share a personal lesson learned to model reflection and a growth mindset
- Discuss ways to reframe the “ouch” of receiving feedback and share research that shows successful professionals learn the most from corrective feedback
- Engage students in reading about the FUEL coaching method and in reflecting on a time they received corrective feedback that they now appreciate (optional activity)

What will my students learn?

- The value of reflection and a growth mindset in developing professional skills

What should I consider before the lesson?

- Your personal story can help normalize the process of learning from mistakes or misunderstandings.
- You can do the FUEL activity during class or assign it as homework.

How do I create my personal story?

Why share

- Personal stories about how teachers developed professional skills can help students reflect on their own experiences and develop a growth mindset.

When to share

- As you're introducing your approach to the class around developing professional skills

How to create a story (with sample text for communication skills)

- **Explain** the challenge you had with a professional skill.
 - *I remember when I started my first job, I didn't know how to write efficient emails. I would include lots of unnecessary language I thought made me sound more professional, but it actually made my emails much longer and more confusing than they needed to be.*
- **Describe** the feedback you got that indicated you needed to improve your performance of the professional skill.
 - *After I sent a few emails to external partners trying to schedule meetings for my supervisor, she told me directly that I needed to send her drafts of my emails before I sent them out so she could proof them and offer me suggestions on how I could improve.*

How do I create my personal story? (cont'd)

- **Describe** the resulting improved behavior.
 - *I learned from her that I can communicate more clearly over email by saying less, not more – lists and bullet points became my friends.*
- **Prepare** your students to receive feedback on their professional skills in your class by telling them about two activities:
 - Practicing these skills in lab activities
 - Reflecting on our performance of these skills
- **Extension activity** (optional): Ask your students to review and reflect on a FUEL activity to develop these skills when they are in the workplace.
 - First, read about the [FUEL coaching model](#) on LinkedIn.
 - Then, ask your students to read the LinkedIn page and answer the following questions:
 - Can you think of a time when a mentor or coach in your life has provided corrective feedback that you now appreciate?
 - How did you feel at first?
 - How did you ultimately benefit?

Suggestions for discussion

1. Discuss how you felt when you received feedback.
 - a. Note that it can feel uncomfortable to receive feedback.
 - b. Describe how you got through that discomfort and benefited from the feedback.
2. Talk about findings from research on feedback in the workplace:⁵
 - a. Employees want to receive more coaching from their supervisors.
 - b. While employees like praise, they recognize greater value from periodically receiving corrective feedback about how to do their work better or how to contribute more.
 - c. Note that many supervisors (and instructors!) dislike providing candid feedback.

⁵ Zenger, J., & Folkman, J. (2015). *How developing a coaching culture pays off: Dramatically improve your organization* [White paper]. Zenger Folkman. <https://zengerfolkman.com/wp-content/uploads/2019/05/How-Developing-a-Coaching-Culture-Pays-Off-LRC.pdf>.

Providing Opportunities to Practice Professional Skills

The third and fourth core teaching principles involve giving students opportunities to practice and play professional skills. To apply these principles, you will use the instructional strategy of having students play roles in realistic, challenging team activities.

Module 4: Designing lab activities with team roles



What will I do?

- Identify a specific professional skill and related subskills for practice in lab activities
- Define team roles associated with the professional skill
- Design different roles so students have opportunities to practice different subskills
- To learn more about students' areas for growth in their professional skills, you can administer a self-reflection survey early in your course or just before a team lab activity (See *Module 5. Reflecting on professional skills*).



What will my students learn?

- How to perform the behaviors associated with a specific professional skill and its subskills and strengthen those skills

What should I consider before the lesson?

- Integrate this activity into content-focused labs.
- Consider focusing on one professional skill in each lab activity so students can learn the details of performing each skill.
- If you do more than one lab in your class, consider rotating roles among students so they can practice different subskills for each professional skill.

A student testimonial on the importance of lab activities

Being able to listen to other people's perspectives and have healthy discussions and debates on the merits of different proposals in a healthy and effective manner is something this program has definitely encouraged with the group settings and the problem-solving tasks. Like sometimes they will set a certain fault with a car and say, okay now you have to figure out what is wrong with it, and the group has to come together and kind of give their ideas. What about this? Have we considered this? And all of those inputs strengthen the team as a whole.

I think it really emphasizes how important teamwork can be in a field that's normally not known for that – most technicians work on their own time. So, I think having that and also having critical thinking skills to make good arguments and also to be able to see when you are clearly wrong, that does happen quite a bit. Where, you know, I'll like mix something up and someone will say, "Remember it can't be that because this has to work this way." And I'm like oh, yeah, you're totally right and then we can quickly move on. Whereas it could have tripped us up for 20 minutes if we weren't able to communicate openly and give each other feedback.

How do I design lab activities?

Why do lab activities with team roles

Team activities can help students practice and play with professional skills while they're learning about content. For example, you can help students practice communication skills by assigning roles such as Leader, Recorder, and Summarizer during a group project. The Leader would focus on the subskill of interpersonal communication by practicing listening and helping the team reach consensus. The Recorder would practice listening, writing, and reporting on team discussions. And the Summarizer would focus on the subskill of verbal communication by practicing speaking, summarizing, and listening.

When to do the lab activities

- At least twice per course, as scheduling permits
- Keep the same team members each time, rotating their roles

How to do a lab activity

1. **Describe** the team roles and review how each fosters a specific professional skill and its subskills. We recommend using a handout that defines all the roles and the employability skills.
 - Review the professional skill and its importance to career success.
 - Explain how team roles relate to jobs in the field.
 - Describe and assign the team roles.
 - Print or provide a link to the team role handout (see examples below).
 - Assign roles to team members or ask the members to distribute roles.
2. **Observe** team performance.
 - Identify your role as Manager.
 - Meet once with each team to check on performance, reviewing each role.
 - Consider keeping a log of individual team member reports (see resources in *Module 5. Reflecting on professional skills*).
3. **Debrief** the team activity with the whole class.
 - Use discussion questions in the resource below to help students share what they learned about the professional skill.

Resources for lab activities

You will find these resources in the Appendix.

- [Team Role-Play Lab: Debrief Guide](#)
- [Role Play Indicators of Excellence Handout](#)
- [CADD: Technical Term Organizer Sheet](#)

Example team role handouts

The tables on the following pages describe behaviors for roles in advanced manufacturing, automotive, or CADD settings. The tables also list the professional skills and subskills that each role promotes. You can distribute these tables to students as handouts. Using Adobe Acrobat, you may download these pages and upload them to your class LMS.

Advanced manufacturing team roles

Role	Description	Professional skills
Leader	Your job is to understand the roles of all your team members and coordinate the tasks in a way that engages each team role effectively and efficiently. Consider: How do you decide who does what? (Appreciate the different skill sets in your team.)	Teamwork, communication, adapting to workplace expectations
Recorder	Your job is to track the test results of the efficiency of the manufacturing process and communicate those results to the team to support process improvement.	Teamwork, communication
Manufacturing Engineer	Your job is to develop a production process that makes sure manufacturing is carried out on time. You choose the best technologies and process for manufacturing a product and manage the running, maintenance, and continuous improvement of the manufacturing process. To do this job, you need to communicate your process to the other engineers and follow up with them as needed.	Communication, adapting to workplace expectations
Design Engineer	Your job is to develop ways to improve a product or process. This often involves using computer software to create designs and develop prototypes to test ideas. You need to listen to customer or team needs, and then base your designs on that input. Consider: Focus on talking with the team to better understand what designs and prototypes are needed.	Communication (written and verbal)
Test Engineer	Your job is to decide how to test the product and manufacturing process so you find the most effective product design and manufacturing process. This involves listening and learning about current product features and the production process.	Communication, lifelong learning
Planning Engineer	Your job is to develop a way to make sure the product is delivered on time. You need to track progress and communicate with all team members as needed	Teamwork, communication

Automotive team roles

Role	Description	Professional skills
Customer	Your job is to describe the technical problem your car is having. Review the details of the problem and describe it to the Service Writer in a nontechnical way. Focus on what's not working, how the car is behaving, and any odd sounds the car is making. You could also talk about how soon you need the car back or other concerns.	Communication
Service Writer	Your job is to understand the customer's automotive issues. For example, you listen to the customer's description of the problem, clarify the problem with them, conduct an inspection, take a test drive, check vehicle maintenance records, and look at the service schedule. You also need to tell the customer about any changes to the service schedule based on availability of parts and technicians.	Communication (written and verbal), adapting to workplace expectations
Technician	Your job is to review the work required with the Service Writer and determine a plan to complete the technical work. This may involve coordinating with various technical specialists in the shop.	Teamwork, communication
Parts Manager	Your job is to check and maintain the shop's stock of parts and to check on the availability of parts required to complete incoming work. This may involve alerting the Service Writer that a part will need to be ordered and estimating the time for arrival. It may also involve communicating with the automotive parts suppliers to determine exact parts needed and when they can be delivered.	Communication (verbal), adapting to workplace expectations
Service Manager	Your job is to oversee the overall operation of the shop, from decisions about how many parts to stock to processes for conducting repairs and interacting with customers. You organize department meetings to check on how all parts of the operation are functioning, identifying processes for improvement.	Teamwork, communication (verbal), adapting to workplace expectations, lifelong learning

CADD team roles

Role	Description	Professional skills
Summarizer	Your job is to prepare a brief summary of today's technical report or lab activity. Your team discussion will start with your 1–2 minute statement that covers key points, main highlights, and how/when such reports are needed in a technical workplace. Include one paragraph of the big picture.	Communication (written)
Quality Assurance Lead	Your job is to assign the roles for your team members. After you assign roles, you'll oversee your team members to make sure they are doing their appropriate jobs. This also includes giving feedback and pitching in as needed. Consider: How do you decide who does what? (Appreciate the different skill sets in your team.)	Teamwork, communication
Connector	Your job is to develop an example of a real-world application in the workplace. If you can't think of an example, is there an example that was used in class?	Lifelong learning, adapting to workplace expectations
Illustrator for Technical Reference	Your job is to refer to reading schematics and illustrations in technical manuals. Decide and create a visual that will help a person outside your team understand what needs to be completed or accomplished. This visual can be a graph, table, chart, Venn diagram, or another helpful graphic. Consider: Focus on talking with the team to better understand what illustrations are needed.	Communication (written and verbal)
Technical Term Organizer	Your job is to identify and define new terms. Your role can be joined with the Summarizer role. Consider: When discussing vocabulary, always refer back to the text so you can examine the term in context. Helpful resource: Technical Term Organizer Worksheet	Communication (written)

Learning From Experience

The fifth and final core teaching principle is reflect and grow. To apply this principle, you can use several strategies to help your students reflect:

- Several ways to rate students' performance of the professional skills. Gathering different perspectives on performance will provide more objective results and feedback.
 - Self-reflection surveys for students to rate themselves
 - Peer ratings of performance within teams
 - Your own ratings of students' performance
- Rubrics help clarify for students the specific behaviors associated with different levels of competence in professional skills—for example, from “beginning” to “excelling.”
- Self-reflection on what students learn and accomplish related to the professional skills. This can lead to stories that students can use in resumes and job interviews.

Module 5: Reflecting on professional skills



What will I do?

- Engage students in self-assessing their professional skills
- Engage students in assessing their teammates' professional skills
- Help students interpret what they have learned from lab activities in stories that they can use in resumes and job interviews. Then pair students to interview each other; they get to use their STAR stories to answer interview questions their partner poses.
- Document your reflections of individual students' performance of professional skills
- Engage students in writing short stories about their professional skill accomplishments in lab activities, which they will keep in their portfolios.

What will my students gain?

- Insights into their own professional skill strengths and opportunities to improve
- Ultimately, students' reflections will become part of their professional skills portfolio, which they will build across classes in your career program. After they collect several of these reflections, they can use the portfolio to work with a career coach or counselor to develop compelling and accurate stories about their professional skills for resumes and job interviews.

What should I consider before the lesson?

- You can engage students in reflection in class through think-pair-share activities or assign it as individual homework.
- To introduce the importance of reflection, it may help to share a video with testimonials about learning professional skills on the job. For example, **Using Professional Skills While Transitioning to the Workplace** (<https://www.youtube.com/watch?v=DR79APoFKqI>).
- In addition to students' and your own reflections, you could try peer reflection. See XXX below for an additional rating tool you might try.

How do I help students reflect?

Why reflect on professional skills

Professional skills are complex. Reflection on performance can help your students:

- Assess their personal skill development while receiving timely and supportive feedback from you
- Set their own goals for self-growth, track their progress, and articulate their personal strengths
- Generate evidence of their professional skills that they can share with potential employers, scholarship committees, or training programs

You can present different forms of reflection as learning opportunities for your students. Clarify the value:

- By monitoring their growth through self-reflection as well as instructor reflection, students can gain insights into their strengths and areas for continued growth.

Your options for reflection activities include:

- A summary of the average self-reflection ratings across the whole class, so your students can see how their individual self-ratings compare with their classmates' self-ratings.
- A summary of how team members rated each other in lab activities, so your students can see how their self-ratings compare with their teammates' ratings of their performance.
- A summary of how you rated everyone in team activities, so your students can see how their self-ratings compare with your ratings for the whole class. This is helpful because instructors usually rate students as having more room to grow in their professional skills than students do for themselves or their peers.

When to reflect on professional skills

- To support students' reflection on their own skills, have a reflection activity after a team lab activity.

How to lead reflection on professional skills (with sample text)

Discuss why you want students to use the reflection tool or tools:

- Self-reflection: *You can practice reflecting on how you're performing the professional skills.*
- Instructor reflection: *You can compare how you rated yourself against how I did.*

Present your average reflection ratings for the class and ask students to compare with their self-ratings:

- Guidance: *In the workplace, you'll need to respond to corrective feedback. As you compare your self-reflection scores for professional skill performance to the average scores I gave to the whole class, I want you to focus on cases where you scored yourself **higher** than the average class score. For those cases, I'd like you to consider my score as a type of supervisorial feedback that indicates you need to improve your performance. Then, I want you to review the rubric and set goals for how you can improve.*

Ask students to complete a STAR story reflection:

- Provide the worksheet below and have students complete it.
- Consider using the paired interview activity below so students can share their stories with each other. In pairs, have students take turns playing the role of interviewer and interviewee. Each student gets 5 minutes to tell their story.
- After the pair activity, ask a couple volunteers to discuss what they learned about their professional skills through this exercise.

Resources for reflection

You will find these tools at <https://employabilityskills.org/teaching/>

- Reflection tool for instructors
- Self-reflection tool for students
- Peer reflection tool
- Step-by-step guide for setting up and administering reflection surveys

STAR stories

A STAR story has four parts: situation, task, action, and results. Students use STAR stories to transform what they did in a team lab activity into a story that sums up what they learned about their professional skills. This story will go into their portfolio, and they can use it in resumes and job interview preparation.

You can use the worksheet on the next page with the STAR story structure to help students write down ideas for how they'd like to answer the behavioral interview questions based on their lab experiences. Using Adobe Acrobat, you may download these pages and upload them to your class LMS.

STAR Story Worksheet	
STAR structure	Your STAR story
<p>Situation: Describe a situation where you got to practice a professional skill. This is a situation that presented a <i>challenge</i> to that skill.</p>	<p>What was the challenging situation you experienced in the lab activity?</p>
<p>Task: Describe your role in the situation. What role were you performing in the situation and what was expected of you?</p>	<p>What was your role in the lab? What responsibilities and skills did you have in that role?</p>
<p>Action: Explain how you addressed the situation and what steps you took to overcome the challenge. How did you go “above and beyond”?</p>	<p>What did you do or say to help?</p>
<p>Result: Explain the outcome of the situation. Provide concrete examples and, if possible, a quantifiable achievement based on your efforts (for example, how quickly or how smoothly something could be done).</p>	<p>How did your effort influence or change the challenging situation?</p>

Paired interview activity

Once students have created their STAR stories, you can give them an opportunity to practice using them in a mock interview that they do in a paired activity with a classmate.

Paired Interview Activity Instructions

Introduction

Once you're invited for a job interview, you need to prepare. Many employers screen job applicants for professional skills by including a few **behavioral interview** questions. These are questions that:

- focus on your past experiences, and
- assess how you have navigated specific situations and used your professional skills.

Unlike typical questions in school, these types of interview questions don't have clear right or wrong answers. Instead, they are an opportunity for you to show who you are. Here are a couple tips:

- Consider telling a story of how you overcame a challenge. This means you'll need to explain something you found difficult.
- Don't make your story about how you know it all. This can be off-putting. If you discuss a personal strength, talk about how you use that strength to help others on a team.

Below are some examples of behavioral interview questions, organized by the professional skill.

Teamwork

- How do you turn people who work for you into a team? What has worked and what hasn't?
- Describe a time when you worked with someone who did things very differently from you. How did you complete the job?

Communication

- Talk about a time when you had to communicate verbally to get an important point across. How did you accomplish this?
- Have you ever had an experience at work where you had to tell other people what you thought or felt? What was the outcome?

Adapting to workplace expectations

- Talk about a time when you had to go above and beyond to get a job done. How did you handle this?
- Have you ever worked on a difficult assignment with few or no resources? What did you do and what was the result?
- Describe a time when you saw a problem at work and created a solution for it.

Lifelong learning

- Give an example of how you gathered information to solve a problem. How did you analyze the information and reach a decision?
- Talk about a time when you solved a problem in a unique way. What happened?

Student testimonial on the value of the paired interview activity:

The most valuable part was they had us paired up in groups and [we] did interviews of each other, made resumes, all our skills prior jobs, experience that sort of thing, and what we were wanting to do. And then we split up into groups of four, interviewed, and gave feedback based on that. It definitely opened my eyes to a few things I wasn't aware of before, like how important certain things on [a] resume [are.] Like putting everything you possibly can on there that's relevant, but not so much they just don't read it.

Appendix

In this section you will find guides for debriefing students after the team role-playing activity, a list of observable professional behaviors that you can see during the team activities, and a worksheet that will help student CADD teams track their use of new technical terminology--a key part of professional communication. This approach might be adapted to other subject areas too.

Team role-play lab: Debrief guide

Introduction and context

This guide will help you debrief students after the team role-play lab activity. The debrief questions encourage students to think about their roles on the teams and how they handled situations with other teammates throughout the lab activity. **You will select target professional skills. Please refer to the suggested debrief questions associated with each skill you select.**

The four professional skills are:

- **Teamwork:** Students should respond to requests for assistance from team members, understand their roles or responsibilities, complete tasks with excellence, be cooperative and handle conflict appropriately, and assume leadership as needed.
- **Communication:** Students should contribute insightful and useful input to discussions, articulate conditions and needs, listen to customers/managers/team members, and effectively summarize and document materials as needed on the job.
- **Lifelong learning:** Students should be able to gather useful information for the task, ask for help, and introduce or be open to new approaches and ideas.
- **Adapting to workplace expectations:** Students should be able to consistently demonstrate good manners and positive attitudes, be on time and present at meetings, be flexible, and respect others' ideas.

It can be challenging to figure out how to engage students around these skills, especially in a technical course. A list of debrief discussion starters is provided below. Pick the questions you think will work best for your class and lab activity.

The priority is not just to make sure students understand the technical content of the activity, but also to encourage students to discuss and develop self-awareness about what they thought they did well in their roles.

Materials

The debrief questions below are arranged as a menu of options. These options offer some ideas to help stimulate interaction, conversation, and engagement for students around using professional skills in their lab activities. You can select questions specific to a lab activity in the space beneath each list.

General debrief questions

- How did you feel the activity went?
- What were the challenges of your role?
- What skills did you need to use the most? For example:
 - When I was playing the role of a customer, I needed to work on communication.
 - When I was a tech, I had to use lifelong learning because it was a new technical skill I had to develop.
 - I had to adapt to workplace expectations because the customer was upset.
- Can you think of an example and share your ideas for how a similar situation could play out in real life?
- Is there anything you would do differently next time?
- Can you develop a professional skill story based on your experience today?

Teamwork debrief questions

- What was successful in the way you and your team worked together today?
- What worked best when you needed to get everyone together to complete the task?
- Did the teamwork you participated in today have the desired outcome?
- How could the teamwork be improved?

Communication debrief questions

- What aspects of communicating with your teammates did you find most successful?
- Did you find that communication helped to successfully complete this lab activity?
 - If yes, why?
 - If no, why?

Adapting to workplace expectations debrief questions

- Was there any time during the lab today when you had to adapt and change your plan?
- Did you feel you took initiative to complete the task with your teammates? How did you do that?
- How did you go above and beyond to complete the task or role you were assigned to today?
- Did unexpected problems emerge?
 - If so, how did you address the problem?
 - What did the solution look like?

Lifelong learning debrief questions

- Did you have to solve any new problems in the lab today?
 - If yes, how did you go about doing that?
- Did you have to gather any information to solve a problem today?
 - If yes, how did you analyze the information and reach a decision?

Team role-play lab: Indicators of excellence – Professional skill reference handout

The indicators below are for teamwork, communication, adapting to workplace expectations, and lifelong learning. To achieve excellence in these professional skills, students should demonstrate the behaviors listed in the table.

Professional skill	Indicators of excellence
Teamwork	<ul style="list-style-type: none"> ▪ Understands role and responsibilities ▪ Always responds to requests for assistance from other team members ▪ Completes tasks with excellence ▪ Is cooperative, handles conflicts well ▪ Assumes leadership as needed ▪ Encourages teammates to collaborate with each other
Communication	<p>Verbal communication</p> <ul style="list-style-type: none"> ▪ Listens to customers, managers, and team members ▪ Contributes insightful and useful input to discussions ▪ Is clear in discussion of own ideas and concerns ▪ Clearly articulates conditions and needs <p>Written communication</p> <ul style="list-style-type: none"> ▪ Completes writing tasks successfully ▪ Accepts and acts on feedback ▪ Written materials are free of spelling and grammar mistakes ▪ Ideas are clearly articulated ▪ Effectively documents or summarizes needs and suggestions using digital media
Adapting to workplace expectations	<ul style="list-style-type: none"> ▪ Consistently demonstrates good manners and positive attitude ▪ Arrives on time and is present at meetings ▪ Respects deadlines ▪ Displays a positive attitude and is flexible in the workplace ▪ Respects others' ideas
Lifelong learning	<ul style="list-style-type: none"> ▪ Gathers useful information for the task, especially to solve a new problem ▪ Asks for help ▪ Introduces new approaches and ideas

Team role-play Lab Observation Guide⁶

In a noisy lab setting (and even in quiet ones) it can be challenging to observe student interactions and performance. Below are some guidelines for useful observations:

1. **Understand why class observation is important:**
 - a. Helps you learn more about your students and establish relationships with them
 - b. Provides necessary information to make wise instructional decisions
 - c. Helps you gather evidence about their progress towards meeting their needs and goals around professional skills
 - d. Helps your students be more attentive and focused
 - e. Adds interest and excitement to your work
2. **Plan how you will observe:**
 - a. Which groups will you pay close attention to?
 - b. Which professional skills will you be observing?
 - c. How will you document your observations (for example, a notebook followed by using the Instructor Reflection Tool)
 - d. Refer to the Role Play Indicators of Excellence Handout before the observation
3. **Conduct the observations:**
 - a. Notice details
 - b. Avoid immediate interpretations; when you don't understand something, keep an open mind
 - c. Pay attention to your own beliefs, opinions, and experience
4. **Document your observations:**
 - a. Jot down anecdotes relevant to the performance of the professional skill you're observing
 - b. Consider using terms associated with the Role Play Indicators of Excellence Handout
 - c. Fill out the Instructor Reflection Tool
5. **Reflect**
 - a. Do this as soon after the lab activity as possible
 - b. Consider the following questions:
 - i. Did my students accomplish the goals around professional skills that I planned for this activity?
 - ii. How did my students respond to this activity?
 - iii. What worked well for them? What didn't work well?
 - iv. If I could do this activity again tomorrow, what might I do differently?
 - v. Were there some performances that met the indicators of excellence? How can I bring those out to the class?

⁶ These guidelines were adapted from this resource: <https://edulearn2change.com/article-classroom-observations/>

CADD: Technical term organizer worksheet

Introduction

The purpose of this worksheet is to support the Technical Term Organizer to list the new vocabulary for the team to understand.

Context and instructions

The Technical Term Organizer is a key role in the CADD role-play activity. The organizer's job is to identify and define unknown terms to help the team understand new terms and their broader definitions as well as how the terms fit into the learning module. The Technical Term Organizer may also be asked to be the Summarizer.

When discussing the new vocabulary identified in the activity, the Technical Term Organizer should **always** refer to the text in order to examine the terms in their context.

Table for recording technical terms

Term	Page # and paragraph	Definition	Reason/plan for discussion



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