

Expert Panel Sample Booklet

Workforce Education Implementation Evaluation

SRI International



Introduction

Welcome to the Expert Panel.

During this session you will rate different qualities of classroom instructional materials gathered from one college. The aim is to characterize in an objective, expert manner what kinds of knowledge and skills are conveyed. You will be using a validated ratings rubric specifically designed for workforce instructional materials.

Thank you for your participation.



How to rate instructional materials using the TECA

- Gather materials to be rated
 - A minimum of three or more “critical” units per course should be selected. “Critical” means a student could not pass the course without understanding the content in those units.
- Each ratings booklet for each critical unit will include the following artifacts:
 - Course-level student learning objectives
 - Course-level syllabus information
 - A textbook chapter overview, if available, relating to that unit
 - Class and homework assignment(s) for that unit
 - Supporting resources for that unit, such as reference materials and photographs of equipment and materials
 - Samples of graded student work on assignments for that unit
 - Samples of graded student assessments for that unit
- Using the sample materials and TECA presentation and guidelines in this booklet, first familiarize 6-8 raters working in pairs with the Technical Education Curriculum Assessment (TECA) (Keiser, Lawrenz, & Appleton, 2004). For the familiarization process, use just one set of sample course and lesson materials
- Once familiarization is done, rating can begin. The TECA may be delivered on paper or through online survey; online survey takes some skill to set up, but can make the ratings review process quicker. (See example on SRI website) Programs have options for the pairs of raters to rate the materials. If this is a process mainly to deepen internal team knowledge, then consensus methods with a few materials may be feasible. If this is a process to provide more formal evidence of quality, programs may want to engage external experts and engage them in inter-rater agreement training with a wider selection of materials; after acceptable agreement levels are attained, the materials to be rated may be distributed among rating pairs to score separately.
 - Consensus methods: All pairs review the materials for each TECA item one at a time, scoring them first separately, and then they discuss how each pair rated the materials for each TECA item until 100% of participants agree.
 - Inter-rater agreement training: All pairs are trained to use the ratings rubric until they reach an acceptable level of agreement (66% per item for 3 pairs of raters; 75% per item for 4 pairs). The goal is to reach acceptable agreement among pairs after a few rounds. Checking agreement involves recording each of the three pair’s ratings for each item. For those where disagreement is greater than acceptable, raters discuss different interpretations of the ratings rules and resolve discrepancies. There are statistical procedures to check reliability of inter-rater agreement, such as Cohen’s kappa.

How to analyze TECA results

- To review how a program's selected courses, review Item 1.1 results to see:
 - How strongly aligned to industry current practice the selected courses' stated SLOs are
 - How well the stated SLOs of the selected courses are reflected in the syllabus and overview chapter
- To compute Instructional Quality and Academic Rigor of lesson materials:
 - Review the overall ratings by computing means according to the following item subscales:
 - The following subscales reflect different aspects of Industry Relevance:
 - Item 16.1 for Overall Industry Relevance
 - Items 3.2, 12.1, and 13.1 for Technical Content Quality
 - Items 8.2, 9.2, and 14.1 for Workplace Skills Quality
 - The following subscale reflects Academic Rigor
 - Items 4.2 and 7.2
 - The following subscale reflects Instructional Quality
 - Items 2.2, 5.2, 6.2, and 15.1
 - The following subscale reflects Assessment Quality
 - Items 10.2 and 11.2
- Note: One useful comparison is to examine these ratings between materials in beginning courses and advanced courses. It helps to clarify to what extent the program is advancing toward transfer-level workplace preparation quality.

This packet will help you to:

- Familiarize raters with the TECA. It focuses on:
 - Rating Technical Relevance of Assignments and Resources
 - Rating Academic Rigor of Assignments and Resources
 - Rating Technical Relevance of Assessments and Student Work
 - Rating Academic Rigor of Assessments and Student Work
 - Assigning Holistic Ratings to Materials
 - Assigning one Overall Quality Rating to Materials
- Organize different sample course materials (of your choosing) and align these materials with different parts of the TECA rating system

Instructions before the Panel

Review the Ratings instrument

Panelists will rate the industry relevance and academic rigor of selected units in workforce education courses using key sections of the Technical Education Curriculum Assessment (TECA), an instrument developed and validated by the University of Minnesota. For convenience, SRI researchers have transformed this ratings instrument into an online Survey Monkey survey. During the ratings session, you will work in pairs with a fellow expert to review the instructional materials according to the TECA criteria, develop a consensus rating, and enter it into the online survey. The segments of the ratings instrument are embedded in this document for your review.

Review the Sample Materials

Read through the materials presented in this packet to get a sense of the different types of course materials you will be using to make each TECA rating. To guide your reading, look for the following in the sample materials:

- How well does the content reflect industry practices and needs for entry-level workers?
- How much opportunity do learners have to apply their knowledge as they would in the workplace?
- How much opportunity do learners have to use realistic workplace technologies and tools?
- How rigorous is the content in terms of mathematics, science, or technological knowledge?
- Do the materials provide learners with a clear picture of the distinction between high-level and low-level work?
- Would you know how to use the materials? If so, how would you use them?
- How much opportunity do learners have to solve problems and how complex are the problems?
- How much opportunity do learners have to communicate in a professional manner and to gather work-related information?
- Do the assessments closely align with the unit's learning objectives?
- How much opportunity is there for students to learn personal qualities important to working in the field?
- How well do the materials reflect the diversity of settings where the technical skills may apply?

Review Criteria: Relevance to Industry

Raters will review the relevance of the instructional materials to industry practices and needs using the following TECA rubric segment and the following materials:

- The college program’s Student Learning Outcomes (SLOs)
- Each course syllabus
- Associated course chapter summaries
- Associated course key terms

Raters should focus on how comprehensive the materials are in addressing the range of knowledge and skills needed for entry-level workers in the field.

I. Alignment of Materials with Workplace

Do the materials reflect accurate industry and professional practices? Yes, Somewhat, No

Do the materials reflect current industry and professional practices? Yes, Somewhat, No

Do the materials reflect anticipated industry and professional practices? Yes, Somewhat, No

Do the materials reflect concepts that are essential to the industry? Yes, Somewhat, No

1. To what extent do the learning objectives align with appropriate industry standards and practices?

NA/DK	0	1	2	3	4
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0: Materials *do not* align learning objectives with appropriate industry standards and practices.

1: Materials are *weak* at aligning learning objectives with appropriate industry standards/practices.

2: Materials are *adequate* at aligning learning objectives with appropriate industry standards/practices.

3: Materials are *good* at aligning learning objectives with appropriate industry standards/practices.

4: Materials are *excellent* at aligning learning objectives with appropriate industry standards/practices.

Student Learning Outcomes

Note: Add program SLOs after this page. These should be from all the courses to be reviewed.



Sample Critical Unit – Syllabus

Note: Insert course syllabus for one critical course that will be used to familiarize raters with the TECA.



Sample Critical Unit – Chapter Overview

Note: Insert content from sample critical unit’s textbook chapter overview.

Review Criteria: Rigor of Technical and Academic Content

Raters will review the technical and academic rigor of the instructional materials for up to three critical units per course. A “critical unit” is one that the instructors identified as containing central content needed to pass the course. Raters will use TECA rubric segments to rate the following materials:

- Assignments, with examples of student work
- Resources, such as PowerPoints for lectures and textbook chapters
- Assessments, such as quizzes, midterms, project rubrics, and final exams

Raters should focus on how well the materials provide an opportunity to learn core knowledge and skills for an entry-level technician. For each of these ratings, raters are encouraged to talk and record their reasons for their ratings in an open-ended box in the online survey. Researchers will be recording key points while listening to rater discussions.

Technical Rigor Criteria for Assignments and Resources

I. Application of Knowledge

Do the materials require students to apply knowledge? Yes, Somewhat, No

Do the materials require students to perform a task? Yes, Somewhat, No

1. To what extent do the materials make students demonstrate the knowledge and skills associated with industry standards and practices?

NA/DK	0	1	2	3	4
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0: Materials *do not* demonstrate knowledge and skills associated with industry standards.

1: Materials are *weak* at demonstrating knowledge and skills associated with industry standards.

2: Materials are *adequate* at demonstrating knowledge and skills associated with industry standards.

3: Materials are *good* at demonstrating knowledge and skills associated with industry standards.

4: Materials are *excellent* at demonstrating knowledge and skills associated with industry standards.

II. Realistic Use of Technology

Do the materials require students to use technology (e.g., tools, equipment, software)? Yes, Somewhat, No

Do the materials explain why technology or certain equipment is used? Yes, Somewhat, No

Do the materials require students to fix or troubleshoot equipment? Yes, Somewhat, No

Do the materials require students to use safety procedures? Yes, Somewhat, No

2. To what extent do the materials use technology? That is, do the materials use technology (e.g., tools, instruments, machines, hardware, software) in the same way as it is actually used in industry practices?

NA/DK	0	1	2	3	4
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0: Materials *do not* use technology in a realistic way.

1: Materials are *weak* at using technology in a realistic way.

2: Materials are *adequate* at using technology in a realistic way.

3: Materials are *good* at using technology in a realistic way.

4: Materials are *excellent* at using technology in a realistic way.

III. Rigorous Content

Are students required to apply rigorous mathematical concepts in new ways? Yes, Somewhat, No

Do the materials require the students to solve problems that require understanding of science content? Yes, Somewhat, No

Do the materials require the students to think critically? Yes, Somewhat, No

Are students asked to apply technological concepts to their work, e.g., Is there a better way to do this? Yes, Somewhat, No

3. To what extent do the materials require students to learn rigorous content such as higher order thinking skills and in-depth understanding of the science, mathematics,

engineering and technological concepts?

NA/DK	0	1	2	3	4
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0: Materials *do not* require students to learn rigorous content.

1: Materials are *weak* at requiring students to learn rigorous content.

2: Materials are *adequate* at requiring students to learn rigorous content.

3: Materials are *good* at requiring students to learn rigorous content.

4: Materials are *excellent* at requiring students to learn rigorous content.

Academic Rigor Criteria for Assignments and Resources

I. Instructional Strategies

Would you know how to use these materials to teach? Yes, Somewhat, No

Do the materials seem adaptable to other situations (e.g., grade, student population or content standard)? Yes, Somewhat, No

Can the activities be used by individuals as well as small groups and large groups of students? Yes, Somewhat, No

Can information be investigated in alternative ways? Yes, Somewhat, No

Can information be presented in alternative ways? Yes, Somewhat, No

4. To what extent do the materials support instructional strategies that actively engage all learners?

NA/DK	0	1	2	3	4
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0: Materials *do not* support effective instructional strategies that actively engage all learners.

1: Materials are *weak* at supporting effective instructional strategies that actively engage all learners.

2: Materials are *adequate* at supporting effective instructional strategies that actively engage all learners.

3: Materials are *good* at supporting effective instructional strategies that actively engage all learners.

4: Materials are *excellent* at supporting effective instructional strategies that actively engage all learners.

II. Problem Solving

Are students required to recognize particular types of problems? Yes, Somewhat, No

Do the materials contain activities that require students to perform multiple steps before arriving at a solution? Yes, Somewhat, No

Do the materials contain activities that require students to collect information or data before making a decision? Yes, Somewhat, No

Are there activities that require students to consider constraints, risks, or alternatives before making a decision? Yes, Somewhat, No

5. To what extent do the materials develop problem solving and critical thinking skills? That is, do the materials encourage students to learn how to approach problems, to think both creatively and analytically, and to make knowledge based decisions?

NA/DK	0	1	2	3	4
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0: Materials *do not* develop problem solving and critical thinking skills.

1: Materials are *weak* at developing problem solving and critical thinking skills.

2: Materials are *adequate* at developing problem solving and critical thinking skills.

3: Materials are *good* at developing problem solving and critical thinking skills.

4: Materials are *excellent* at developing problem solving and critical thinking skills.

III. Integration of General Education Content



Do the materials require students to locate, understand and interpret written information in professional documents, manuals, web sites or books? Yes, Somewhat, No
Are students required to communicate technical concepts verbally, in writing or in visual aides such as charts or graphs? Yes, Somewhat, No

6. To what extent do the materials integrate general education skills such as English, technology, and written and oral communication?

NA/DK	0	1	2	3	4
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- 0: Materials *do not* integrate general education skills.
- 1: Materials are *weak* at integrating general education skills.
- 2: Materials are *adequate* at integrating general education skills.
- 3: Materials are *good* at integrating general education skills.
- 4: Materials are *excellent* at integrating general education skills.

IV. Personal Qualities

Do the materials require students to coordinate their efforts with others? Yes, Somewhat, No
Are there activities or assessments that require students to meet deadlines? Yes, Somewhat, No
Are there opportunities for students to demonstrate individual responsibility? Yes, Somewhat, No
Do the materials contain activities that require students to manage their own behaviors? Yes, Somewhat, No
Do the materials contain activities that require students to set their own levels of personal performance? Yes, Somewhat, No

7. How well do the materials develop personal qualities required for professional employment? These might include character traits, behaviors and attitudes that are needed for personal growth and professional development such as responsibility, self-management and integrity.

NA/DK	0	1	2	3	4
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- 0: Materials *do not* develop personal qualities needed for professional employment.
- 1: Materials are *weak* at developing personal qualities needed for professional employment.
- 2: Materials are *adequate* at developing personal qualities needed for professional employment.
- 3: Materials are *good* at developing personal qualities needed for professional employment.
- 4: Materials are *excellent* at developing personal qualities needed for professional employment.

V. Diversity

Do the materials include examples from a variety of types of workplaces and settings? Yes, Somewhat, No
Do the materials encourage students to understand how to work with people from different backgrounds? Yes, Somewhat, No
Do the materials reflect the growing diversity of the workforce? Yes, Somewhat, No
Do the materials include references that broaden the students' awareness of different cultural and socioeconomic groups? Yes, Somewhat, No

8. To what extent do the materials reflect different work experiences, workers of



different backgrounds, and diverse social settings?

NA/DK	0	1	2	3	4
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0: Materials *do not* reflect diverse work experiences, different backgrounds, or social settings.

1: Materials are *weak* at reflecting diverse work experiences, different backgrounds, or social settings.

2: Materials are *adequate* at reflecting diverse work experiences, different backgrounds, or social settings.

3: Materials are *good* at reflecting perspectives of different diverse work experiences, different backgrounds, or social settings.

4: Materials are *excellent* at reflecting perspectives of different diverse work experiences, different backgrounds, or social settings.

Sample Critical Unit - Resources

Note: Insert unit resources (e.g. key pages of text, reference materials) after this page.

Sample Critical Unit –Assignment

Note: Insert assignment materials (e.g. directions, worksheets) after this page

Technical Rigor Criteria for Assessments

I. Quality Performance

Do the materials provide a variety of examples of professional work? Yes, Somewhat, No

Do the materials contrast high and low quality work? Yes, Somewhat, No

Do the materials discuss specific quality standards or guidelines? Yes, Somewhat, No

1. To what extent do the materials help the learner to distinguish the difference between high quality and poor quality performance?

NA/DK	0	1	2	3	4
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0: Materials *do not* distinguish between low quality and high quality performance.

1: Materials are *weak* at distinguishing between low quality and high quality performance.

2: Materials are *adequate* at distinguishing between low quality and high quality performance.

3: Materials are *good* at distinguishing between low quality and high quality performance.

4: Materials are *excellent* at distinguishing between low quality and high quality performance.

Academic Rigor Criteria for Assessments

II. Assessment

Are the assessments closely aligned with the learning objectives? Yes, Somewhat, No

Do the required activities and assessments have more than one correct answer? Yes, Somewhat, No

Do the assessments provide feedback to the student and an opportunity to improve performance? Yes, Somewhat, No

Do the assessments integrate specific professional or industry skills? Yes, Somewhat, No

Do the assessments allow students to demonstrate their understanding and abilities in different ways? Yes, Somewhat, No

Do the assessments have activities that use real world situations? Yes, Somewhat, No

Do the assessments provide feedback to the instructor that could be used to improve the materials? Yes, Somewhat, No

2. To what extent do the assessments or required activities measure the adequacy of the student's knowledge and skills required in the workplace?

NA/DK	0	1	2	3	4
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0: The assessments do not measure the knowledge and skills required in the workplace.

1: Assessments are *weak* at measuring the knowledge and skills required in the workplace.

2: Assessments are *adequate* at measuring the knowledge and skills required in the workplace.

3: Assessments are *good* at measuring the knowledge and skills required in the workplace.

4: Assessments are *excellent* at measuring the knowledge and skills required in the workplace.

Sample Critical Unit – Sample Student Work

Note: Insert graded samples of student work after this page.

Sample Critical Unit – Assessment

Note: Insert graded student assessments (e.g. quiz, exam, performance task description, or media file) after this page.

Holistic Ratings

- 1. Industry Standards & Practices:** Materials should clearly reflect learning objectives that are based on current business, industry and technology standards and practices.

NA/DK	0	1	2	3	4
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- 0: The materials *do not* reflect any industry standards and practices.
1: The materials are *weak* at reflecting industry standards and practices.
2: The materials are *adequate* at reflecting industry standards and practices.
3: The materials are *good* at reflecting industry standards and practices.
4: The materials are *excellent* at reflecting industry standards and practices.

- 2. Real World Curriculum:** Materials should engage learners in ways to help them understand the reality of the profession they seek. Instruction should be related to workplace needs. Materials should use tasks that are real activities that people perform while “on the job”.

NA/DK	0	1	2	3	4
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- 0: The materials *do not* engage the learner in real world tasks.
1: The materials are *weak* at engaging the learner in real world tasks.
2: The materials are *adequate* at engaging the learner in real world tasks.
3: The materials are *good* at engaging the learner in real world tasks.
4: The materials are *excellent* at engaging the learner in real world tasks.

- 3. Workplace Competencies:** How well do the materials enable students to develop the high performance skills needed to succeed in a high performance workplace? The Secretary’s Commission on Achieving Necessary Skills (SCANS) was appointed by the Secretary of Labor to determine the skills people need to succeed in the world of work. According to the SCANS Report high performance workers need a solid foundation in basic literacy (reading, writing, listening and speaking), computational skills, applying technology, and understanding social organizational and technological systems. They also need thinking skills to put knowledge and resources to work and the personal qualities that make them dedicated, reliable and able to work with others.

NA/DK	0	1	2	3	4
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- 0: The materials *do not* develop workplace skills.
1: The materials are *weak* at developing workplace skills.
2: The materials are *adequate* at developing workplace skills.
3: The materials are *good* at developing workplace skills.
4: The materials are *excellent* at developing workplace skills.

4. Access to In Depth Understanding: How well do the materials allow all learners to acquire in depth understanding? Such practices include instructional strategies that actively engage students and allow them to learn in ways consistent with their preferences. The materials also require students to synthesize, generalize and evaluate information and to develop complex understandings of the content by exploring connections and relationships. In addition, materials that allow access to in-depth understanding are also well organized, easy to follow and contain assessments and activities that are aligned with the content.

NA/DK	0	1	2	3	4
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- 0: The materials *do not* support in depth understanding.
- 1: The materials are *weak* at supporting in depth understanding.
- 2: The materials are *adequate* at supporting in depth understanding.
- 3: The materials are *good* at supporting in depth understanding.
- 4: The materials are *excellent* at supporting in depth understanding.

Overall Ratings

Please rate the effectiveness of the materials in having students learn the knowledge and skills or practices needed to be successful in the technical workplace. Select the description that best characterizes your overall assessment. ***This rating is not intended to be an average of all the previous ratings, but your overall judgment of quality and likely impact of the materials. Please describe the evidence that supports your rating in the space provided.***

To what extent will the materials help students learn the knowledge and skills or practices needed to be successful in the technical workplace?

NA/DK	0	1	2	3	4
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- 0: The materials *will not* help students learn knowledge and skills or practices needed to be successful in the technical workplace.
- 1: The materials *will be weak* at helping students learn knowledge and skills or practices needed to be successful in the technical workplace.
- 2: The materials *will be adequate* at helping students learn knowledge and skills or practices needed to be successful in the technical workplace.
- 3: The materials *will be good* at helping students learn knowledge and skills or practices needed to be successful in the technical workplace.
- 4: The materials *will be excellent* at helping students learn knowledge and skills or practices needed to be successful in the technical workplace.