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TRAIN THE SAFETY TRAINER

BC Construction Safety Alliance (BCCSA)

The BCCSA is an association fully funded by its member companies. The BCCSA's mission is to work in partnership with WorkSafeBC to promote a positive occupational health and safety culture for the construction industry by providing programs and services where employers work together to reduce the human and financial impacts associated with workplace incidents.

Acknowledgements

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Disclaimer

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MODULE 1
INTRODUCTION TO THE TRAIN THE SAFETY TRAINER (TST) COURSE

What is TST?

TST is a one-day course designed to support participants in planning and delivering safety training to adult learners in construction-related settings. Instructional principles, processes, and strategies learned in this course will give you a basis for making sound decisions in safety training settings. This course will support you in developing the practical skills to deliver highly engaging safety training that positively impacts learning, and by extension, workplace safety.

What kind of training will I plan and deliver in TST?

TST focuses on supporting participants in planning and delivering toolbox or other relevant training talks because they are short, targeted, stand-alone training events common in the construction industry. Toolbox talks are only one example of safety training, but the instructional principles, processes, and strategies that guide good toolbox talks are also transferrable to other types of safety training. So, mastering the planning and delivery of toolbox talks will give you a suite of skills to make other types of training you do engaging and impactful for your trainees' knowledge, skills, and attitudes - and for the safety of the workplace.

TST Course Learning Outcomes: What will I learn in TST?

This course will support you in improving your planning and delivery of high-engagement safety training. The principles, processes, and strategies covered in this course represent thousands of hours of experience and research from a wide variety of trainers and adult educators. Successful planning and delivery of training is developed out of practice and experience. The TST course learning outcomes appear below:

At the end of this course, you will be able to:

- Plan training sessions that meet regulatory and legislative requirements
- Select learning activities that achieve stakeholder training goals
- Deliver engaging and impactful training in a workplace context
- Use debriefing and assessment techniques to bring about change in on-the-job work practices

How will I learn it?

In TST, the emphasis of learning will be on developing practical skills for delivering training in the classroom or workplace, with particular focus on on-the-job and local training in small- and medium-sized construction companies. TST uses a learner-centered simulation format. You will be asked to plan and deliver a mini-lesson to your peers who take the roles of "trainees" during your mini-lesson. You will also serve in the role of trainee when others deliver their mini-lessons. After every mini-lesson, those in the role of trainees will complete a feedback form and engage in a mini-lesson debrief, in which the "trainer" and the "trainees" share their insights and suggestions for improvement.

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How will I be evaluated?

Each Train the Safety Trainer (TST) course participant will plan and teach a 10-15 minute mini-lesson: a toolbox talk, or a similar short and focused piece of training. It is important for participants to apply the 7-step TST instructional process and new instructional skills and knowledge – learned that day – in planning and delivering the lesson:

1. **Focus:** Gain trainees' attention, establish the importance of the topic.
2. **Objective:** Describe what trainees will have learned or be able to do by the end of the lesson
3. **Link:** Link the lesson to trainees' existing knowledge and skills. This may include a pre-assessment of a trainee's knowledge
4. **Present new learning**: Core learning of the lesson in which you overview the key points/ideas, demonstrate the new skill
5. **Practice-Feedback:** Trainees engage with the new information or practice the skill with the trainer's and other trainees' support and feedback
6. **Assess:** Trainees show what they have learned
7. **Debrief:** Summarize the learning, link the lesson to future learning, give closure to the lesson

You will be given enough time to understand the seven-step process; plan and get feedback on your lesson plan; and deliver and debrief it. Your lesson is not expected to turn other participants into experts on a particular topic. The emphasis is on training methods which engage people and foster high impact learning. The class environment in TST is supportive and trainee-centered. Seating in the classroom will be arranged so that small groups can work hands-on together throughout the day. Your TST peers will be very supportive during your mini-lesson and the lessons that people deliver are meant to be positive experiences. Active participation in class activities and planning and the successful delivery of a mini-lesson fulfils the completion requirements of this workshop. The measure of success is determined by the ability to integrate all seven steps in the instructional process into a mini-lesson.

Takeaways from Unit 1

1. In this course, you will plan and deliver a high-engagement, 10-15 minute mini-lesson that uses a 7-step TST instructional process.
2. What you do as a safety trainer matters: making safety training engaging positively impacts your trainees' knowledge, skills, and attitudes, and it enhances workplace safety.

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MODULE 2
AN OVERVIEW OF SAFETY TRAINING

In this unit you will be able to:

- Identify three factors that affect trainees' level of engagement in safety training
- Identify three types of training that make up effective safety training programs
- Identify training techniques that result in high engagement

What factors in an organization's safety training contribute to a safer workplace?

Many factors affect the impact of safety training on the learning that people retain from safety training and how much of that learning they transfer to the workplace to make it safer[1].

A simplified model of safety training engagement, learning and transfer (Figure 1) illustrates the factors that safety training programs and trainers can improve so that training positively impacts workplace safety (see Appendix A for full version).

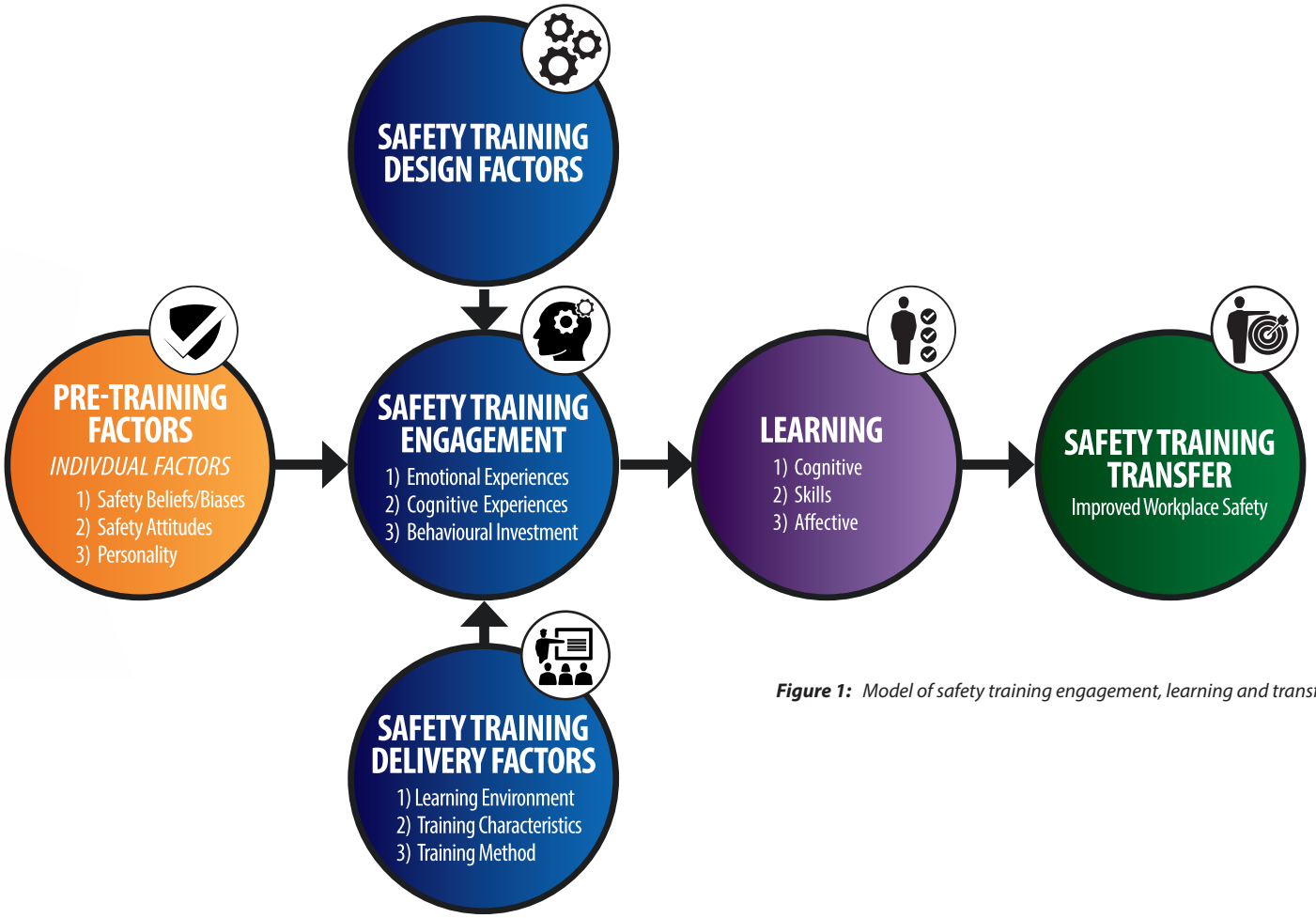

Figure 1: *Model of safety training engagement, learning and transfer*

[1] Article: Making safety training stickier: A richer model of safety engagement and transfer, Journal of Safety Research, 2021, Volume 78, pages 303-313.

As a safety trainer taking TST, you will work on improving your instructional knowledge and skills in order to make safety training "stick" for your trainees. Safety trainers do this by:

1. Designing/planning impactful safety training **(Safety Training Design Factors)**
2. Delivering effective safety training **(Safety Training Delivery Factors)**
3. Meeting trainees where they are at **(Pre-training Factors: Individuals**)
4. Maximizing trainee engagement by doing #1-3 well **(Safety Training Engagement)**

A key word in TST is "engagement". The term *Safety Training Engagement* in Figure 1 means that the trainer harnesses the emotional, cognitive, and behavioural aspects of their trainees to maximize their energy and motivation to do the learning task. The motivation to learn during safety training results in greater retention of knowledge, greater changes in attitudes, and higher intentions to engage in safe work practices. If safety training is going to be successful, trainees need to learn and retain information and master skills – and apply it to their work. Engagement is the fuel that makes this possible.

Safety Training Design Factors | What types of training make safety training effective?

Effective safety training programs typically have three types of training: orientations, on-the-job training, and ongoing training (Figure 2). These vary in terms of audience, purpose, duration, and location, but together they enhance employees' potential to work safely on the job.

ORIENTATIONS	• General safety orientations (e.g., company health & safety program) • Site-specific orientation (e.g., site tour, other contractors on site)
ON-THE-JOB TRAINING	• Hands-on, step-by-step training focusing on how supporting workers in learning and doing specific tasks (e.g., using fire extinguishers)
ONGOING TRAINING	• Training focusing on continual improvement, refreshing of workers knowledge, skills (e.g., first aid, training on new equipment)

Figure 2: *Types of Training in Effective Safety Training Programs*

TST focuses on planning and delivering a mini-lesson - a toolbox talk or a similar short piece of training - in order to develop the knowledge and skills needed to positively impact trainees' learning and apply it to the workplace. Toolbox talks (aka toolbox meetings, tailgate talks) are a significant part of ongoing training and workplace communication (Figure 2). Much is known about what makes safety training engaging and impactful in the workplace, but this will be revisited in Unit 3, which discusses the features of effective toolbox talks.

TST does not go into depth about designing training (see BCSSA's LSE course); however, Figure 3 shows a general process for designing safety training that can provides direction for further study beyond this TST course.

Figure 3: *Process for Designing Safety Training*

1. **Assess the need for training**. Is training the right response? Perhaps an employee simply requires some additional job aids (e.g., procedural information such as standard operating procedures) to perform safely. If there is an unwillingness to comply with safety procedures, then perhaps one-on-one counselling may be a better response to the problem.
2. **Write learning outcomes for the training**. Usually, the objective is expressed in terms of "performance" that specifies exactly what you want the learner to be able to do with that new knowledge or skill.
3. **Develop a lesson plan** that describes, step by step, how you plan to instruct the topic.
4. **Develop aids and resources to assist the training**. Some of these aids might be taken away by the employee and used on the job following the training.
5. **Deliver the training**. Schedule the training at an appropriate time and place and inform trainees of upcoming training topic and purpose. Conduct the training.
6. **Assess the impact**. Follow up the training to ensure that learners retain the knowledge or transfer the training to the job,

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Safety Training Delivery Factors | What training methods engage learners?

As seen in Figure 1, the amount of learning that trainees take away from safety training and apply to the workplace depends on how training is designed/planned and delivered according to trainees' needs to maximize the level of engagement trainees experience. This is supported in the safety training research: 95 safety training studies involving 20,000+ workers show that engagement is a key factor in effective training that translates to workplace safety[1]. The impacts of three categories of training methods on the knowledge and skill acquisition and behavioural change in workers are shown in Figure 4.

HIGH ENGAGEMENT	• Hands-on training, simulation, behavioural modelling • 3 times the impact compared to low engagement methods
MODERATE ENGAGEMENT	• Programmed instruction techniques such as computer-based instruction, feedback techniques • 1.5 times the impact compared to low engagement methods
LOW ENGAGEMENT	• Lectures, films, video-based training: 'Hear' and 'see' activities • Some impact compared to no training: "Better than nothing!"

Figure 4: *Categories of training methods & their impacts on knowledge, skill acquisition and behavioural change.*

The impact of safety training methods on engagement and learning (Figure 4) may relate to your past experiences as a trainee. For example, perhaps a trainer you had in the past talked AT you for long periods of time. What kind of engagement, learning, and transfer of learning did this lead to? Trainers can boost engagement by using ideas from the learning sciences covered in Module 4 and using the 7-step instructional process covered in Module 5.

[1] Article: Related effectiveness of worker safety and health training methods. American Journal of Public Health, 2006, Volume 96, Issue 2, pages 315-324.

Pre-training Factors | What individual factors do trainees bring to the table that impact learning?

Trainees bring three individual factors to any safety training context that significantly impact their engagement with learning and their capacity to apply new knowledge and skills to the workplace[1] (Figure 5).

SAFETY BELIEFS/BIASES "How the world works"	**SAFETY ATTITUDES** Positive or negative evaluations of a safety-specific object, action, or person	**PERSONALITY** Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism (OCEAN)
• Beliefs about how safety should be handled in an organization • Beliefs about what constitutes a safety hazard • Beliefs about own locus of control in making the workplace safe **Why important?** Deep-seated beliefs (biases) are a handbrake on learning	• Engaging in a particular safety practice • Using a safety tool or process • Judging safety personnel **Why important?** Attitudes affect trainee's intention to fully engage in training and to apply the learning to the workplace	• Safety training exists in a strong regulatory/compliance environment and has moral overtones. **Why important?** Personality affects how "trainable" someone is: Conscientiousness positively affects engagement and transfer; Openness positively impacts ability to accept feedback, change work practices

Figure 5: *Individual factors that affect engagement with and transfer of safety training*

If safety trainers anticipate and plan for individual factors in Figure 5, they can increase engagement and impact learning. For example, understanding trainees' safety beliefs/biases and attitudes can help trainers design and deliver safety training that engage them in ways to increase learning and application. Additionally, biases can be challenged if trainees are made to encounter information or experiences in training that do not match their idea of "how the world works". As another example, an early "safety training readiness" module using survey items can help trainers understand trainees' attitudes towards safety so they can deliver training that reduces the trainees' resistance to safety training. Consider how your trainees would answer the following survey[2,3,4] and how you might use their responses to pitch training differently.

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[1] Article: Making safety training stickier: A richer model of safety engagement and transfer, Journal of Safety Research, 2021, Volume 78, pages 303-313.

[2] Article: The effects of error management climate and safety communication on safety: A multi-level study. *Accident Analysis and Prevention*, 2010, Volume 42, pages 1498-1506.

[3] Article: The impact of organizational climate on safety climate and individual behaviour. *Safety Science*, 2000, Volume 34, pages 99-109.

[4] Article: The one that got away: Lessons learned from the evaluation of a safety training intervention in the Australian prawn fishing industry. *Safety Science*, 2018, Volume 108, pages 218-224.

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SURVEY: SAFETY BELIEFS, BIASES, AND ATTITUDES

1	I avoid talking about safety issues with my supervisor. (Safety attitude: Communication with boss)				
	☐ STRONGLY DISAGREE	☐ DISAGREE	☐ NEUTRAL	☐ AGREE	☐ STRONGLY AGREE
2	I am unable to change unsafe practices at work. (Safety belief: Locus of control)				
	☐ STRONGLY DISAGREE	☐ DISAGREE	☐ NEUTRAL	☐ AGREE	☐ STRONGLY AGREE
3	Although errors occur and accidents happen, we can't let go of the final goals of the project we're on. (Safety attitude: Error management)				
	☐ STRONGLY DISAGREE	☐ DISAGREE	☐ NEUTRAL	☐ AGREE	☐ STRONGLY AGREE
4	I see safety training as a "ticky box" exercise. (Safety attitude: Value of training)				
	☐ STRONGLY DISAGREE	☐ DISAGREE	☐ NEUTRAL	☐ AGREE	☐ STRONGLY AGREE
5	My coworkers say things like "This is the way we do things around here!" when safety is discussed at work. (Safety belief: Deep-seated belief/bias)				
	☐ STRONGLY DISAGREE	☐ DISAGREE	☐ NEUTRAL	☐ AGREE	☐ STRONGLY AGREE
6	I often help coworkers when they are working under risky or hazardous conditions. (Safety attitude: Locus of control)				
	☐ STRONGLY DISAGREE	☐ DISAGREE	☐ NEUTRAL	☐ AGREE	☐ STRONGLY AGREE
7	I think it's important to maintain safety at all times. (Safety attitude: Practices and procedures)				
	☐ STRONGLY DISAGREE	☐ DISAGREE	☐ NEUTRAL	☐ AGREE	☐ STRONGLY AGREE
8	I've been on the tools for decades and don't make mistakes, so I know when I need to put on PPE and when I don't. (Safety belief: Deep-seated belief/bias).				
	☐ STRONGLY DISAGREE	☐ DISAGREE	☐ NEUTRAL	☐ AGREE	☐ STRONGLY AGREE

Takeaways from Unit 2

1. Engagement is the fuel that drives trainees to learn new knowledge, skills, and attitudes - and apply them at work.
2. Three factors maximize engagement and learning:

    i) designing/planning impactful safety training,

    ii) delivering effective safety training, and

    iii) meeting trainees where they are at.
3. Many familiar safety training techniques (e.g., lectures, video-based training) can lead to low engagement, low knowledge/skill acquisition and low behavioural change.
4. If trainers understand trainees' safety beliefs, biases, and attitudes and personalities, they can pitch safety training to maximize trainees' learning

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MODULE 3
AN OVERVIEW OF TOOLBOX TALKS

In this unit you will:

- Define the term "toolbox talks" (aka toolbox meetings, tailgate talks)
- Identify typical toolbox talks topics
- Explain the purposes and timing of toolbox talks
- Describe the characteristics of effective toolbox talks

Discussion

1. What kind of safety talks do you do at your workplace? Can you describe an example?
2. Toolbox talks are one kind of safety talk that we focus on in this course. In groups of about four, discuss the following questions and write down some short answers.

1. What are toolbox talks?	
2. Why do we toolbox talks?	
3. When should we do toolbox talks?	
4. How can you make toolbox talks effective?	

What are toolbox talks?

Toolbox talks are short training sessions held on worksites before work or during breaks to address health and safety issues. They typically last about 10-15 minutes and focus on site-specific topics that are relevant to the immediate worksite that can be fully discussed in the limited amount of time available. The term "toolbox" refers to the tools and equipment used in a specific job, which emphasizes the practical and hands-on nature of these talks. Doing toolbox talks provides regular, practical opportunities to put safety in the foreground of workers' awareness as they perform their daily tasks. Within safety training programs, they are a major component of ongoing training and communication on the worksite.

During toolbox talks, supervisors or safety personnel engage with workers to discuss potential hazards, safe work practices, and relevant safety procedures. Toolbox talks often combine formal instruction of specific and relevant knowledge, skills, attitudes, and/or behaviours with informal trainee-centered learning through engagement and interaction. This allows people to make memorable connections between their experiences and workplace safety. The goal is to enhance awareness, share information, and encourage active participation in maintaining a safe working environment. Topics covered may range from the proper use of equipment and Personal Protective Equipment (PPE) to emergency response protocols and hazard identification.

Overall, toolbox talks play a vital role in meeting training responsibilities and building a safety conscious culture within organizations and among workers. They foster communication, collaboration, and a collective commitment to safety. Regular and consistent use of toolbox talks contribute to reducing accidents, injuries, and near misses by ensuring that everyone on the team is informed about the latest safety guidelines and has the knowledge and skills to carry out their tasks safely. Toolbox talks reinforce what they already know and provides them with concise, informative, and effective instruction on key safety topics that relate to their duties.

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What are some examples of toolbox talks?

OHS research and industry best-practices give a sense of the range of possible topics for toolbox talks. National Institute for Occupational Safety and Health (NIOSH) research based on injury and mortality statistics in the US construction industry identified the following eight safety training topics as having a high impact on workplace safety[1]:

- Falls from roofs
- Falls from extension ladders
- Falls from equipment or loads (e.g., forklifts)
- Falls through holes in roofs and floors
- Electrocutions: Overhead power lines and boom cranes
- Deaths or injuries from equipment failure, improper tool use
- Deaths from crushing: Building materials, structural collapse
- Deaths from mobile machinery (e.g., skid-steer loaders)

Common hazards like these vary by construction subsector, trade, project, and project stage. This means that any safety training program needs to be responsive to the work context. For example, hazard assessments can be used to make proactive decisions on the toolbox talk topics needed. Workplace inspections and incidents can also determine the training needed as corrective action to prevent or reduce further incidents.

Table 1 is a list of topics that have been found relevant across the construction industry. Samples of BCCSA toolbox talks are found in Appendix D.

TABLE 1 | POSSIBLE TOOLBOX TALKS

Responsibilities, rights, obligations	Ladders	Formwork
Team responsibilities	Scaffolding	Floor coverings
Workers' rights	Fall protection	Compressed gas cylinders
Company rules	Rigging and hoisting	Falling objects
Personal Protective Equipment	Rigging hardware	Securing loads
Eye Protection	Crane hand signals	Emergency response
Hearing protection	Tag lines	Emergency drills
Respiratory protection	Trenching	First aiders
Head protection	Soil types	First aid kits
Hand protection	Protection (sloping, boxes)	Fire extinguishers
Fire retardant clothing	Excavator hand signals	Vehicles
WHMIS	Techniques and tools	Walk around/pre-use inspection
Hazardous products on site	Housekeeping	Backing up
Labels	Hand tools	Traffic control
Safety Data Sheets	Electric tools	Hazards
Working at heights	Powder actuated tools	Site/job specific toolbox ralks
Guardrails/toe boards	Propane	

[1] Article: Evaluation of toolbox safety training in construction: The impact of narratives. American Journal of Industrial Medicine, 2018, Volume 61, pages 997-1004

How do toolbox talks fit into employers' Occupational Health & Safety (OHS) responsibilities?

Toolbox talks are one way for employers to deliver on their Occupational Health and Safety responsibilities to provide training to ensure the health and safety of workers. The Workers Compensation Act (WCA)[1] Part 2, Division 4, Section 21, 2 (e) states the general duties of employers to provide safety training:

> *(An employer must) provide to the employer's workers the information, instruction, training and supervision necessary to ensure the health and safety of those workers in carrying out their work and to ensure the health and safety of other workers at the workplace*

The WCA is the basis for specific employers' and safety supervisors' OHS responsibilities and due diligence requirements that can be met through training. Documenting safety training and toolbox talks and keeping records up-to-date serve as evidence of due diligence.

In addition, the Workers Compensation Act (WCA)[2] Part 2, Division 4, Section 23, 2 (a, i) states:

> *(A supervisor must) ensure that the workers under the supervisor's direct supervision are made aware of all known and reasonable, foreseeable health or safety hazards in the area where they work*

Beyond meeting OHS requirements, safety training such as toolbox talks bring additional benefits:

- Makes your workforce more flexible by preparing workers to do different jobs.
- Increases productivity by reducing waste, damage, and time lost to correcting errors. A "safety aware" workforce is more productive and more profitable.
- Improves work quality. It teaches people how to use and maintain tools properly, and the performance standards for each job they do.
- Improves morale by building worker confidence and raising job satisfaction. The result is less worker turnover, reducing costs of finding, orienting, and training new hires.

When should toolbox talks be conducted?

The timing of toolbox talks depends on the company work schedule. It is best to schedule the same day every week at a time that does not conflict with work conditions. Tuesdays or Wednesdays tend to be good days, but Mondays and Fridays are less desirable. Morning sessions are best because employees are awake, but just before lunch or close to quitting time are not. Toolbox talks are short – 15 minutes or less. If kept up over time, they can result in a reduction of accident rates through improved knowledge and safety consciousness.

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[1] Workers Compensation Act. Part 2 Division 4 Section 21 2 e. **https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/workers-compensation-act/part-2-occupational-health-and-safety#SectionNumber:Part2Div4Sec21**

[2] Workers Compensation Act. Part 2 Division 4 Section 23 2 a i. **https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ workers-compensation-act/part-2-occupational-health-and-safety#SectionNumber:Part2Div4Sec23**

Toolbox talk topics should be directly related to issues and practices that affect an employee's ability to work in a safe and secure manner. Topics should also be timely and relate to the particular situation on the ground so that they have maximum impact:

- When a certain task has to be performed that has not been done in a long time
- When new people join the crew
- When a task has specific hazards involved, such as work around utility lines
- When new hazards arise
- When work tasks change over the life of construction projects
- When work has to be performed around water
- When work is to be done at elevation
- Whenever there is vehicular traffic involved
- If there has been an accident on the job or a "near miss"
- When new regulations require training of employees
- When the employer feels that workers have become careless or lax in their approach to safety
- When any conditions indicate the need

What are the characteristics of effective toolbox talks?

Effective toolbox talks share five key characteristics that contribute to their success in promoting workplace safety because they enhance buy-in and maximize the engagement needed for the retention and application of knowledge and skills[1].

TABLE 2 | CHARACTERISTICS OF EFFECTIVE TOOLBOX TALKS

RELEVANCE & SPECIFICITY Does the toolbox topic fit the job?	Toolbox talks need to be relevant and specific. They should address real and current hazards relevant to the work activities that participants will undertake. Specificity ensures that the purpose of a toolbox is clear and the information provided to workers is specific rather than general. Providing specific information and allowing time for participants to ask questions makes it more likely that workers will apply it in their work.
INTERACTIVITY & INCLUSIVITY Do all participate during the toolbox talk?	Toolbox talks should be interactive and inclusive. Engaging trainees through discussions, interaction, demonstrations, and hands-on activities fosters active participation and makes learning memorable. Encouraging open dialogue, participation, and diverse ideas helps all to contribute their knowledge, build comprehensive understandings of risks and share the responsibility for safety.
PRACTICAL APPLICATION Do trainees get opportunities to demonstrate their learning?	Effective toolbox talks provide practical guidance on applying safety measures. In particular, it is essential that any training related to high-risk activities has a practical component. When safety trainers are prepared and offer clear demonstrations, examples, and actionable steps, it enables workers to implement the safety practice in their day-to-day work. Effective training programs always provide opportunities for workers to participate, to practice, and to show what they have learned.
REGULARITY & CONSISTENCY Is learning from toolbox talks built and reinforced over time?	Toolbox talks need to be regular and consistent. Consistent and regular delivery of toolbox talks on a weekly or bi-weekly basis is crucial to reinforce safety practices and contribute to the integration of these practices into daily routines.
MEASURABLE OUTCOMES Do toolbox talks result in learning and transfer of learning?	Toolbox talks should have measurable outcomes. This is essential for supporting trainees in learning and applying their knowledge and skills. During toolbox talks, trainers can use assessment techniques - such as observation and feedback - to check progress and reteach so that workers get the target skills/knowledge. After toolbox talks, trainers can verify knowledge by questioning participants or having them demonstrating their skills. Finally, tracking safety incidents/near misses and testing understanding of safety protocols can show if toolbox talks have impacted workplace safety.

[1] Article: Conducting effective tailgate trainings. Health Promotion Practice, 2009, Volume 10, Number 3, pages 359-369.

By incorporating these characteristics, organizations can maximize the impact of toolbox talks on making work environments safer. These characteristics for toolbox talks can also be applied to other forms of safety training overviewed in Figure 2.

Where can I find resources for toolbox talks?

Toolbox talks and resources can be found in the links below:

BCCSA Toolbox Talks
https://www.bccsa.ca/Toolbox-Talks-.html

WorkSafeBC Resource Toolbox
https://www.worksafebc.com/en/health-safety/hazards-exposures/combustible-dust/resourcetoolbox

OHS (Alberta) Health and Safety Topics
https://ohs-pubstore.labour.alberta.ca/health-safety-topics

SCSA (Saskatchewan) Toolbox Talks
https://scsaonline.ca/resources/tool-box-talks

CSAM (Manitoba) Toolbox Talks
https://www.constructionsafety.ca/resources/downloads/

IHSA (Ontario) Safety Talks
https://www.ihsa.ca/resources/safetytalks.aspx

NIOSH Construction Toolbox Talks
https://www.cdc.gov/niosh/construction/toolboxtalks/default.html

National Safety Council (NSC, US) Work Safety Topics (Not For Profit Organization)
https://www.nsc.org/workplace/safety-topics

CDPH Tailgate Training Materials (California)
https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/Pages/BuildSafe.aspx#cards

OHSU Toolbox Talks (Oregon)
https://www.ohsu.edu/oregon-fatality-assessment-control-evaluation/construction

Takeaways from Unit 3

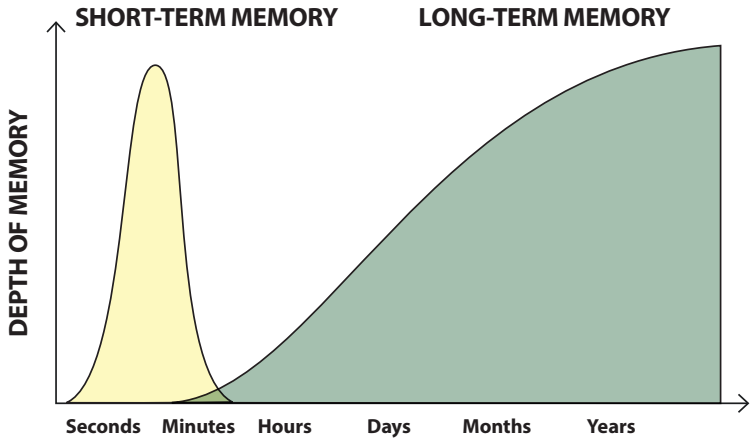
1. Employers are responsible for ensuring that workers have the training and instruction needed to ensure the health and safety of workers as they carry out their work.
2. Workers have the right to be trained/participate in training and should not be expected to complete tasks unless they have the training relevant to those tasks.
3. Effective training programs provide opportunities for workers to participate, practice, and show what they learned. In particular, any safety training related to high-risk activities needs to have a practical component.
4. Workplace inspections, workplace incidents, and hazard assessments can be used to identify toolbox talk topics and other training needed to prevent or reduce safety incidents.
5. Toolbox talks need to be relevant, specific, interactive, inclusive and practical. They need to address real and current hazards relevant to work activities. This makes it more likely that workers will apply what they learn on the job.
6. Toolbox talks need to be done on a regular and consistent basis to reinforce knowledge, skills, and attitudes.
7. Toolbox talks need to have measurable outcomes.
8. Documenting safety training and toolbox talks and keeping records up-to-date serves as evidence of due diligence.

MODULE 4
THE LEARNING SCIENCES & SAFETY TRAINING

In this unit you will:

- Explain how applying concepts from the learning sciences can improve safety training.

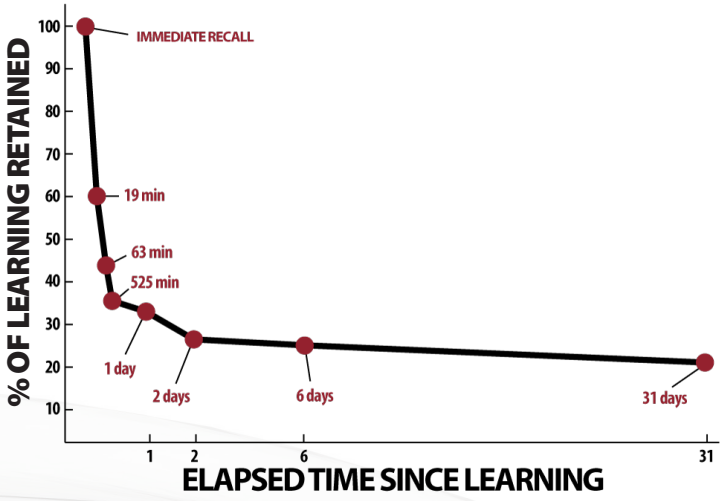
Our role as trainers is to make sure that new learning moves from trainees' short-term memory to their long-term memory. What we do as trainers should foster long-term retention of knowledge and skills.



So, how do you get stuff that is in the short-term memory to stick in the long-term memory? That is where the Learning Sciences can help us as trainers.

Learning Science Example #1: The Retention Curve

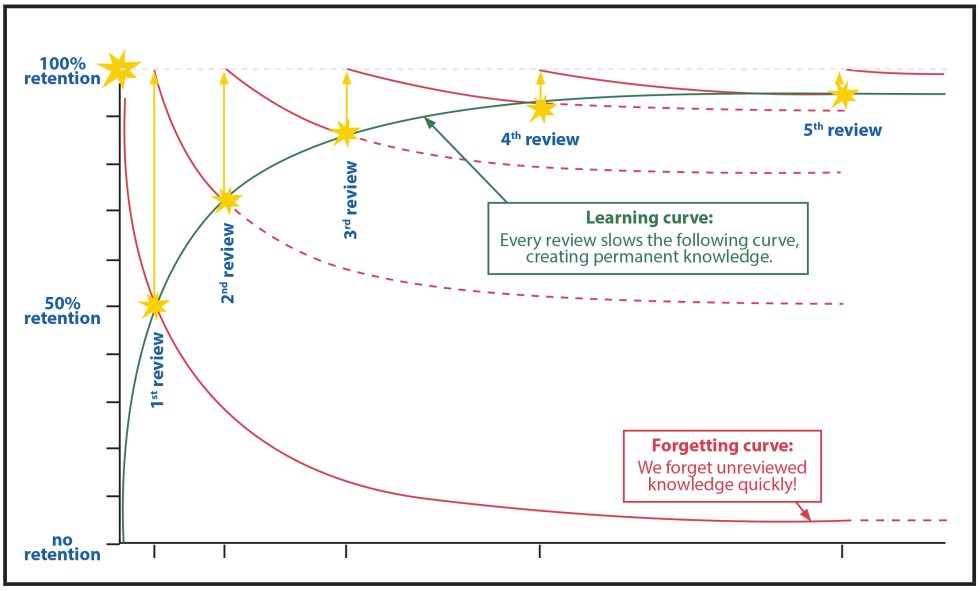
The picture below is Herman Ebbinghaus, a German philosopher who pioneered studies in memory. He found that the more times people spend reviewing and practicing new learning (rehearsal), the more they retain (retention).



His retention curve shows that after learning something new, time goes by - 10 minutes, 63 minutes, 9 hours, one day, 2 days, 6 days, and 31 days - and the amount you remember falls off. In the end, you only retain about 20%. So, what do trainees and trainers do about this?

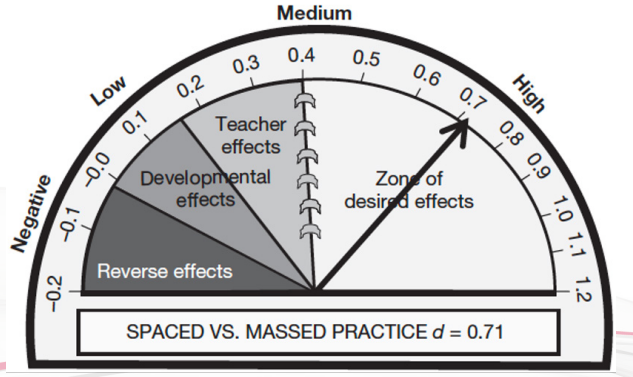
Learning Science Example #2: The Power of Review

Learning science research shows that learning something effectively is not about spending a lot of time learning something in one sitting. People learn better when they take multiple short opportunities to review, rehearse, or practice skills or knowledge over many days. This process is shown below:



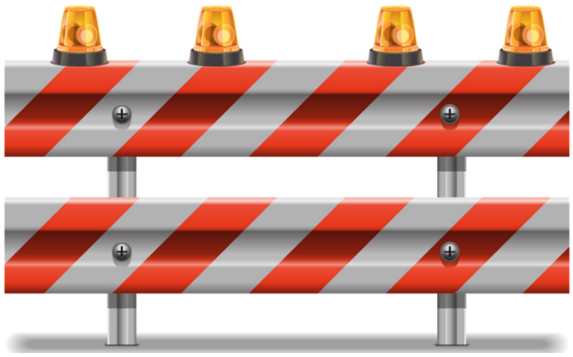
The first red (forgetting) curve shows that, without review, retention drops off. But if you do a first review of what you learned, you can pull your retention back up to 100% AND you start on a new retention curve. If you do a second review, your recall goes up to the top again. You are now on yet another new curve. A third, fourth, and fifth review solidifies the learning in your long-term memory.

Spending a lot of time learning in one sitting - such as "cramming" all night before a test - is not effective. It is better to have multiple, deliberate and varied types of review to solidify learning. Other learning science research shows that across 63 studies, this kind of "spaced practice" beats "massed practice" (cramming) hands down. The 0.71 on the diagram is the effect size of this learning technique. If the average score on a test is 70% - and test takers' scores are evenly distributed on either side between 40-100%, then someone who studies using the "spaced practice" technique would score around 77.1%!



Learning Science Example #3: Barriers to Learning

In many training situations, learning does not even start in the first place - it gets switched off.



This is sometimes because trainers create barriers for trainees. It may also happen because trainees have barriers because of how the brain works, or attitudes that go against learning.

Look at this great example of barriers to learning:

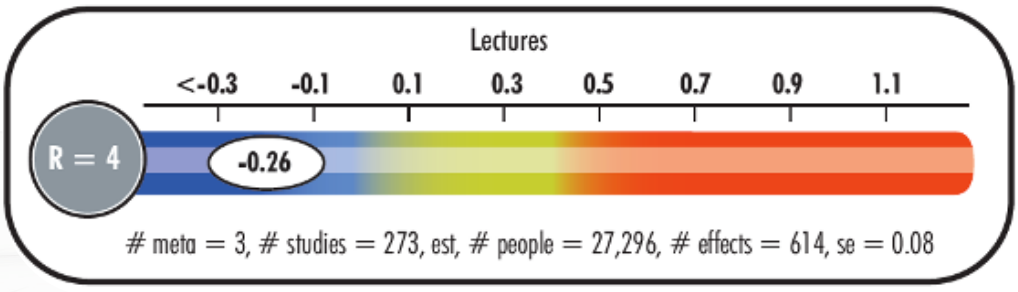
Maybe you smiled or laughed at the comic or recognized the situation? Why? Maybe because you know that saying:

"I said I taught him. I didn't say he learned it."

is the same as saying:

"I sold them a car, but they just didn't buy it!".

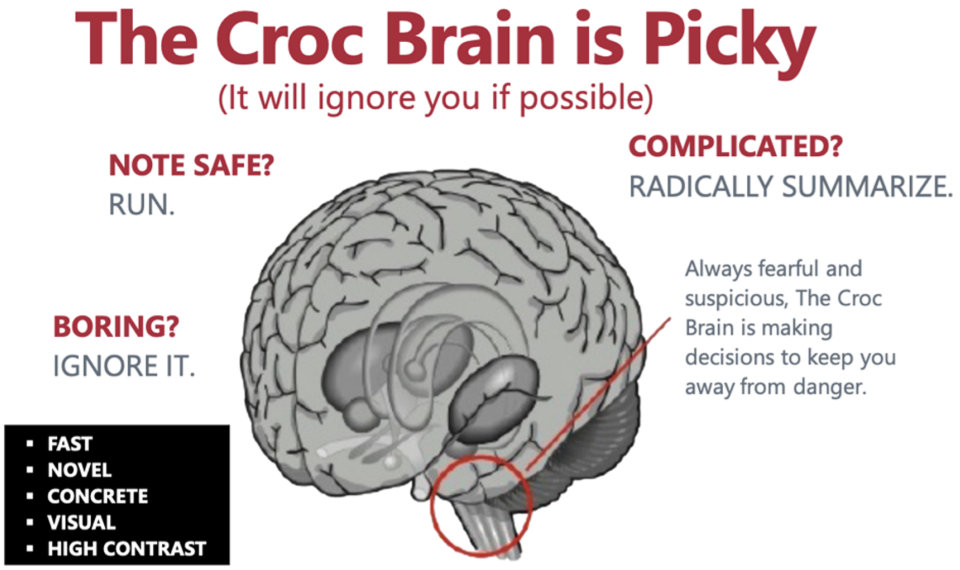
If you think about it, there is no such thing as effective teaching in the absence of learning. Teaching without learning is just TALKING! Learning sciences research shows that "talking at" or lecturing people does not work. Look at the negative effects lecturing has on learning:



So, an important job for us as trainers is to remove barriers that exist for our trainees because of what WE do! But we also see trainees with so many barriers that it is hard for them to learn anything. Trainees' barriers may exist because of how the brain works or because of their habits, attitudes, and biases. We will take a look at a fascinating barrier that is hard-wired into humans: The Croc Brain.

Learning Science Example #4: Barriers to Learning - The Croc Brain

The Croc (crocodile or reptilian) Brain is a catchy image for the parts of the brain that are responsible for basic survival functions such as the "fight or flight" response. The Croc Brain is a combination of systems connected to the brain stem that unconsciously detect threats, regulate physiology, and select defensive actions. The Croc Brain automatically keeps you out of danger:

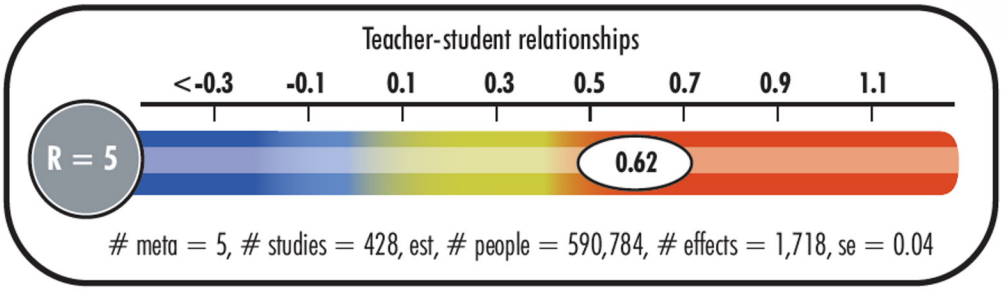


The Croc Brain keeps you out of danger, but it can also create barriers to learning. This is common for trainees with negative experiences in school such as sitting through boring material, being punished for being active in class, or hating having to admit that they don't know something. Learning can be a hazardous activity - and when it is, The Croc Brain acts to put humans in a "Survival State" so they can avoid danger. Knowing this, trainers need to figure out how to sneak by the Croc Brain by "creating safety" in the learning environment. Trainees will only be ready to learn when the answer to the question "Am I safe?" is a clear "YES!"

Learning Science Example #5: Barriers to Learning - Emotion and Learning

Other systems in the brain are central to emotion and create potential barriers to learning: the amygdala, insula, hippocampus, and prefrontal cortex. These systems continuously evaluate whether the environment is supportive or threatening, including whether one is socially accepted and valued. When trainees feel cared for and socially secure, these networks reduce threat signaling and put humans in the "Emotional State" needed for memory formation, attention, and cognitive flexibility. Without this sense of emotional safety, the brain prioritizes protection over learning, making deep understanding and transfer less likely.

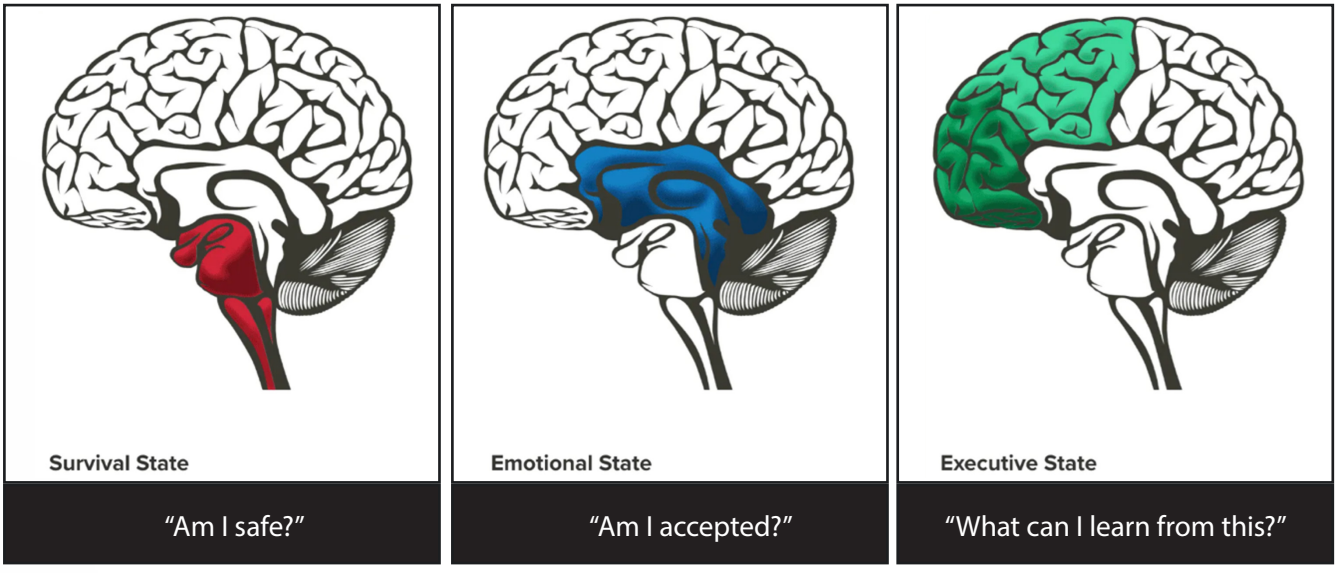
Learning science research supports the role of emotional safety to learning. Across 428 studies with 591,000 people, the trainer-trainee or teacher-student relationships were significant to achievement - with an effect size of 0.62:



So, it is the trainer's job to "create connection" in the learning environment and answer the question "Am I accepted/respected?" with a clear "YES!"

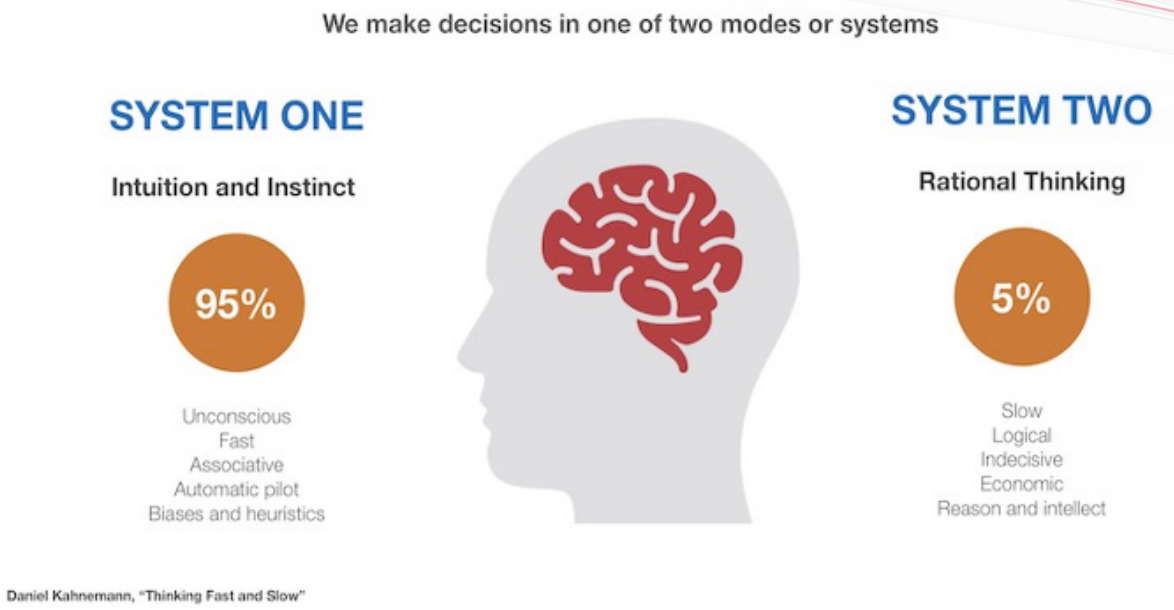
The lesson for trainers from Learning Science Examples #3-5 might sound complicated, but it isn't. The brain simply needs certain types of information in a certain order. That way, you can:

1. Get past the gatekeeper (The Croc Brain): "I'm safe."
2. Induce an emotional state that supports learning (Emotional State): "I'm accepted."
3. Engage them in the target learning (Executive State): "What can I learn from this?"



Learning Science Example #6: Thinking Fast and Slow and Safety

Have you ever observed someone doing something unsafe because "they have always done it this way"? Daniel Kahneman's research (see the Veritasium video "The Science of Thinking") suggests that people rely on two systems of thinking when making decisions. Fast thinking - often called System 1 - is automatic, intuitive, and effortless. It helps learners respond quickly, recognize familiar patterns, and navigate routine tasks, but it also relies on shortcuts and assumptions. Fast thinking shows up when trainees or workers guess answers, rely on memorization, or accept information at face value without questioning it. While efficient, this system is prone to errors and misconceptions, especially when learners encounter new, complex, or counter-intuitive ideas.



Slow thinking - System 2 - is deliberate, reflective, and effortful. It requires sustained attention and conscious reasoning, such as analyzing a problem, evaluating evidence, or revising an initial answer. Learning—particularly deep understanding, transfer, and critical thinking—depends on engaging this slower system. Although slow thinking requires more effort and can feel uncomfortable, a way for us to challenge assumptions, integrate new knowledge, and develop expertise. For this reason, effective training must create conditions that encourage learners to pause, reflect, and engage in slow thinking rather than relying solely on quick, automatic responses.

Discussion

Select one of the six learning science examples and be ready to explain it to a partner:

- Explain the main concept in one of the learning science examples.
- Illustrate the example with something you've noticed as a trainer.
- Suggest one technique related to the example that trainers might use in safety training.

Takeaways from Unit 4

1. Our role as trainers is to make sure that new learning moves from the trainees' short-term memory to their long-term memory.
2. Trainees can use frequent rehearsal to make learning stick in the long-term memory.
3. Trainers can provide opportunities for review and rehearsal to make learning stick in trainees' long-term memory.
4. Teaching without learning is just talking.
5. Make trainees feel safe (i.e., sneak past the Croc Brain). Make them feel accepted. Then it's showtime!
6. Trainers need to create conditions that encourage learners to pause, reflect, and engage in slow thinking rather than relying solely on quick, automatic responses.

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MODULE 5
PLANNING SAFETY TRAINING

In this unit you will:

- Apply a seven-step process in planning a toolbox talk
- Select instructional strategies for your own toolbox talk
- Satisfy documentation and record-keeping requirements for external stakeholders

What instructional process can maximize engagement and learning in safety training?

The following seven-step process contains the key elements that trainers need to plan and delivery good training of any kind. In this unit, we will apply this process to plan a toolbox talk or similar kind of training.

STEP	EXPLANATION	TRAINEES THINK....
1. FOCUS	Gain attention, establish importance	"**Wait!** What's that?" "**Why** do I need it?"
2. OBJECTIVE	Point of the training	"**What** will I learn?"
3. LINK	Link to trainees' existing knowledge /skills; pre-assessment	"Can I handle this?"
4. PRESENT NEW LEARNING	Overview ideas / demonstrate skill	"Show or tell me more."
5. PRACTICE-FEEDBACK	Trainees practice, improve w. trainer support	"I'm improving."
6. ASSESS	Trainees show what they know	"I got it."
7. DEBRIEF	Summarize, link to next learning, give closure	"I can transfer/build on it."

This section of the course asks you to select a safety topic from a list of topics provided by your instructor. Then you will be asked to instruct the topic to other workshop participants.

Your task in this section of the course will be to use the handouts in the Appendix D and E to:

1. Select a topic that you will support your peers to learn.
2. Set a limit on the amount of the material that you will use so that it complies with the time that has been made available for your lesson (10- 15 minutes).
3. Prepare the lesson by completing one of the lesson plan forms.
4. Conduct the lesson.
5. Receive feedback on the lesson.

Your Role as an Observer during the Mini-lessons

When not conducting training in this course your role becomes that of trainee participating in and observing other trainers' mini-lessons. As an observer you can provide a great deal of valuable information to the trainer who conducts the lesson. Trainers rarely get the opportunity to hear about the effectiveness of their training directly from their trainees. It is even less seldom that our trainees are also fellow trainers who are prepared to share observations and experience.

As you observe each mini-lesson, hold the following questions in your mind during and take notes when the lesson is complete. Within the 7 steps of the instructional process ….

1. ***What worked? What did the trainer do that helped you to learn?***
2. ***What didn't work? Is there something the trainer could do better next time to help you learn?***

Step 1 | Focus

Did the trainer get my attention or capture my interest? How?

Step 2 | Objective

Was the objective stated out loud?/Was the objective explained?

Step 3 | Link

Did the trainer assess what I knew about the topic and/or link the topic to my experiences? How?

Step 4 | Present new learning

Did the trainer demonstrate a new skill or present new ideas in an engaging way? How?

Step 5 | Practice-Feedback

What did the trainer do to get me actively involved? / Did the trainer provide feedback on their work? How?

Step 6 | Assess

Did I get a chance to demonstrate my skill or knowledge? How?

Step 7 | Debrief

Was there a sense of completion of the lesson? / Was the learning summarized at the end of the lesson?

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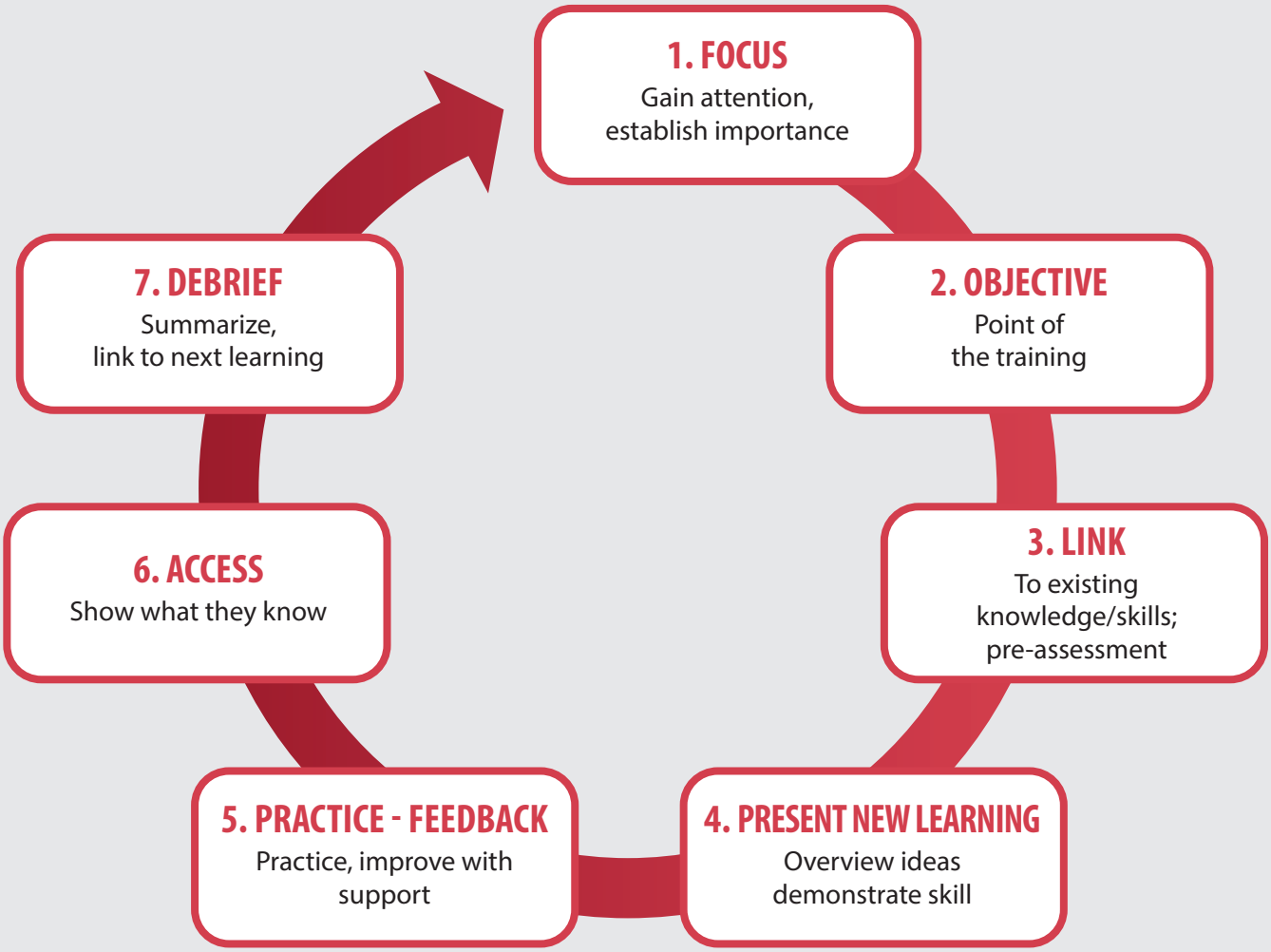
Takeaways from Unit 4



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MODULE 6
DEVELOPING A LESSON PLAN (COGNITIVE FOCUS)

In this unit you will:

- Describe how a trainer approaches planning a cognitively-focused lesson
- Identify features of an effective lesson plan in the context of the seven-step instructional process

Cognitively focused lessons and learning typically involves the instruction of:

- Information
- Facts
- Ideas
- Rules
- Problem solving

Cognitive learning comprises a large percentage of training in safety. Learning objectives in the cognitive domain can be set at six different levels from remember (simplest) to create (most complex).

An Insider View of Planning a Toolbox Talk (Cognitive Focus)

Step 1 | Focus (Gain attention, establish importance)

This step opens the session and sets the stage. Traditionally, trainers assumed that everyone is motivated to learn. However, you need to get participants' attention and awaken their interest.

Consider the following approaches:

Tip 1 | Ask questions

- "Has anyone here ever been in a fire? What went through your mind?"
- "Have you ever considered why…… "
- "Has anyone here ever thought about…?"
- "Can anyone here explain to the rest of us…?"

Tip 2 | Appeal to their self-interest

- Let them know why there is "something in it for me".
- Link the training to a reward structure, if there is one.
- Link training to recognized values or priorities: safety, company policies, government requirements.

People want to learn and participate if they see its importance. People accept learning that is personally significant.

Step 2 | Objective (Inform trainee of objective)

Trainees learn better and are more attentive if they know from the start what the lesson is about and what is expected of them. State what the session is about and what you expect trainees to be able to do with that new knowledge or skill. For example: "Today we will be looking at extinguishing fires. At the end of the session, you will be able to select the appropriate fire extinguisher for different types of fires."

Step 3 | Link training (Link to trainees' existing knowledge / skills)

Find out what trainees know about the topic – or what their experiences are - by asking simple, direct questions. Shape your questions to fit the day's topic and to explore their experience. Use this information to serve as a link to the session:

- What are some of the problems around extinguishing fires?
- When you come across a fire, what is the first thing you need to know?
- Do you know the location and types of extinguishers in this building?
- Has anyone ever been at a fire scene that got out of control?
- How many of you know how to determine the kind of fire extinguisher to use?

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Step 4 | Present new learning (Overview ideas / demonstrate skill)

In Steps 4 ad 5, the body of the lesson is constructed using active learning tasks. In the table below, the key learning task relates to identifying the basic element of combustion, which relates to the learning objective (trainees will be able to select the appropriate fire extinguisher for the type of fires). Notice that the learning task, trainer activity, and resources are all match each other.

LEARNING TASKS (Key Points - pinpoint)	INSTRUCTOR ACTIVITY (Questions to Ask – steps to take)	RESOURCES (Picture It - visuals)	TIME
1. Identify basic elements of combustion • heat • fuel • oxygen	• Ask learners to identify three elements of combustion	• Fire triangle on Flip Chart	1 min

In a step-by-step process the trainer takes learners through the new material, posing questions and explaining throughout. The plan should include what trainers and trainees are doing.

Step 5 | Practice-Feedback (Trainees practice, improve with trainer support)

After presenting the new information or demonstrating a procedure, give learners time to practice. Observe and provide feedback on their skills development. Re-teach or repeat a demonstration as needed.

LEARNING TASKS (Key Points - pinpoint)	INSTRUCTOR ACTIVITY (Questions to Ask – steps to take)	RESOURCES (Picture It - visuals)	TIME
3. Identify four classes of fire	• Ask learners to turn to neighbour and identify the four classes of fuels on the flip chart • Ask for fuel group names • Ensure that group identifies Class A, B, C and D correctly. Use flip chart	• Flip chart paper with four letters A, B, C and D	3 min

You can see how this trainer does this in the Instructor Activity column.

Step 6 | Assess (Trainees show what they know)

In this session, the trainer uses the following steps to check if students achieved the objective:

1) Place trainees into groups of two.

2) Give trainees a set of 12 index cards each with a different type of fuel.

3) Give each group a set of four cards labelled Class A, B, C and D.

4) Ask each group to sort the fuel cards into one of the four classes.

5) Check each team's groupings. Discuss and clarify.

Do not overlook this step. If you simply ask trainees if everything is clear or if they understand, most will nod their heads to indicate that there is "no problem". This is not assessment – it is a recipe for ineffectiveness. You have to check their active understanding or skill level. Otherwise, you have no idea whether the training has had an impact. Whatever way you use to check that the group "got it" make sure it is consistent with how you instructed and practiced during the session.

Step 7 | Debrief (Summarize, link to next learning, give closure)

This step is frequently missed by even the most experienced trainers. They frequently say something like the following at the end of the session: "Well, looks like time is up. We'd better get back to work".

An important learning opportunity is lost when this happens. Make sure main ideas or steps of a process are remembered. Ask for a summary of key points, or link the day's session to the next one if possible. Have trainees go away secure in their knowledge and how it relates to the bigger picture.

In this session, one way to do this is to ask the group the following:

- What are the three elements of combustion?
- What are the different types of fuel?
- What are the different types of extinguishers?
- Which extinguisher is for carbon-based fire? For chemical fires? For electrical fires?

One way to link this session to the next learning is to announce that trainees are going to practice using fire extinguishers next time.

Finally, two tips for closing the day's session include:

- Ask the group if there are any questions, wait for 5-7 seconds to allow them time to think.
- Ask the group how this information can be used on the job.

Remember……

- Closure and assessment are not the same thing.
- Assessment ensures that trainees are able to put the new knowledge and skills to work as outlined in the objective.
- Closure helps trainees put the information into memory and creates a mental link between the day's topic and what is to come.

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Lesson Plan Example: Fire Safety (Cognitive Focus)

Objective (Pinpoint Topic)

To be able to select the appropriate fire extinguisher for different types of fires.

Focus, Link the learning (Questions to find out what crew knows about topic)

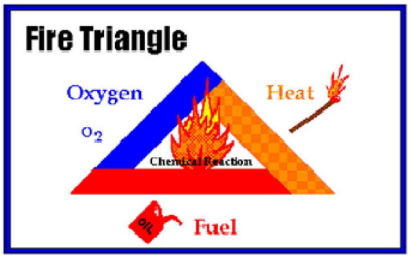
Has anybody been in a fire? How did you feel? Did you know how to put it out safely?

1. What are the different types of fire sources?
2. Why is it important to distinguish the source of fire?
3. What will happen if we use the wrong fire extinguisher to put out a fire?

LEARNING TASKS (Key Points - pinpoint)	**INSTRUCTOR ACTIVITY** (Questions to Ask – steps to take)	**RESOURCES** (Picture It - visuals)	**TIME**
1. Identify basic elements of combustion • heat • fuel • oxygen	1.1 Ask learners to identify three elements of combustion	1.1 Fire triangle on Flip Chart	1 min
2. Identify basic elements of combustion • heat • fuel • oxygen	2.1 Link lesson to triangle and emphasis on fuel. 2.2 Ask learners to identify different types of fuel. Group responses on flip chart.	2.1 Flip Chart	2 min
3. Identify four classes of fire	3.1 Ask learners to turn to neighbour and identify the four classes of fuels on the flip chart 3.2 Ask for fuel group names 3.3 Ensure that group identifies Class A, B, C and D correctly. Use flip chart	3.1 Flip chart paper with four letters A, B, C and D	3 min
4. Identify four types of fire extinguishers: • carbon fire • chemical fire • electrical fire • metal fire	4.1 Ask learners to turn to neighbour and identify the four classes of fuels on the flip chart 4.2 Ask for fuel group names 4.3 Ensure that group identifies Class A, B, C and D correctly. Use flip chart	4.1 Extinguisher or picture	3 min

Assess (Check to ensure participants got it.)	**TIME**
• Give learners a set of 12 index cards each with a different type of fuel. • Give each group a set of four Cards labelled Class A, B, C and D. • Place crew into groups of two. Ask each group to sort the fuel cards into one of • the four classes. • Check each team's groupings. Discuss and clarify.	2 min

Debrief (Identify action to take)	TIME
Ask group following: • What are the three elements of combustion? • What are the different types of fuel? • What are the different types of extinguishers? • Which extinguisher is for carbon-based fire? • For chemical fires? • For electrical fires? • For metal fused fires? Link to next toolbox meeting. Use of fire extinguisher.	1 min



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Post Lesson Activity

Analyze the lesson plan on "Fire Safety" to identify the following components

1. What is the opening for this session? How will the trainer get the group's attention?
2. What is the objective? What does it do?
3. What will the trainer find out about the group's existing knowledge?
4. Why does the trainer want that information?
5. What kind of media will the trainer use?
6. What will the trainer do to ensure participants used the knowledge?
7. How will the trainer ensure that the group is competent?
8. How will the trainer close the session?

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MODULE 7
DEVELOPING A LESSON PLAN (SKILLS FOCUS)

In this unit you will:

- Describe how a trainer approaches planning a skills-focused lesson
- Identify features of an effective lesson plan in the context of the seven-step instructional process

In skills-focused lesson, the training of physical, motor skills and procedural process relies primarily upon the use of instructor demonstration and modelling. The instructor must provide clear, coherent and systematic performance of physical skills and processes in order for learners to grasp how a skill is created in muscle and sequence movements. A skills-focused lesson also requires the explanation of procedures: trainers must "tell and show" a number of times in order for learners to create a mental model of the skill that guides subsequent performance and practice.

An Insider's View of Planning a Toolbox Talk (Skills Focus)

Unit 5 walked you through how a trainer developed a lesson plan for a cognitively focused lesson. The week that followed, trainees were going to learn how to use fire extinguishers, which focuses on physical motor skills and demonstration technique. This kind of toolbox talk has a skills focus.

The Demonstration Technique

The trainer-led demonstration involves modeling the skill to the trainees. It is suitable for the:

- Mastery of skills
- Development of process and procedural skills
- Development of interpersonal techniques and communication skills

The trainer-lead demonstration technique involves the following steps, and aligns with the seven-step instructional process:

1. Outline the purpose and objective of the demonstration. (Focus > Objective > Link training)
2. Provide a short explanation of what is going to happen. (Present the new learning)
3. Perform the demonstration at standard speed. (Present the new learning)
4. Repeat the demonstration a second time at a slow, step-by-step pace. Provide explanations and commentaries while performing the second demonstration. (Present the new learning)
5. Lead the demonstration a third time. This time the learners follow along and perform the demonstration with the instructor. (Practice-Feedback)
6. Provide opportunity for independent practice until skills are fluid. Provide feedback to learners during this important part. (Practice-Feedback)
7. Assess the skill. (Assess)
8. Debrief the learning (Debrief)

Steps in Planning a Demonstration

Planning a skill-focused session comes with some unique considerations, requirements, and tips

Requirements for Effective and Safe Demonstration/Learning

- Trainer proficient at skill
- Trainees have the pre-requisite skills to succeed
- Process broken into "chunks" – learnable steps of process
- Located in safe environment with all safety measures in place
- "Lines of sight" are clearly established and maintained so learners can see
- The physical setting is prepared in advance:
    - Set-up demonstration table and equipment as required
    - Lay out needed tools in order of use
    - Identify potential hazards
    - Ensure all required safety measures are in place and are working properly
    - Prepare any instructional aids to accompany demonstration

Characteristics of Effective Instruction

- Systematic process
- Clear, observable demonstration
- Paced to provide good comprehension of process
- Accompanied by trainer narration/explanation
- The demonstration proceeds slowly and methodically so all can understand
- The instructor assists individuals or subgroups as they practice
- Feedback is given to all learners as they practice the demonstrated skills
- The instructor models safe performance
- Provides multiple repetitions of performance. Three demonstrations prior to learner practice if possible

The sample lesson plan that follows focuses on trainees learning how to jump start a vehicle with a dead battery safely.

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Lesson Plan Example: Jump Starting a Dead Battery (Skills Focus)

Objective (Pinpoint Topic)

Jump-start a vehicle with a dead battery safely.

Focus, Link the learning (Questions to find out what crew knows about topic)

- *What are some personal dangers involved in jump-starting a dead battery?*
- *What are some hazards to vehicles that can happen during jump starting a battery?*
- *Who has jump-started a vehicle before?*
- *Anyone experienced a problem when jump starting a vehicle?*

LEARNING TASKS (Key Points - pinpoint)	INSTRUCTOR ACTIVITY (Questions to Ask – steps to take)	RESOURCES (Picture It - visuals)	TIME
1. Perform jump start procedure in real time			5 min
2. Identify safety hazards • Explosion • Acid • Damage to vehicles	2.1 What are some dangers associated with jumpstarting? 2.2 What kind of damage can occur to vehicle by improper jump-starting?	• Batteries • 4 pairs of battery cables • Goggles • Gloves	10 min
3. Identify safety measures • Avoid sparks • Don't jump frozen batteries • Don't jump damaged batteries • Wear eye protection • Flush skin immediately if contacted by battery acid	3.1 What are at least 4 safety steps to take		10 min
4. Identify Steps to prepare vehicles jump-starting a vehicle:	4. Demonstrate and explain		5 min
4.1.1 Pull vehicles close together but not touching			2 min
4.1.2 Turn off both ignitions			2 min
4.1.3 Identify positive and negative battery terminals			2 min
4.1.4 Connect positive clamp to dead battery positive then connect other positive clamp to positive terminal (post) of starting one.			2 min
4.1.5 Connect negative clamp to negative (post) in starting vehicle			2 min
4.1.6 Connect other negative clamp to metal structure of vehicle you will start (ground)			2 min
4.1.7 Ensure all cables are clear of moving parts in both vehicles			2 min

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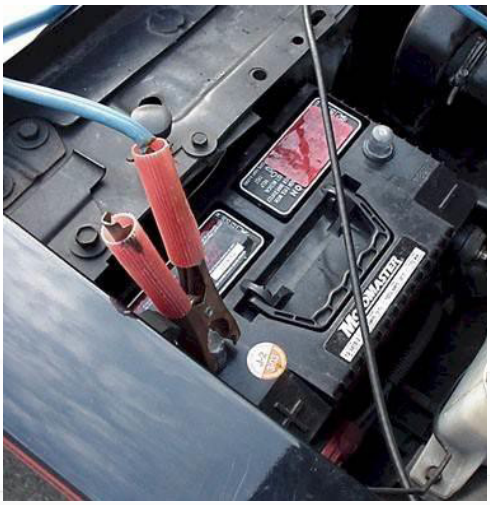
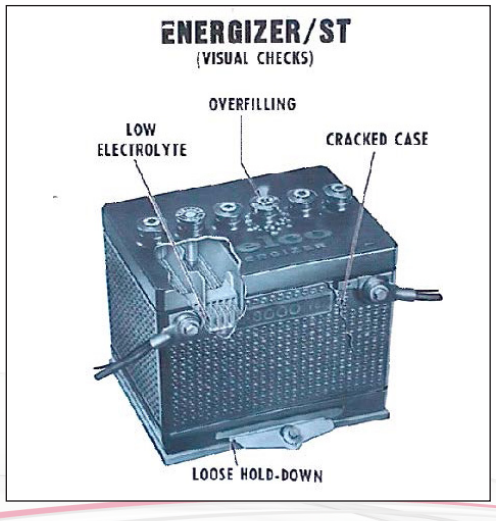
LEARNING TASKS (Key Points - pinpoint)	INSTRUCTOR ACTIVITY (Questions to Ask – steps to take)	RESOURCES (Picture It - visuals)	TIME
5. Demonstrate preparation of vehicles	5. Pair learners & ask them to prepare vehicle		5 min
6. Start car with live battery and try to start vehicle with dead battery			10 min
7. Remove cables ASAP in this order: • Negative clamp on car frame. • Negative clamp on starting battery • Positive clamp on starting battery. • Positive clamp on jumped battery.	7. Begin sequence of removal of cables demonstration		3 min
7.2 Ensure all cables are removed & stowed before moving vehicle			5 min
8. Practice entire process	8. Pair learners to practice set-up, start and removal of cables		15 min

Assess (Check to ensure participants got it.)	TIME
Observe learners who demonstrate procedure to group and determine if acceptable. Provide feedback	5 min

Debrief (Identify action to take)	TIME
Ask for summary of key points to remember when jump starting a battery: • Dangers • Safety procedures • Process	5 min





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MODULE 8
DEVELOPING A LESSON PLAN (AFFECTIVE FOCUS)

In this unit you will:

- Describe how a trainer approaches planning an affective-focused lesson
- Identify features of an effective lesson plan in the context of the seven-step instructional process

Affective learning involves developing new attitudes, values or beliefs. A significant part of the human mind is concerned with feelings and emotions. Emotions give rise to our beliefs, which in turn subtly shape our behaviour. For example, in safety training it may be necessary to change participants' attitudes before they comply with regulations. If so, then you need to consider how to structure training so that the new value or attitude will be accepted and adopted.

Affective Domain Hierarchy: An Example

This lesson example focuses on the importance of lockout procedures. While doing a lockout procedure is certainly a skill, it can also be viewed as a value because the involves stimulating appreciation in the trainee for the safety value of this and similar procedures. This outcome of training can be approached at different levels.

Level | Receiving (lowest)

At this stage, the learner becomes aware of the existence of a value, attitude or belief.
The learner may not practice the procedure. But he or she listens or becomes aware of its existence.

Example: Listening to a point of view that advocates always checking and following lockout procedure without disagreeing.

Level | Responding

At this stage, the learner begins to accept the belief as valid. The learner sees that the value has merit.

Example: After listening to opinions about the procedure, the learner feels that there may be enough merit in the procedure to warrant looking into the issue more completely. The learner may be willing to admit that concern about the failure to follow procedure has some basis.

Level | Valuing

At this stage, the learner accepts the value or practice as valid and expresses commitment to follow it.

Example: The learner begins to discuss the importance of the procedure with co-workers.

Level | Organization

The learner now integrates the value into his set of values. He makes a commitment to the value by working to encourage adoption of the value by others. His or her own personal behaviour begins to conform to the value.

Example: The learner personally follows procedure on every occasion.

Level | Characterization (highest)

The learner's behaviour is now fully consistent with the value. At this level, the learner is firmly committed to the new value. He acts in accordance with this belief.

Example: The learner explains to new employees the value of the procedure and trains them in its use.

During this Train the Safety Trainer, objectives at the first two levels are realistic to use (receiving and responding). Real change starting at level three (valuing) and on to organization and characterization require substantial amounts of time.

Writing Objectives in the Affective Domain

There are two parts to most affective objectives: an information component and a process component which when combined constitute the affective objective. Here are some examples of affective objectives.

Examples include:

- Recognize the importance of fire safety
- Adopt a positive attitude toward the employer
- Participate constructively in a work team
- Respond positively to people of different cultures and customs
- Respect opinions that differ from one's own
- Share an emotionally charged incident that caused you distress
- Mediate a dispute among family members
- Comply with safety precautions at the work site
- Adopt a proactive stance toward a local environmental issue

These types of objectives constitute the 'soft' side of education and training. They represent, however, important outcomes necessary for change.

An Insider's View of Planning a Toolbox Talk (Affective Focus)

Learning Task Analysis in the Affective Domain

Creating learning tasks for affective objectives provides an additional challenge. Change happens but it frequently occurs more as the result of experience rather than the product of logic or new information. Instructors must develop a process that provides some form of experience by which the learner will sense the new value or belief differently. Some characteristics of learning tasks in this domain include:

1. New information is nearly always provided.
2. Learners experience an event so that it challenges existing ideas or beliefs.
3. There should be some problem or dilemma that the learner experiences in the lesson.
4. The process should lead to reflection by the learner about one's prior beliefs or attitudes.
5. Principles for Teaching and Learning in the Affective Domain below.

Principles for Teaching and Learning in the Affective Domain

1. Create an atmosphere of trust.
    a. Make learners feel relaxed.
    b. Bring group closer together and from behind tables.
    c. Assure them that the day's lesson will ask them to think about the topic, not compel them to agree.
2. State objective in a way that stimulates interest without compromising purpose of lesson (change). State the topic "ladder safety" rather than the objective "follow regulations for safe ladder use" if you think it will help learners consider the topic without reacting.
3. Provide information that may be new to the learner.
    a. Provide a new message or one that differs from their usual belief.
    b. Provide data or statistics that help people to consider a topic from a new perspective.
    c. Provide a point of view or someone's experience that the learner may not have considered previously.
4. Use discussion at the group level to encourage sharing of ideas and experience.
    a. Ask learners to consider a problem and discuss.
    b. Ask learners to explain to each other how they feel and why.
    c. Set up groups with divergent points of view to discuss question.
5. Provide the opportunity for learners to 'feel' the new value or belief from a new point of view.
    a. Use videos of people who represent the value.
    b. Invite guest speakers who represent or model the value.
    c. Employ 'role-playing' for students to experience an opposing point of view or a situation.
6. Provide genuine dilemmas for learners to resolve.
    a. Use current issues for learners to consider.
    b. Ensure more than one value is represented in the interpretation of a dilemma.
    c. Ensure that learner views represent for more than one opinion.
    d. Provide for reflective consideration of alternate forms of resolution.

7. Provide genuine examples for learners to engage in.
    a. Provide examples from your own experience.
    b. Cite examples of people who have confronted and overcome their own negative beliefs or values.
    c. Use exemplary people who can talk about the internal process of change and how it was accomplished.
8. Culminate instruction with disclosure.
    a. Ask participants to describe how they felt during a role-play or simulation.
    b. Ask learners to reveal the nature of their internal conflicts.
    c. Pose questions that ask learners to explain whether they have gained additional insight into the belief or value.
    d. Ask learners if they can see the importance of the new value.
    e. Ask for statements of willingness to act.

Instructional Techniques in Affective Learning

Affective learning requires that learners experience the new value or attitude in the emotional realm. This enables learners to feel the value or belief in ways other than rational, logical thinking. For learners to "experience" the attitude or belief that is taught, instructors must construct lessons that place the learner into the context or situation that is typical of the value. Affective learning uses techniques that enable the learner to:

- Sense what it is like to live or work life from someone else's perspective.
- Hear a contrary point of view without reacting to it.
- Look at a problem, conflict or issue from a new point of view while withholding judgement.
- Adopt the value, if only temporarily, to sense what it is like to work in accordance with it.
- Receive new information that enhances their prior understanding.

Case Study

Case studies are an instructional strategy that may assist you in creating this affective learning experience. Cases are one of the oldest training techniques. A 'case' is a story that recreates the complexity of real-life problems complete with people, incomplete information and serious repercussions for poor decisions. A case study begins when information describing a real-life situation is presented to group members who analyze all aspects of the problem and offer solutions. The study may be analyzed by either individuals or groups. A case study is an effective technique for:

- Learning from real situations and experiences.
- Highlighting real problems and conditions which complicate theoretical models.
- Stimulating learners to analyze problems, generate solutions and courses of action.
- Provoking thought about the inter-relationship of personalities, skills and events in shaping situations.
- Enabling learners to see that there is a variety of courses of action in each situation, some may be better than others.

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Instructor's Role in Case Studies

The instructor prepares the case study by recording a situation factually, accurately and objectively. Information to be included in the case should describe the following:

- The history of the situation
- The people involved (as roles and not real identities)
- The relationships among those involved
- The economic factors involved (if applicable)
- The educational factors involved (if applicable)
- The tension or issues which constitute the problem or decision to be made
- Any relevant social, behavioural or managerial component, which must be dealt with

Participants' Roles in Case Studies

- Read and listen to the case study
- Analyze the case to determine the issues to be addressed
- Determine why the problem exists
- Determine what information might assist in understanding the situation and resolving it
- Develop a number of solutions and select the best one
- Assist others in the group

Case Study Process

In order to maximize the value of the Case Study as a learning tool, it is useful to take the learner systematically through the following steps:

- Determine the central problem
- Recognize the limits to action and resources available
- Determine the personality factors and dynamic which affect the case
- Create alternative courses of action
- Determine and evaluate consequences of the possible courses of action
- Decide on one best course of action
- Explain and defend a recommended solution

Within the toolbox talk format, cases must be quite short. However, even a short case requires a central problem or dilemma for the students to consider.

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Lesson Plan Example: Safe Skid-Steer Loader Operation (Affective Focus)

Objective (Pinpoint Topic)

Describe the value of following safe procedures when operating a skid-steer loader.

Focus, Link the learning (Questions to find out what crew knows about topic)

1. *Has anyone had to contact a co-worker's family who was injured on the job?*
2. *What is the most common form of accident associated with a skid-steer?*
3. *Has anyone here been formally trained in operation of the skid-steer?*
4. *What are some common dangers associated with this type of loader?*
5. *What are a few good rules to follow when operating this machine?*

LEARNING TASKS (Key Points - pinpoint)	INSTRUCTOR ACTIVITY (Questions to Ask – steps to take)	RESOURCES (Picture It - visuals)	TIME
1. Ensure pre- assessment is done	1.1 Pose question #4 and list on flip chart or board 1.2 Pose question #5	• Sketch of skid- steer	5 min
2. Identify safety hazards • Explosion • Acid • Damage to vehicles	2.1 Handout cases and rules 2.2 Give each individual a case (max 5) or pair and assign 2.3 Ask group to analyze case for cause of accident and refer to safety procedure violated 2.4 Get each group to report 2.5 Note safety violation on board or flip chart and discuss -- ask for suggestions	• Safe operating rules (handout #1) • Cases (handout #2)	10 min

Post-Assess (Check to ensure participants got it.)	TIME
Ask each learner to describe in his or her own words a new personal commitment to safe operation of skid-steer. (handout #3)	2 min

Prescribe (Identify action to take)	TIME
Ask learners to make connections between safe operation of skid-steer and other related equipment on site	3 min

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HANDOUT #1 | Safe Operating Procedure for Skid-Steer Loaders

1. Operate Skid Steer from operator's compartment only.
2. Stay seated when operating.
3. Always wear a seat belt.
4. Keep arms, legs and head inside cab when operating loader.
5. Load, unload and turn on level, stable ground.
6. Travel and turn with bucket in lowest position.
7. Do not travel across slopes loaded.
8. When loaded, travel straight up or down slope with heavy end pointed uphill.
9. Never disable safety devices.
10. Keep bystanders or crew away from work area of machine.
11. Lower bucket to ground, set brake and turn engine off before exiting loader.
12. Ensure backing signals (lights and horn) are in good operating condition.
13. Provide safety signs and hazard instructions to operators when appropriate (during both operations and maintenance).
14. Always position bucket on ground or use safety devices (pins or posts) when shutting down the loader.
15. Maintain cab integrity and provide two means of exit.

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HANDOUT #2 | Accident Case Reports

Read each of the following accident descriptions and identify the safe operating procedure(s) that was not followed in each case.

1. The operator was using the skid-steer loader to haul dirt between two levels of a project site. There was an incline of 5% between levels. The loaded bucket was pointed downhill as the machine backed up the ramp with the bucket elevated three feet off the ground. As the skidsteer approached the top of the ramp, the loader overturned. The operator jumped free of the machine as it overturned but landed on nearby rocks. He broke his arm in the fall.
2. An operator was moving soil in cold conditions and snow. He leaned outside the loader to clear off frozen snow and ice from the lift arms. As he leaned out from the cab, he accidentally hit the lift arm control and was pinned by the descending arms. Quick action by a crewmember who raised the arms enabled the victim to be removed and rushed to hospital.
3. An operator turned off the skid-steer and exited the cab to remove mud that had accumulated under the bucket. The operator left the bucket elevated in order to clean off the packed mud. He used a shovel to remove the mud, and as he was cleaning, the bucket suddenly fell crushing the operator. The individual was pronounced dead at the scene of the accident.
4. A skid-steer was being used to remove fence posts. The fence line was located on a 20% slope. The loader was positioned facing downhill with the bucket un-loaded. A chain was attached to each post and the bucket was raised to remove the post. As the operator was lifting the arms to pull a post, the machine slipped forward and the operator quickly lowered the bucket to stabilize the machine. At the same time the labourer, who had been standing next to the loader, slipped and fell in the path of the falling bucket. The bucket hit the labourer in the chest.
5. An operator was spreading topsoil for re-seeding. The victim was approaching a six-foot retaining wall while loaded. As he backed towards the wall with the bucket lowered depositing the soil on the ground, first the right rear wheel slipped over the wall followed by the left wheel. The loader landed on its side. The victim was not wearing his seat belt at the time, but remained inside the cab. The operator was severely injured.

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HANDOUT #3 | Post Assessment Activity

1. One safety rule I became aware of today is…

2. As a result of today's session, I will make sure when operating a skid steer that…

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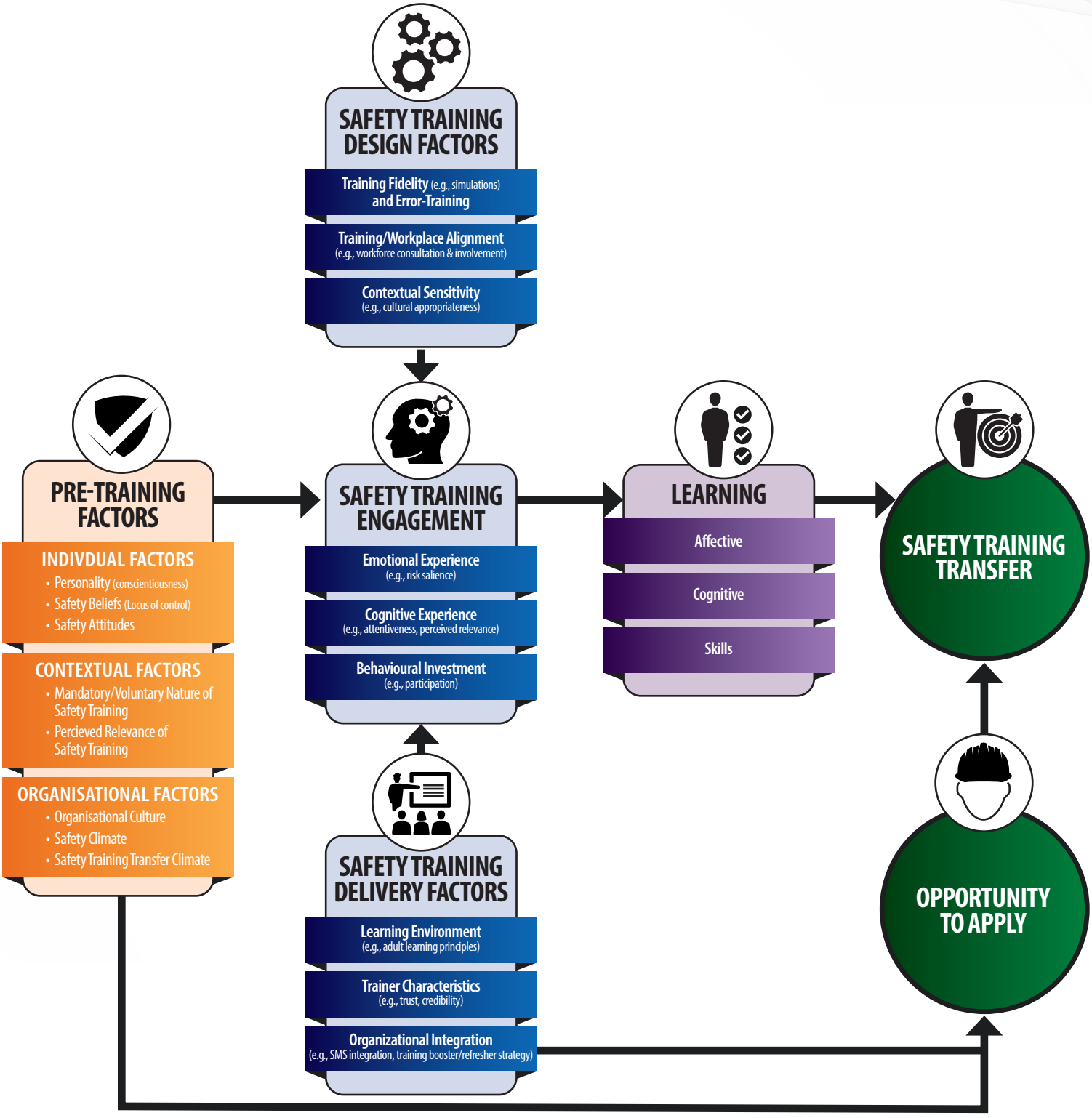
APPENDIX A
MODEL OF SAFETY ENGAGEMENT, LEARNING AND TRANSFER



Source Casey, T., Turner, N., Hu, X., & Bancroft, K. (2021). Making safety training stickier: A richer model of safety training engagement and transfer. Journal of Safety Research, 78, 303-313. doi.org/10.1016/j.jsr.2021.06.004

APPENDIX B
ADULT LEARNING PRINCIPLES

Adults need to know

Adults need to know why they need to learn something before undertaking to learn it. When adults undertake to learn something on their own, they will invest considerable energy in probing into the benefits they will gain from learning it and the negative consequences of not learning it. It is crucial for instructors to help the adults become aware of the "need to know."

Adults are self-directed

Adults see themselves as being responsible for their own decisions and their own lives and want to be seen by others and treated by others as being capable of self-direction. They resent and resist situations in which they feel others are imposing their wills on them. Treating adults lke children in a learning context creates a conflict between adults' intellectual model (learner = dependent) and the deeper, perhaps subconscious, psychological need to be self-directing.

Adults bring abundant experience

Adults come into an educational activity with a greater volume, greater diversity, and different quality of experience from that of youths and children. Adults' background, learning style, motivation, needs, and interests require a greater emphasis on adults as sources of learning and the individualization of teaching and learning strategies via group discussions, simulation exercises, problem solving activities, case methods, and peer learning instead of transmittal techniques. In addition, adults can have mental habits, biases, and presuppositions that can be barriers to learning and change. Accordingly, instructors need to discover ways to help adults examine their habits and biases and open their minds to new approaches.

Adults are ready to learn

Adults become ready to learn those things they need to know and be able to do in order to cope effectively with their real-life situations. An especially rich source of "readiness to learn" is the developmental tasks associated with moving from one developmental stage to the next. The critical implication of this assumption is the importance of timing learning experiences to coincide with those developmental tasks. For example, bench workers are not ready for a course in supervisory training until they have mastered doing the work they will supervise and have decided that they are ready for more responsibility.

Adults' orient to learning differently than youths

In contrast to childrens' and youths' subject-centered orientation to learning (at least in school), adults are life-centered (or task-centered or problem-centered) in their orientation to learning. Adults are motivated to learn to the extent that they perceive that learning will help them perform tasks or deal with problems that they confront in their life situations. Furthermore, they learn new knowledge, understandings, skills, values, and attitudes most effectively when they are presented in the context of application to real-life situations.

Adults are intrinsically motivated

Adults are responsive to some external motivators (e.g. better jobs, promotions, higher salaries), but the most potent motivators are internal pressures (e.g. the desire for increased job satisfaction, self-esteem, quality of life). All adults are normally motivated to keep growing and developing, but this motivation is frequently blocked by such barriers as negative self-concept as a student, inaccessibility of opportunities or resources, time constraints, and programs that violate the principles of adult learning.

Source Knowles, M., Holton, E., & Swanson, R. (2005). The adult learner: The definitive classic in Adult Education and Human Resource Development. Elsevier.

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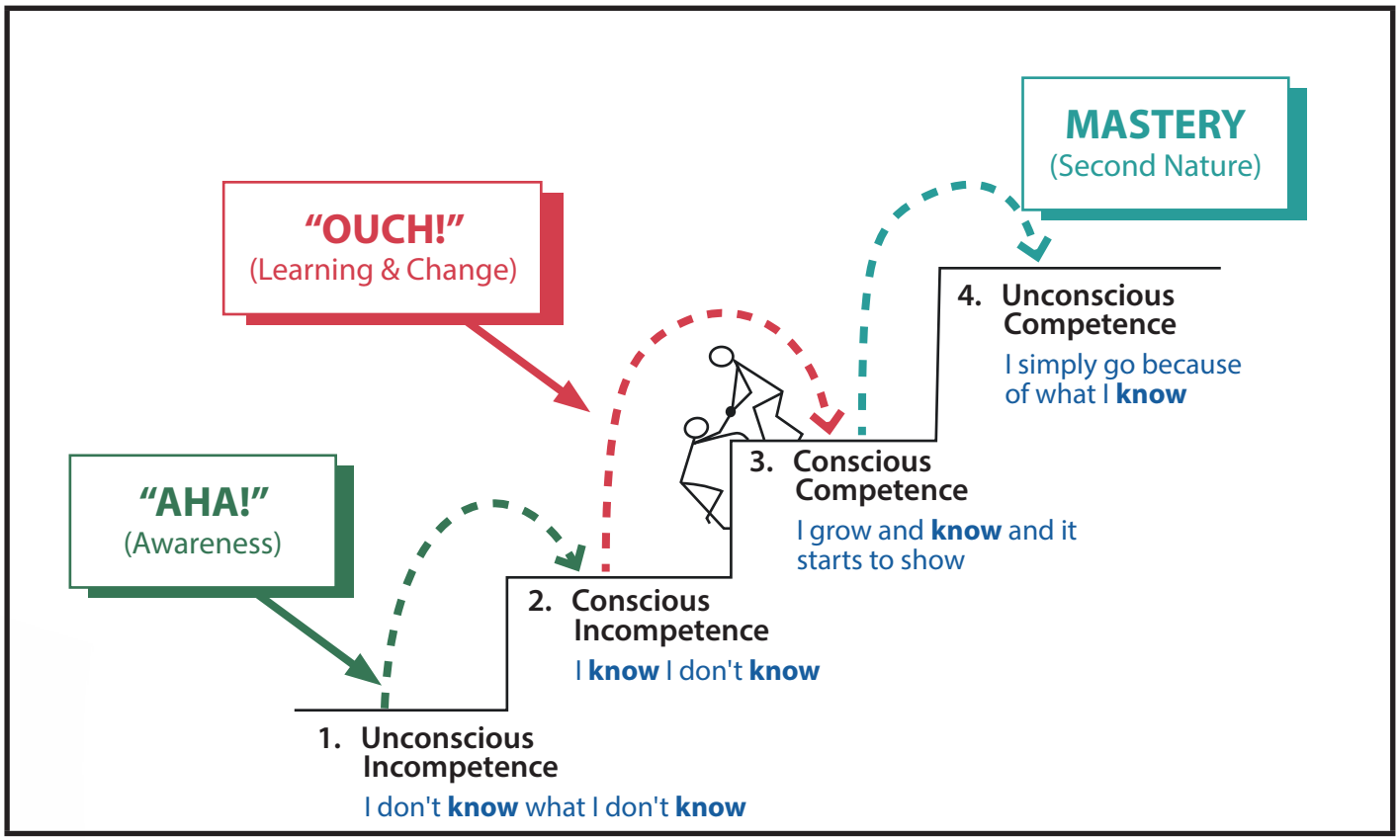
APPENDIX C
ADDITIONAL LEARNING SCIENCES HANDOUTS

Developing Competence



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ADDITIONAL LEARNING SCIENCES HANDOUTS

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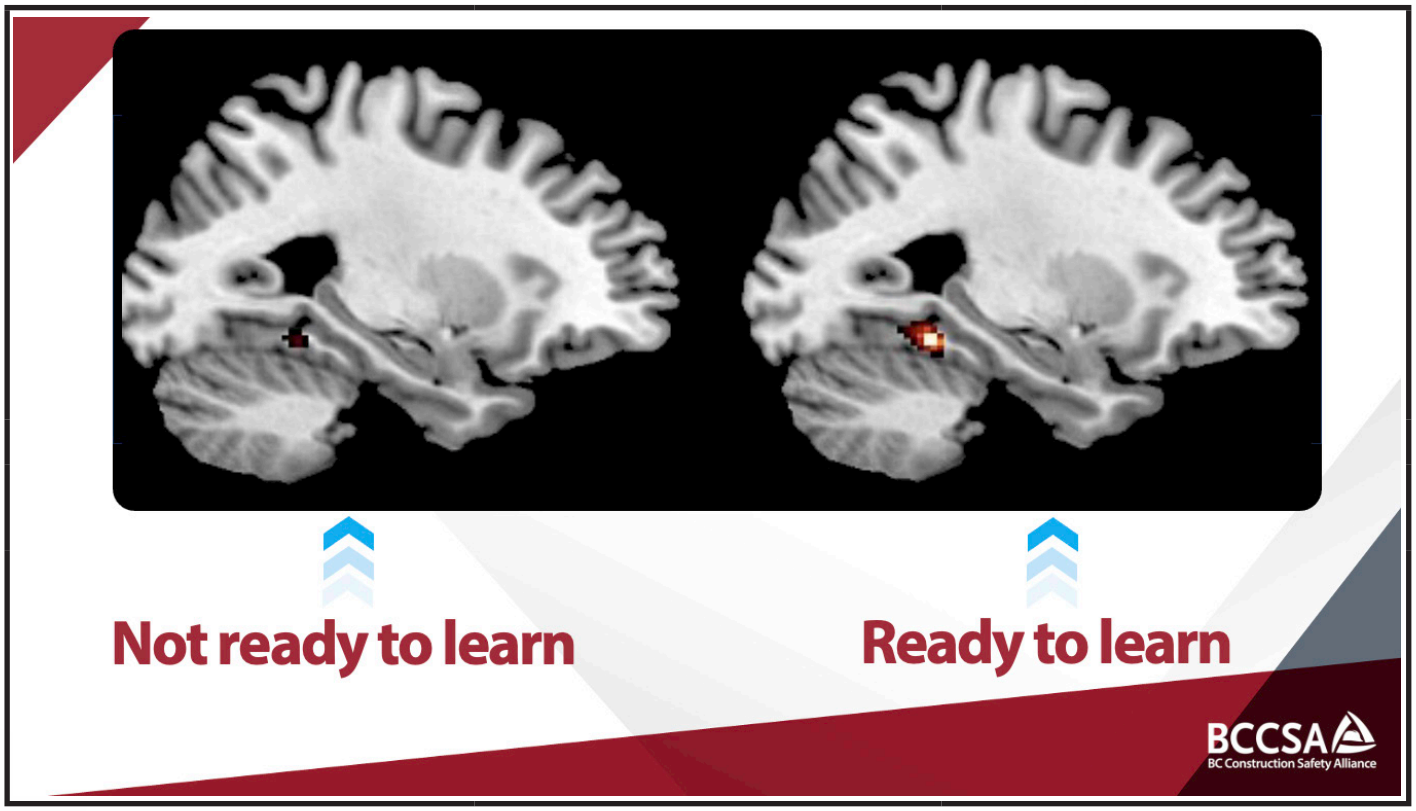

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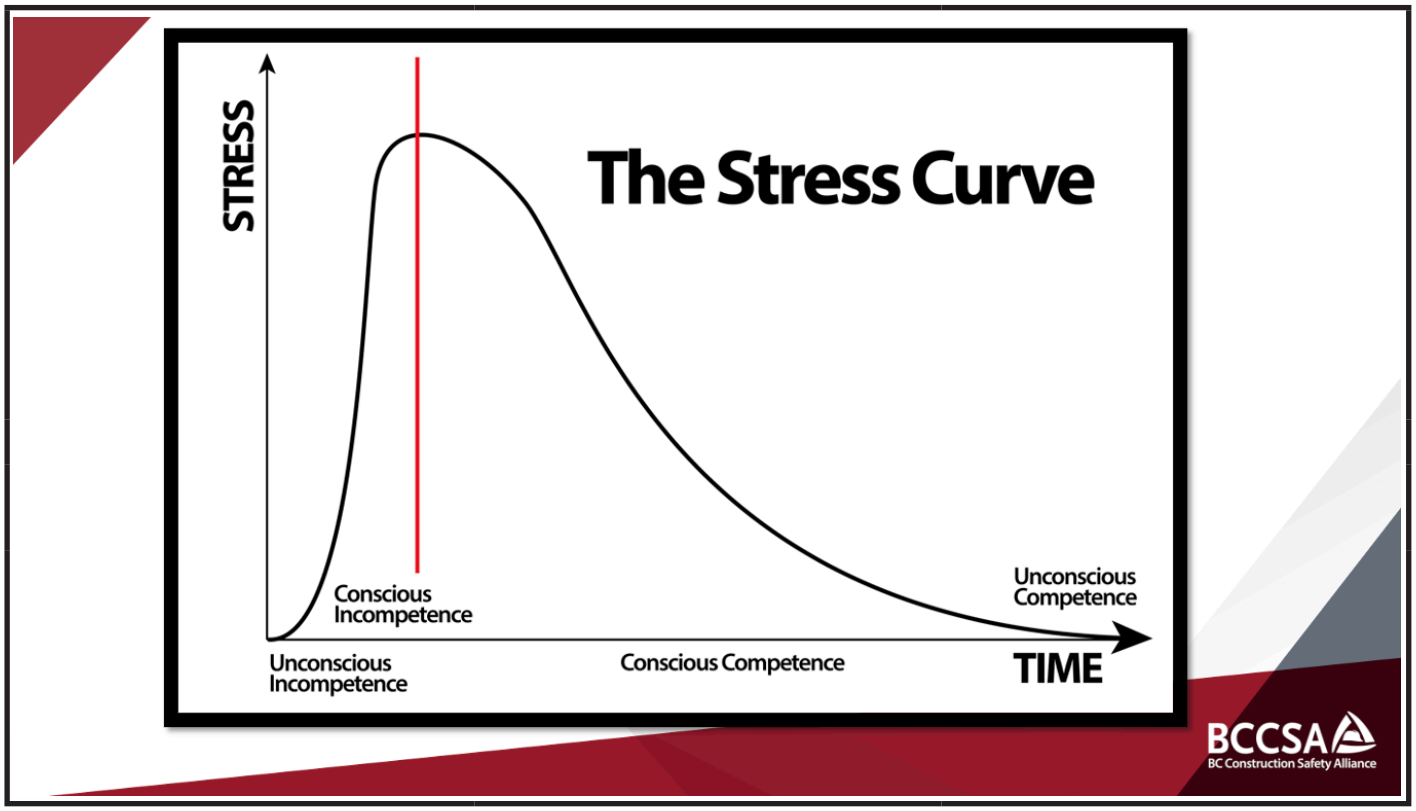
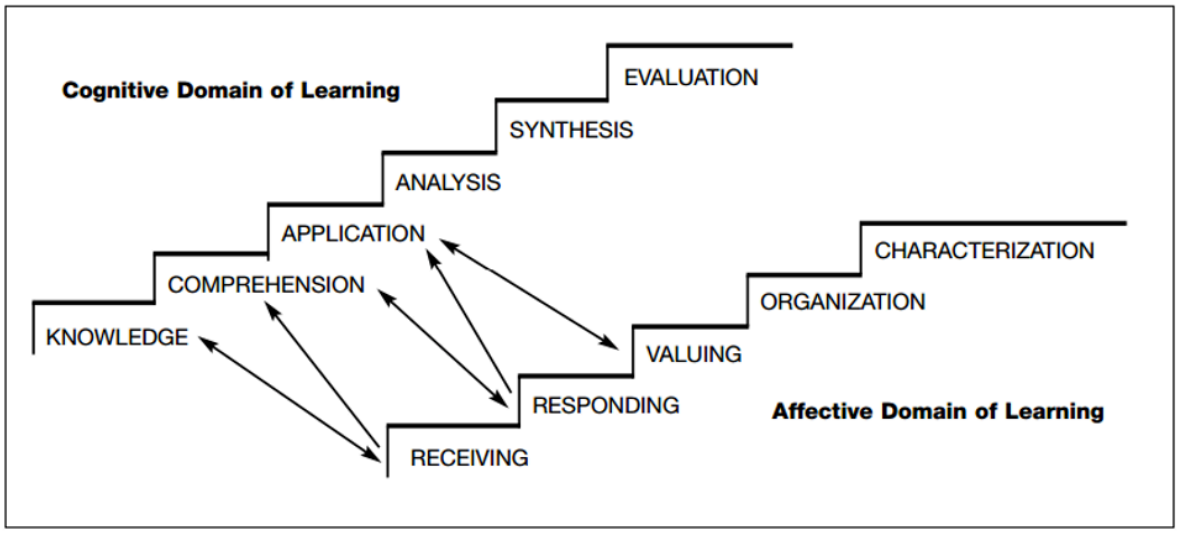


APPENDIX C
ADDITIONAL LEARNING SCIENCES HANDOUTS

Learning: Knowledge and Attitudes



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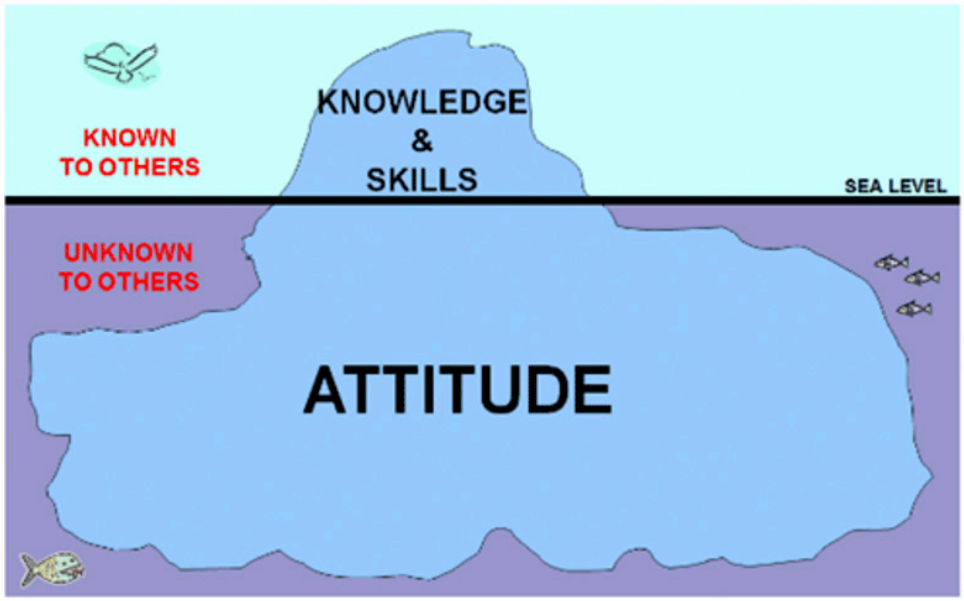

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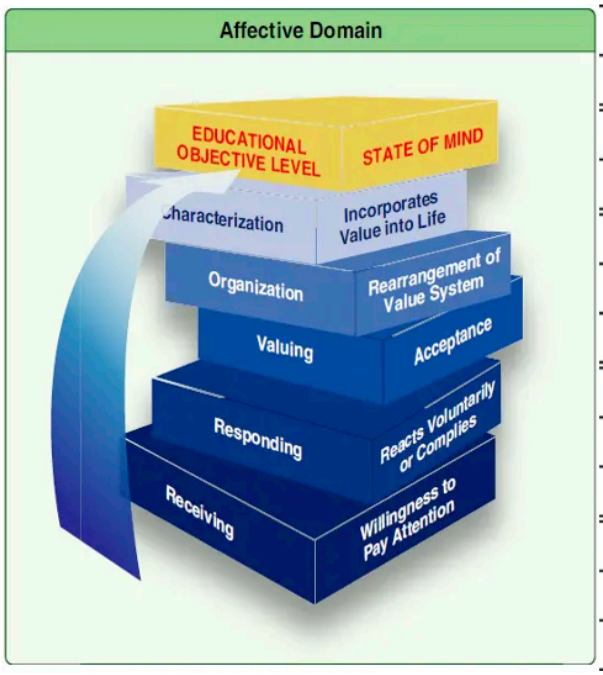
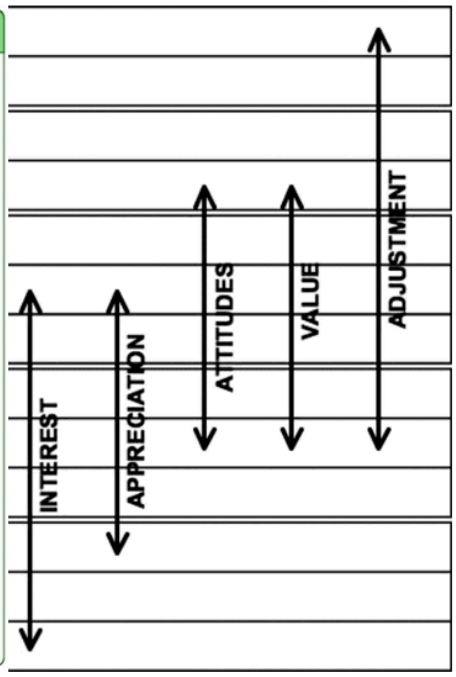
ADDITIONAL LEARNING SCIENCES HANDOUTS





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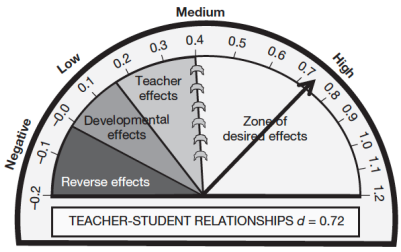
APPENDIX C
ADDITIONAL LEARNING SCIENCES HANDOUTS

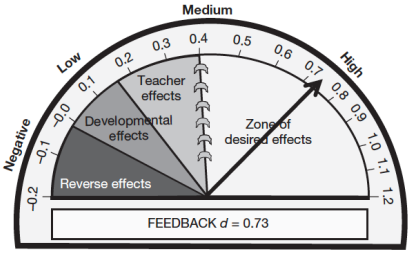
What do the learning sciences say?

The diagrams below show what effect trainers have on how much trainees learn. The key number to look at is "d", which measures the effects of different factors on learning.

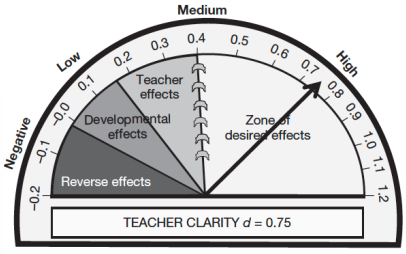
One way of thinking about d: imagine a group of trainees who normally get an average mark of 70% and everyone's marks fall evenly between 40% and 100%. If a technique or factor with an effect size of d = 0.55 (e.g., peer tutoring below), it means that trainees will, on average, get up to a 5.5% bump on how much they learn if they get effective tutoring.



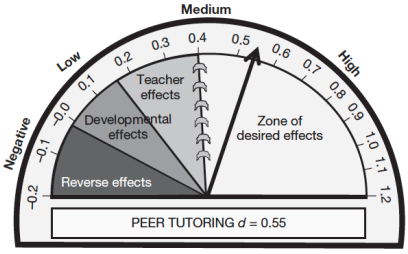
KEY	
Standard error	0.011 (Low)
Rank	11th
Number of meta-analyses	1
Number of studies	229
Number of effects	1,450
Number of people (1)	355,325



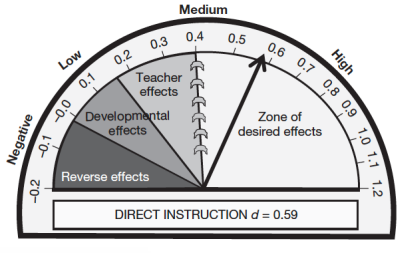
KEY	
Standard error	0.061 (Medium)
Rank	10th
Number of meta-analyses	23
Number of studies	1,287
Number of effects	2,050
Number of people (10)	67,931



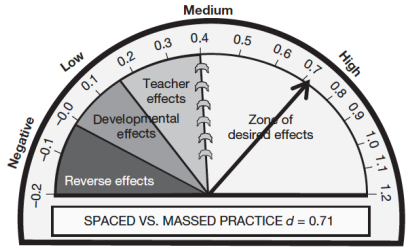
KEY	
Standard error	na
Rank	8th
Number of meta-analyses	1
Number of studies	na
Number of effects	na
Number of people (0)	na



KEY	
Standard error	0.103 (High)
Rank	36th
Number of meta-analyses	14
Number of studies	767
Number of effects	1,200
Number of people (3)	2,676



KEY	
Standard error	0.096 (High)
Rank	26th
Number of meta-analyses	4
Number of studies	304
Number of effects	597
Number of people (1)	42,618



KEY	
Standard error	na
Rank	12th
Number of meta-analyses	2
Number of studies	63
Number of effects	112
Number of people (0)	na

Source Hattie, J. (2009). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. Routledge

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APPENDIX D
SAMPLE TOOLBOX TALKS AND RECORD BOOK

Sample Toolbox Talks and Record Book

OHS research and industry best practices give a sense of the range of possible topics for toolbox talks. National Institute for Occupational Safety and Health (NIOSH) research based on injury and mortality statistics in the US construction industry identified the following eight safety training topics as having a high impact on workplace safety[1] :

- Falls from roofs
- Falls from extension ladders
- Falls from equipment or loads (e.g., forklifts)
- Falls through holes in roofs and floors
- Electrocutions: Overhead power lines and boom cranes
- Deaths or injuries from equipment failure, improper tool use
- Deaths from crushing: Building materials, structural collapse
- Deaths from mobile machinery (e.g., skid-steer loaders)

Common hazards like these vary by construction subsector, trade, project, and project stage. This means that any safety training program needs to be responsive to the work context. For example, hazard assessments can be used to make proactive decisions on the toolbox talk topics needed. Workplace inspections and incidents can also determine the training needed as corrective action to prevent or reduce further incidents.

TABLE 1 | POSSIBLE TOOLBOX TALKS

Responsibilities, rights, obligations	Ladders	Formwork
Team responsibilities	Scaffolding	Floor coverings
Workers' rights	Fall protection	Compressed gas cylinders
Company rules	Rigging and hoisting	Falling objects
Personal Protective Equipment	Rigging hardware	Securing loads
Eye Protection	Crane hand signals	Emergency response
Hearing protection	Tag lines	Emergency drills
Respiratory protection	Trenching	First aiders
Head protection	Soil types	First aid kits
Hand protection	Protection (sloping, boxes)	Fire extinguishers
Fire retardant clothing	Excavator hand signals	Vehicles
WHMIS	Techniques and tools	Walk around/pre-use inspection
Hazardous products on site	Housekeeping	Backing up
Labels	Hand tools	Traffic control
Safety Data Sheets	Electric tools	Hazards
Working at heights	Powder actuated tools	Site/job specific TBT
Guardrails/toe boards	Propane	

[1] Article: Evaluation of toolbox safety training in construction: The impact of narratives. *American Journal of Industrial Medicine*, 2018, Volume 61, pages 997-1004.

APPENDIX D
SAMPLE TOOLBOX TALKS AND RECORD BOOK

Where can I find resources for toolbox talks?

The links below provide contain some good resources for toolbox talks.

BCCSA Toolbox Talks
https://www.bccsa.ca/Toolbox-Talks-.html

WorkSafeBC Resource Toolbox
https://www.worksafebc.com/en/health-safety/hazards-exposures/combustible-dust/resource-toolbox

OHS (Alberta) Health and Safety Topics
https://ohs-pubstore.labour.alberta.ca/health-safety-topics

SCSA (Saskatchewan) Toolbox Talks
https://scsaonline.ca/resources/tool-box-talks

CSAM (Manitoba) Toolbox Talks
https://www.constructionsafety.ca/resources/downloads/

IHSA (Ontario) Safety Talks
https://www.ihsa.ca/resources/safetytalks.aspx

NIOSH Construction Toolbox Talks
https://www.cdc.gov/niosh/construction/toolboxtalks/default.html

National Safety Council (NSC, US) Work Safety Topics (Not For Profit Organization)
https://www.nsc.org/workplace/safety-topics

CDPH Tailgate Training Materials (California)
https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/Pages/BuildSafe.aspx#cards

OHSU Toolbox Talks (Oregon)
https://www.ohsu.edu/oregon-fatality-assessment-control-evaluation/construction

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APPENDIX D
TOOLBOX TALK | WEEKLY RECORD BOOK

Company _____

_____

Project _____

_____

Supervisor _____

_____

Training is the
KEY to **Safety**

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APPENDIX D
TOOLBOX TALK | WEEKLY RECORD BOOK

Guidelines For Toolbox Talks

Toolbox safety talks are one of the most effective ways for supervisory personnel to exhibit their own and the company's commitment to safety. Talks should be conducted with a specific topic for discussion, such as a new safety rule or procedure or a recent accident.

1. Toolbox talks should be held once each week at a set time. Additional meetings should be held if necessary (example: after an accident)
2. All workers must attend.
3. Meetings should be less than 15 minutes duration.
4. Examples of toolbox talk topics:
   - A recent accident
   - Operating equipment safely
   - Using/caring for personal protective equipment
   - Reporting accidents and hazards
   - Housekeeping on-the-job
   - Violations of safety rules
   - Jobsite emergency procedures
5. Preparing for toolbox talks involves:
   a. Deciding on a topic
      i. Think of your own experiences, observations, and beliefs.
      ii. Think of your area of control, repeated problems, recent accomplishments, needs for improvement.
      iii. Think of your workers, their wants and needs, opinions, abilities and attitudes.
      iv. Keep notes of day-to-day occurrences that could form a basis for interesting safety talks.
      v. Read safety-related material, and clip articles for later discussion.
      vi. Confine the topic to one main idea; don't try to talk about everything!
   b. Summarizing your talk in point form for reference
      i. Know what you are going to say.
      ii. Write down the key points, facts and examples.
   c. Practising your talk - run through your material before presenting it to your workers.
6. When you deliver your talk:
   a. Relate to the workers' attitudes, abilities and interests.
   b. Let your crew hear and see your talk. Use brief demonstrations, simple graphs or displays, WCB posters or news articles.
   c. Involve the workers by encouraging questions and discussions.
   d. Keep your message clear and understandable.
   e. Answer spoken and unspoken questions. Workers often wonder: What does it mean to me? What do you want me to do? What's in it for me?
7. Follow up to ensure recommendations are carried out.

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APPENDIX D
TOOLBOX TALK RECORD

SUPERVISORS NAME/TRADE (PRINT)	DATE	PROJECT ID

TOPIC(S) DISCUSSED

EMPLOYEES ATTENDED BY NAME		

INSTRUCTION GIVEN

FEEDBACK GIVEN FROM EMPLOYEE SUGGESTIONS & ACTION TAKEN

SUPERVISORS SIGNATURE

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APPENDIX E
MINI-LESSONS MATERIAL
SEVEN STEP INSTRUCTIONAL PROCESS - PLANNING

BEGINNING
1. Focus | Gain attention, establish importance
2. Objective | Point of the training
3. Link | Link to trainees' existing knowledge/skills; pre-assessment

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APPENDIX E
MINI-LESSONS MATERIAL
SEVEN STEP INSTRUCTIONAL PROCESS - PLANNING

MIDDLE
4. **Present new learning** | Overview ideas/demonstrate skill
5. **Practice-Feedback** | Trainees practice. improve with trainer support
6. **Assess** | Trainees show what they know

END
7. **Debrief** | Summarize, link to next learning, give closure

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APPENDIX E
MINI-LESSONS MATERIAL
SEVEN STEP INSTRUCTIONAL PROCESS - PLANNING

BEGINNING

1. Focus | Gain attention, establish importance

- "When you fail to plan, you are planning to fail."
- Transport Canada: 1998 SOPs/improved practices reduced accidents involving fixed-wing small commercial operators from 94 to 63 in 2 years

2. Objective | Point of the training

- *Students will be able to fold an 8.5x11 page into a small booklet without glue or staples*

3. Link | Link to trainees' existing knowledge/skills

- Gauge participants' physical dexterity: Have you ever:
  - made a paper airplane? (easy)
  - create a X-mas card envelope out of a piece of paper? (medium)
  - folded an origami crane? (hard)
- Encourage – they can handle this

MIDDLE

4. Present new learning | Overview ideas/demonstrate skill

- Trainer-led describe/demo with memorable steps:
  1. Thumb on BCCSA logo
  2. Hot dog fold ⇢ Open
  3. Hamburger fold ⇢ Hot dog fold ⇢ Open
  4. Cut ⇢ Plus sign ⇢ Booklet

5. Practice-Feedback | Trainees practice. improve with trainer support

- Peer-to-peer training using same steps
- Trainer circulates, offers feedback and correction

6. Assess | Trainees show what they know

- Select one person from the crowd to demonstrate it

END

7. Debrief | Summarize, link to next learning, give closure

- Praise performance, provide feedback
- How to use in the future

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APPENDIX E
MINI-LESSONS MATERIAL IDEAS & TIPS

STEP	IDEA 1	IDEA 2	IDEA 3	IDEA 4	IDEA 5
1) Focus Gain attention, establish importance	**Ask about experiences** Has anyone ever been in a fire? What went through your mind?	**Appeal to self-interest** Today we're talking about …. What's in it for you? Well ….")	**Use interesting facts** Almost half of gas explosions in BC happen even though workers take initial precautions.	**Link training to recognized priorities** Safety, company policy, regulations	**Tell a relevant story** You've got loads of them!
2) Objective Point of the training	"When we're done, you will be able to…"	Specific, Measurable	Understandable, Trainee-focused	Clearly linked to training/ learning activities	Clearly linked to pre- and post-assessment
3) Link Link to trainee's knowledge/ skills; pre-assessment	Ask questions about their knowledge "Can anyone explain to the rest of us why …."	Show of hands to assess their experience "How many of you….?"	Elicit 3-4 ideas about the topic "What are some of the problems around extinguishing fires?	Most car accidents happen within 3 miles of people's houses. Why do you think that is?	Bring in physical or visible evidence/ example of a fail or hazard
4) Present new learning Overview ideas / demonstrate skill	**DDD** Describe ⇢ Demonstrate ⇢ Do	**Walk through** Walk them through complex step-by-step	**Talk** Simple, concise, use stories, humour, illustrations	**Short talk ⇢ Breakout** Talk to overview key ideas ⇢ Pairs/group dig into details	Use real stuff, equipment as props
5) Practice-Feedback Trainees practice, improv w. trainer support	Practice/prepare a demo	Peer-teach	Expert group A, B: A experts show B novices ⇢ B experts show A novices	Problem-solving scenarios	Role play
6) Assess Trainees show what they know	Demonstration	Decision-making problem	Quick quiz	Card matching activity	Compare/contrast - Do you handle chemical and electrical fires the same? Why not?
7) Debrief Summarize, link to next learning, give closure	**Summarize/refocus** The three key takeaways are 1), 2), 3)	**Muddiest point** Pick out what they're not getting, reteach	**Elicit summary** Ask for a summary of the key steps in the process	**Point to next training** "Tomorrow we're going to practice using fire extinguishers	**Point to application** Ask them to identify how they'll apply it on the job

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APPENDIX E
MINI-LESSONS MATERIAL
IDEAS & TIPS *(Your turn- can you add your ideas and tips?)*

STEP	IDEA 1	IDEA 2	IDEA 3	IDEA 4	IDEA 5
1) Focus Gain attention, establish importance					
2) Objective Point of the training					
3) Link Link to trainee's knowledge/ skills					
4) Present new learning Overview ideas / demonstrate skills; pre-assessment					
5) Practice-Feedback Trainees practice, improv w. trainer support					
6) Assess Trainees show what they know					
7) Debrief Summarize, link to next learning, give closure					

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APPENDIX E
MINI-LESSONS MATERIAL
PEER FEEDBACK CHECKLIST - THE 7-STEP PROCESS

As you participate in each mini-lesson, keep the two questions below in your mind. After the training, write down 3 things that the trainer did that worked or didn't work. Be ready to give specific feedback to the trainer.

1. ***What worked? What did the trainer do that helped you to learn?***
2. ***What didn't work? Is there something the trainer could do better next time?***

STEP 1 | FOCUS	
Did the trainer get my attention or capture my interest? How?	☐
STEP 2 | OBJECTIVE	
Was the objective stated out loud? Was the objective explained?	☐
STEP 3 | LINK	
Did the trainer assess what you knew about the topic OR link the topic to your experiences? How?	☐
STEP 4 | PRESENT NEW LEARNING	
Did the trainer demonstrate a new skill or present new ideas in an engaging way? How?	☐
STEP 5 | PRACTICE-FEEDBACK	
What did the trainer do to get trainees actively involved? Did the trainer provide feedback on their work? How?	☐
STEP 6 | ASSESS	
Did the trainees get a chance to demonstrate their skill or knowledge? How?	☐
STEP 7 | DEBRIEF	
Was there a sense of completion of the lesson? Was the learning summarized at the end of the lesson?	☐

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APPENDIX E
MINI-LESSONS MATERIAL
PEER FEEDBACK CHECKLIST - DELIVERY

As you participate in each mini-lesson, keep the following characteristics of effective training in mind. Take notes when the lesson is complete and be ready to provide feedback to the trainer.

PROGRESSION	
Moved through the lesson in a clear, logical sequence.	☐
ACTIVITIES	
Selected and conducted activities that fostered new learning.	☐
DELIVERY	
Maintained eye contact, used voice and body language effectively.	☐
TIME USAGE	
Used available time in a way that was effective for learning.	☐
ENGAGEMENT	
Stimulated interest and connection to the topic.	☐
RESPONSIVENESS	
Responded to trainees needs and questions.	☐
TRAINEE-CENTEREDNESS	
Engaged trainees in active learning.	☐
OTHER OBSERVATIONS AND FEEDBACK	
	☐

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APPENDIX F
OCCUPATIONAL HEALTH AND SAFETY RESPONSIBILITIES

Employers

Employers are responsible for policies, procedures and purchases that promote health and safety.

Employers' responsibilities are to:

1. Establish an Occupational Health and Safety (OHS) Program.
2. Show support and commitment. (Leadership)
3. Provide a safe workplace.
4. Maintain the OHS Program and enforce OHS policies.
5. Ensure proper training of workers. Workers should not complete tasks unless they have the proper training. Workers also have a right to receive safety training and participate in safety training relevant to their work
6. Ensure required personal protective equipment (PPE) is available and used.
7. Ensure regular inspections are conducted, as required
8. Ensure investigations are conducted as required.
9. Ensure first aid services are available as required.
10. Review hazard assessments, inspections and investigations.
11. Ensure compliance with legislation.
12. Report accidents and injuries to WorkSafeBC.
13. Document safety training and toolbox talks and keep records up-to-date. Training and toolbox talks can be used as due diligence.

Supervisors

The real key to the success of the health and safety program at your job site is the supervisor. Supervisors are responsible to see that acts and conditions on the worksite are up to standard.

Supervisors' responsibilities are to:

1. Promote health and safety awareness through hazard assessments.
2. Establish a safe work plan
3. Instruct workers – "the safe way".
4. Reinforce safe behaviour.
5. Correct unsafe acts and conditions.
6. Assess and correct hazards.
7. Enforce safety rules.
8. Ensure proper equipment/tool use and maintenance.
9. Investigate incidents.
10. Comply with legislation.
11. Set a good example.

APPENDIX F
OCCUPATIONAL HEALTH AND SAFETY RESPONSIBILITIES

Safety and Supervisions "Due Diligence" Requirements

In legal terms, this is the requirement of a company to provide safe work conditions, through taking reasonable steps to prevent incidents from occurring. Examples of due diligence include:

- Orientation of New Employees to the company's safety program.
- Instruction to all workers in safe work practices and procedures.
- Training of workers in specific job skills.
- Educating workers on workplace hazards and how to stay safe.
- Record keeping of all workplace inspections and investigations.
- Identifying and correcting unsafe conditions.

Sources of Safety Training topics include:

- Knowledge of procedures and practices as per Act and regulations
- Standard practices and safe operation
- On-going hazard and risk inspections

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APPENDIX G
15 TIPS FOR A SUCCESSFUL PRESENTATION

1. Design your lesson from your learner's point of view. Put yourself in her or his place and think about how you would like to learn rather than how you would best like to present. The result will be a more active and participatory classroom when you do.
2. Learn the names of everyone as quickly as possible. Use a seating chart, nametags or cards. It builds immediate rapport.
3. Assume your audience knows something about the topic. Find out how much right from the start.
4. Don't assume that your audience is interested in the subject. Then work to develop and strengthen their interest.
5. Be enthusiastic. Show through your words, voice and physical actions that you think the topic is of value.
6. Use stories, humour and illustrations to reinforce your principal points.
7. Use your natural voice, gestures and movement to reinforce your delivery; give emphasis and life to your presentation with “body language”.
8. Keep language simple and concise.
9. Use visuals, but make them clear and focused.
10. Keep handouts simple and clear. Control their use. Distribute them after you make your major point if you need to focus the learner's attention on you, the board or screen.
11. Use numbers and statistics selectively and only a few. Be sure that the numbers tell a story by themselves. Avoid complicated tables if possible.
12. Ensure that learner participation is in every lesson. Alternate instructor explanations with the opportunity for the learners to participate directly.
13. Ask questions. Direct your questions to the group as well as to individuals. Encourage your learners to ask questions.
14. End on an upbeat note and reinforce the one principal idea, skill or attitude that was set out in your objective. Ask yourself, "What do I want them to remember tomorrow?" and stress that in your closing.
15. "Don't Agonize, Organize"! (Plan, Prepare and Practice)

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APPENDIX H
10 COMMON PROBLEMS AT THE OUTSET

New trainers make mistakes and so do experienced ones. Here are a few common mistakes and at least one suggestion on how to avoid it.

1. Instructor plunges into the topic without explanation. Write the session's objective out and post it in the room. Then explain why it's important to learn.
2. Too much instructor talk. As a rule of thumb, try to give two thirds of class time to the learners to your one third.
3. No learner participation. Practice makes perfect. Present new material quickly and then give your learners time to use it.
4. Too much content. There is never enough time. So start by limiting the amount of material you try to 'cover'. Remember the participants want to participate and this takes time. However, their input is absolutely vital.
5. Objective is set too low/too high. Setting the right level of challenge for a session is crucial. Too easy and learners are bored. Too difficult and they are frustrated. Base the level on what learners need to know and do at their jobs.
6. Time is up before the content is covered. Do not try to speak faster. Just inform participants that the session will be continued. Bring it to a formal conclusion by getting the group to summarize key points. Then, explain what will occur at the next meeting.
7. Trainer consistently refers to lesson plan or notes. Not only is this distracting but it interferes with the flow of the lesson. Instead of looking at the plan, create an agenda on a flip chart and tape it on a surface where you can easily see it. This should be enough to keep you on track.
8. No visual references. Don't be a "talking head". Create visual aids for your sessions. Overheads, flip charts, diagrams, key words and handouts are all media that will add interest and strength to the presentation.
9. No check on learning. Probably the most common mistake made by both new and experienced instructors is not assessing for learning. Don't end the session without getting an idea of whether your learners can use the knowledge or perform the skill correctly. This is vital information for both you and them.
10. Too Serious. You don't need to tell jokes or be a talk show host to be a successful trainer, but keep a sense of humour and when possible add the occasional cartoon or anecdote. Just keep it relevant and in good taste, and don't forget to smile. Remember the adage: He who makes no mistakes makes nothing, and he who fails to learn from mistakes never learns.

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APPENDIX I
11 TIPS FOR TIME MANAGEMENT

1. Be there ahead of time. Effective instructors are ready well before the session starts and use the available time to the maximum.
2. Not everyone there yet? Too bad. Start on time. Respect those who are punctual and value their time. This includes coming back from breaks.
3. Prepare visuals ahead of time as much as possible. Flip charts and transparencies are easy to get ready before the session starts.
4. Place handouts in easy reach or distribute them before class starts.
5. Give clear directions. You may have to repeat them but that's normal. A good idea is to say the directions aloud and write them on the board.
6. Keep discussions moving. Prepare a list of questions ahead of time.
7. Set time limits on activities and practice sessions. This motivates the participants to focus quickly and get things done.
8. Place participants in groups quickly. Don't worry about seeming bossy. Learners dislike indecision around simple procedures. Asking learners to number off and placing them in groups by numbers is one quick and effective way.
9. When groups report, get them to write out their ideas or conclusions on a flip chart and post. Assign a sequence to reporting and get a person from each group to do it.
10. Signal the group's attention decisively. This saves time and maintains the pace. Also, pick up the pace of work, as necessary, when you notice the group is getting off task or wandering.
11. 11 Try to keep to a schedule. Set break times and respect them as much as possible.

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APPENDIX J
10 TIPS FOR MAINTAINING CONTROL

1. Set up ground rules at the start. Ask your participants to define the rules that they would like to have in place for conduct and participation. Post them in the room.

2. Use groups, but keep changing the members of the group. This eases personality frictions that can happen during group work.

3. Set an appropriate level of challenge. Interesting, do-able and stimulating activity will keep participants on task. Busy participants are less likely to become critical or uncooperative.

4. When a learner grows drowsy or engages in side conversations, don't single the person out. Instead, move closer and stand beside that person while you conduct the session.

5. Occasionally a participant will challenge you. Try not to overreact. Some learners can appear aggressive in their comments or openly critical. Instead of defending yourself or actions, ask for clarification and acknowledge their point of view. If necessary, ask them to discuss their point with you after class.

6. Connect with your participants as people. Take interest in your group, and their personal situations and problems. Show that you care.

7. Put limits on those who dominate. Perhaps one of the most difficult tasks for a trainer is to put limits on the person who dominates the class or discussion. Be firm but gentle. Thank the person for his contribution but remind him that others need a chance to speak. Small group work often diminishes the attempt by this person to be the centre of attention.

8. Don't respond to every negative behaviour. Small distractions such a side talk will probably go away on their own. If not, deal with it outside of class time.

9. Give participants active roles. For example, allow them to assist you with the physical processes in the session such as distributing handouts and setting up the room. Quickly develop in your learners a sense that this is their course or training session, and they have some ownership in its success.

10. Don't get discouraged when difficulties arise. All training and instruction involve working with people. You will inevitably experience difficulty and perhaps even conflict in the classroom at some point. Do your best to be prepared and organized. If dissatisfaction occurs, listen, be patient and try to accommodate your learners within reason. Often, problem students have problems that are unrelated to you.

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APPENDIX K
MAKING TOOLBOX MEETINGS WORK: 10 TIPS, THE 6 QS, THE 6 PS

Effective training does not happen just because the topic is useful or important. In order to ensure that there is a transfer of skills from the training session to the job, and a gradual change in employees' attitudes, you need to create an environment that values training and ensures that the training is relevant and effective. Here are Ten Tips that will assist you to get the most out of any training that occurs on the job.

1. Make sure the topic is best approached through training. This means you need to have done your homework as a trainer and performed some form of needs assessment. There are alternatives to training that are more effective in some instances.
2. Create an atmosphere of support for training. Let employees know why the training is necessary. Link the training to their personal safety, for example, and the welfare of others.
3. Provide training that is as useful as possible. You should be able to do this easily if the training is being done in-house. If you must use external training providers, ensure that they are sufficiently familiar with your needs and conditions before the training starts. Often, outside trainers will need to modify their training to fit the conditions of your work site. Whatever you do, ensure that the training is at the right level of difficulty and usefulness.
4. Set measurable outcomes and inform learners of what is expected of them. Define those outcomes in terms of observable learner performance. Not only should the employee know what he is expected to do with the new knowledge and skills, but the trainer should know what to look for in performance after the trainee returns to work.
5. Assess learning at the end of the session. This can be done simply and quickly. Ask questions or ask participants to demonstrate the knowledge or skill in an active way. This reinforces the main points and assists the employee in retaining key information from the training.
6. Build in opportunities for the employees to provide their ideas and suggestions. This can not be overemphasized. Learning requires that the learners make the new skills or procedures their "personal" property. Encourage questions and discussions. People do not learn from simply being told. They have to understand the "what and why" in their own terms and this involves thinking and using the new information.
7. Build variety into your toolbox talks. Don't conduct the meetings the same way each time. Variety creates interest and provides alternative ways of learning.
8. Include everyone in the training, including supervisors and management. Participation by the entire company signals the importance that safety has for the company. They serve as role models to other employees. If the boss values the training enough to go through it, then employees understand its significance immediately.
9. Keep records. Records of successful completion of all training will ensure employees are recognized for their participation and success.
10. Use some humour and keep the tone upbeat. Training quickly loses its appeal if it seems punitive or heavy. Create an atmosphere that encourages participation and sharing. After all, safety training is for the benefit of everyone involved.

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APPENDIX K
MAKING TOOLBOX MEETINGS WORK: 10 TIPS, THE 6 QS, THE 6 PS

The Six Qs

1. Who? Who needs to attend this session?
2. What? What will you say at the start about this topic?
3. Why? Why is the topic important to the crew?
4. When? When will they use this information?
5. Where? Where will they use this information or skill?
6. How? How will the crew use this knowledge or skill?

The Six Ps

1. Prepare: Topic—Purpose—Relevance
2. Pinpoint: Specific objective & training outcome
3. Personalize: Motivation and employee experience
4. Picture it: Visuals, props, pictures, demonstrations
5. Post-Assess: Measure immediate impact
6. Prescribe: Identify action to take next

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APPENDIX L
GLOSSARY

Affective focus
Training and learning that involves the development of new attitudes, values, or beliefs.

Cognitive focus
Training and learning that involves the instruction of information, facts, ideas, rules, and problem solving.

Due diligence
Reasonable steps taken by a worker in order to satisfy legal or legislative requirements in the workplace.

Engagement
The emotional, cognitive, and behavioural state of trainees that affects their energy and motivation to do a learning task.

Instructional principles
Evidence-based reasons that trainers use to make decisions about planning and delivering training to maximize trainee engagement and learning.

Instructional processes
An ordered sequence of actions or techniques that trainers use to move through a training episode.

Instructional strategies
A specific technique, repertoire, or way of getting trainees to engage in learning.

Learning objective
A specific, measurable, understandable, and achievable statement that defines what learning trainers and trainees are aiming at. It is generally written as "At the end of the training, trainees will be able to…". Learning objectives contain i) a verb that describes the intended cognitive process, desired skills, or affective response and ii) an object that describes the knowledge that the trainee is expected to acquire or construct.

Learning sciences
The study of how people learn and how trainers can create situations to maximize learning. Skills focused training and learning that involves the training of physical, motor skills and procedural processes.

Safety beliefs and biases
Beliefs about how safety should be handled in an organization, what constitutes and hazard, and how much control one has in making workplaces safe.

Toolbox talk (also known as toolbox meetings, tailgate talks)
Short, practical hands-on training sessions held on worksites to address health and safety issues that are a major component of ongoing training and communication. Toolbox talks focus on site-specific topics that are relevant to the immediate worksite that can be fully discussed in the limited amount of time available. They provide regular, practical opportunities to put safety in the foreground of workers' awareness as they perform their daily tasks.

Transfer of learning
Trainees applying what they learned during training to situations and contexts outside of where they learned it (e.g., applying what they learned from a toolbox talk to the workplace).