COMMITTEE ON TRAUMA 2025

ATLS Global Symposium

March 14–16 | Chicago, IL

ATLS Instructor Course

11th Edition - Introduction & Overview

Alicia Ponton-Carss MD, MSc, PhD

Chair SEAB

ACS AMERICAN COLLEGE OF SURGEONS

Disclosure

I have no conflict of interest to disclose in relation to this presentation.

United States / Canada Regions

1
- Connecticut
- Maine
- Massachusetts
- New Hampshire
- Rhode Island
- Vermont

2
- New York
- New Jersey
- Puerto Rico

3
- Delaware
- District of Columbia
- Maryland
- Pennsylvania
- Virginia
- West Virginia
- Virgin Islands

4
- Alabama
- Florida
- Georgia
- Kentucky
- Mississippi
- North Carolina
- South Carolina
- Tennessee

5
- Illinois
- Indiana
- Michigan
- Minnesota
- Ohio
- Wisconsin

6
- Arkansas
- Louisiana
- Oklahoma
- New Mexico
- Texas

7
- Iowa
- Kansas
- Missouri
- Nebraska

8
- Colorado
- Montana
- North Dakota
- South Dakota
- Utah
- Wyoming

9
- Arizona
- California
- Hawaii
- Nevada

10
- Alaska
- Idaho
- Oregon
- Washington State

11 Western Canada
- Manitoba
- Saskatchewan
- Alberta
- Northwest Territories
- British Columbia

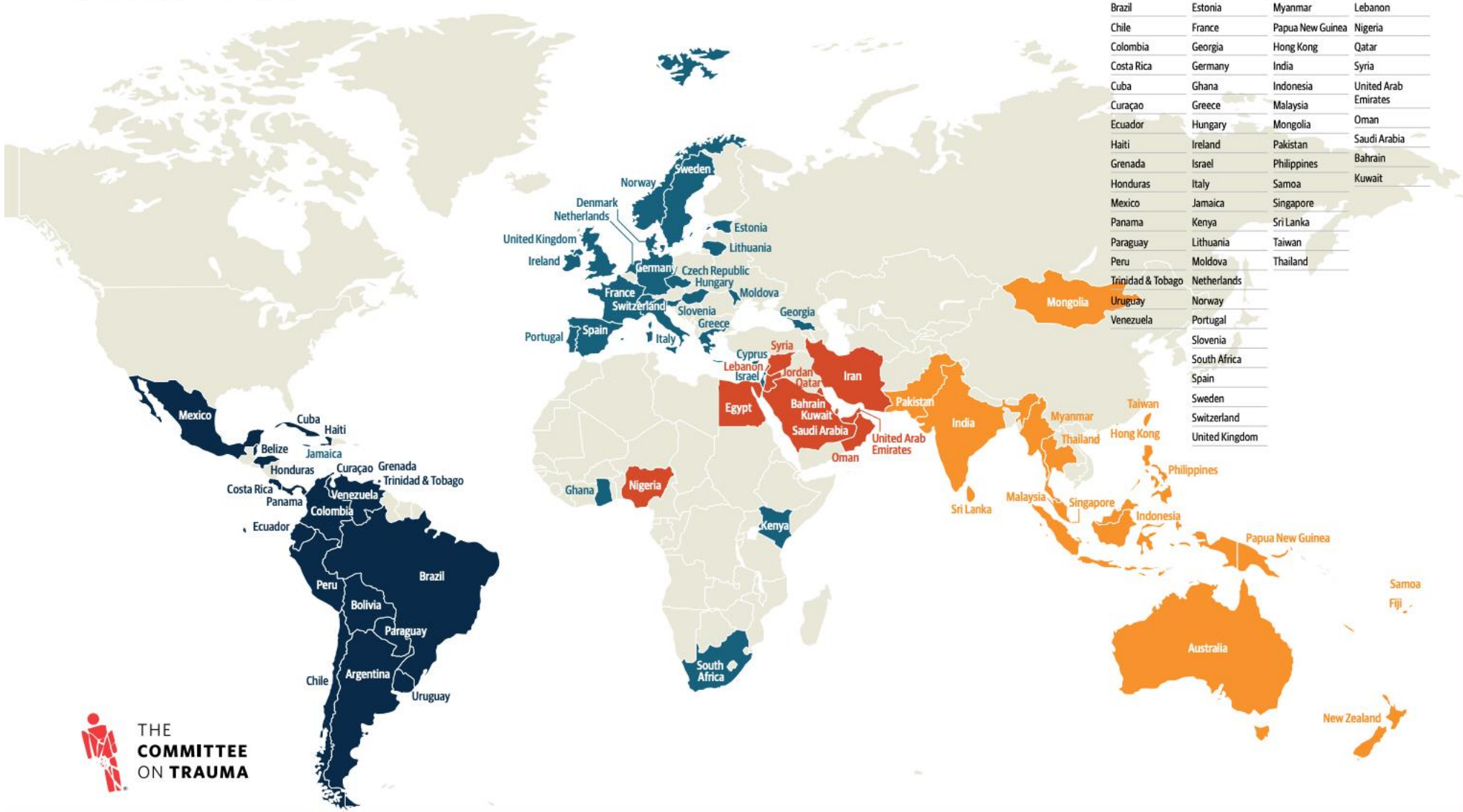
12 Eastern Canada
- Prince Edward Island
- Nova Scotia
- New Brunswick
- Newfoundland
- Quebec
- Ontario
- Nunavut

13
- Military

*Includes all U.S. Regions.

ATLS®

ADVANCED TRAUMA LIFE SUPPORT



14	15	16	17
Argentina	Cyprus	Australia	Egypt
Belize	Czech Republic	New Zealand	Iran
Bolivia	Denmark	Fiji	Jordan
Brazil	Estonia	Myanmar	Lebanon
Chile	France	Papua New Guinea	Nigeria
Colombia	Georgia	Hong Kong	Qatar
Costa Rica	Germany	India	Syria
Cuba	Ghana	Indonesia	United Arab Emirates
Curaçao	Greece	Malaysia	Oman
Ecuador	Hungary	Mongolia	Saudi Arabia
Haiti	Ireland	Pakistan	Bahrain
Grenada	Israel	Philippines	Kuwait
Honduras	Italy	Samoa	
Mexico	Jamaica	Singapore	
Panama	Kenya	Sri Lanka	
Paraguay	Lithuania	Taiwan	
Peru	Moldova	Thailand	
Trinidad & Tobago	Netherlands		
Uruguay	Norway		
Venezuela	Portugal		
	Slovenia		
	South Africa		
	Spain		
	Sweden		
	Switzerland		
	United Kingdom		

THE COMMITTEE ON TRAUMA

World Regions

Preface to 11th Edition

ATLS Course Objectives

- Organized and systematic approach for evaluation and treatment of patients
- Promotes standards of care
- Recognizes injury as a global healthcare challenge
- Easy to remember
- Introduces a system of trauma care that is measurable, reproducible, & comprehensive

The ATLS Program has positively impacted the care of injured patients worldwide.

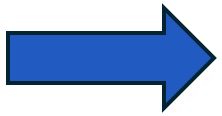
Preface to 11th Edition

- Global participation subcommittee members and surgical
- Trauma leaders from more than 20 countries
- Entire course was revised: manuals, interactive discussions, skills stations, online modules, video resources, IA stations, MCQs, My ATLS, policies
- 24 trauma topics were identified
- New content was added but course length was controlled
- Surgical educator in every team
- Flex workgroup

Educational Design of ATLS Course

Concepts

- **Standardized curriculum**
  - Teaches one way: the “ATLS way”
- **Context**
  - “First hour” of trauma care
- **Skills**
  - One safe method
- **Interactive design**
- **Feedback and assessment**



Components

- **Interactive Discussions**
- **Demonstrations**
- **Skills Stations**
  - Interactive with unfolding scenarios
- **Initial Assessment**
  - Simulated patient scenarios
- **MCQ and Practical Assessments**

Educational Design of ATLS Course

Traditional Course

- Participants read the ATLS Course Manual and View Videos
- Interactive Discussions
- Skills Stations
- Initial Assessment Scenarios

Hybrid Course

- Participants read the ATLS Course Manual and View Videos
- eLearning Modules through the LMS or online portal
- Skills Stations
- Initial Assessment Scenarios

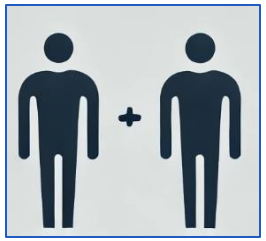
11th Edition

Instructor Course

Designed to prepare new Instructors to facilitate ATLS student courses

ATLS Instructor Mission

- Stand behind the ATLS Concepts



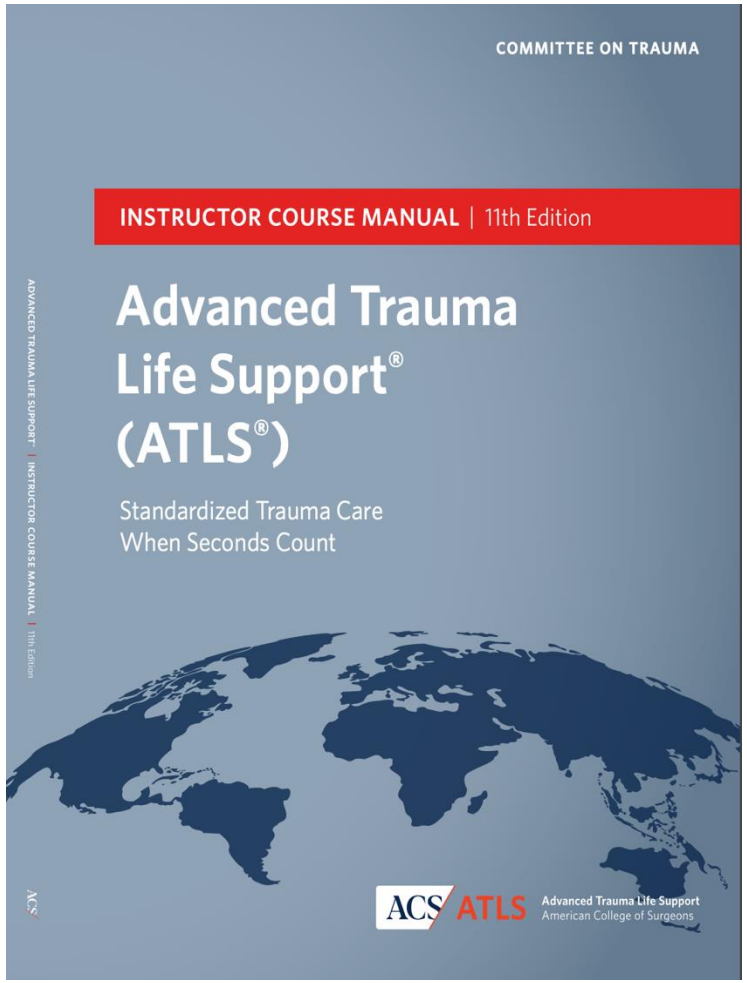
- Walk with the Learner

- Support the team teaching process

IC 11th Edition - General Objectives

- **Identify** the roles in an ATLS Course
- **Describe** how ATLS IC incorporates adult education concepts
- **Apply** key adult education concepts
- **Perform** as an ATLS Instructor
- **Describe** the importance of constructive feedback
- **Demonstrate** appropriate feedback in simulated conversations
- **Review** the principles of assessment and clarify the faculty role when assessing a learner's performance
- **Discuss** the principles of simulation

11th Edition Manual Chapters



1 - Introduction and Overview

2 - Adult Learning

3 - The ATLS Structure: Environment, Set, Dialogue, and Closure

4 - Interactive Teaching in ATLS

5 - Questioning Techniques

6 - Facilitating Learning during Psychomotor and Cognitive Skills Stations

7 - Formative Feedback and Feedforward as a Booster for Learning

8 - Summative Assessment

9 - Simulation in ATLS

10 - Looking Back and Looking Forward

Adult Learning - Definition

10th edition

Learning is:

A process of acquiring attitudes, knowledge, and skills that together enable a person to know or do something new or different

11th edition

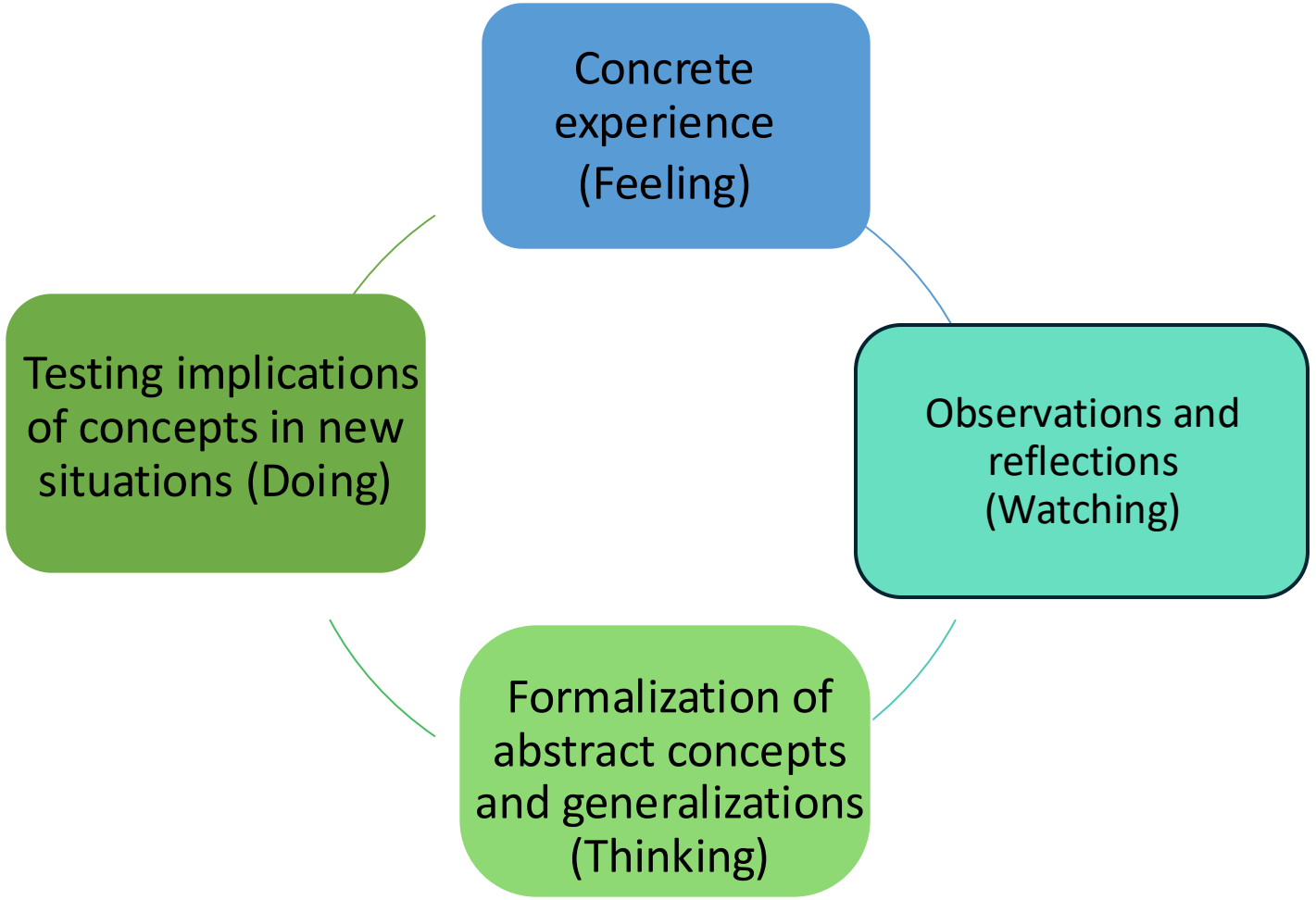
Learning is:

The social process of constructing and internalizing a new or revised interpretation of the meaning of one's experience as a guide to action.

Promoting transformative learning involves helping adults to elaborate, create, or transform their meaning schemes through reflection on their content, the process by which they were learned, and their premises

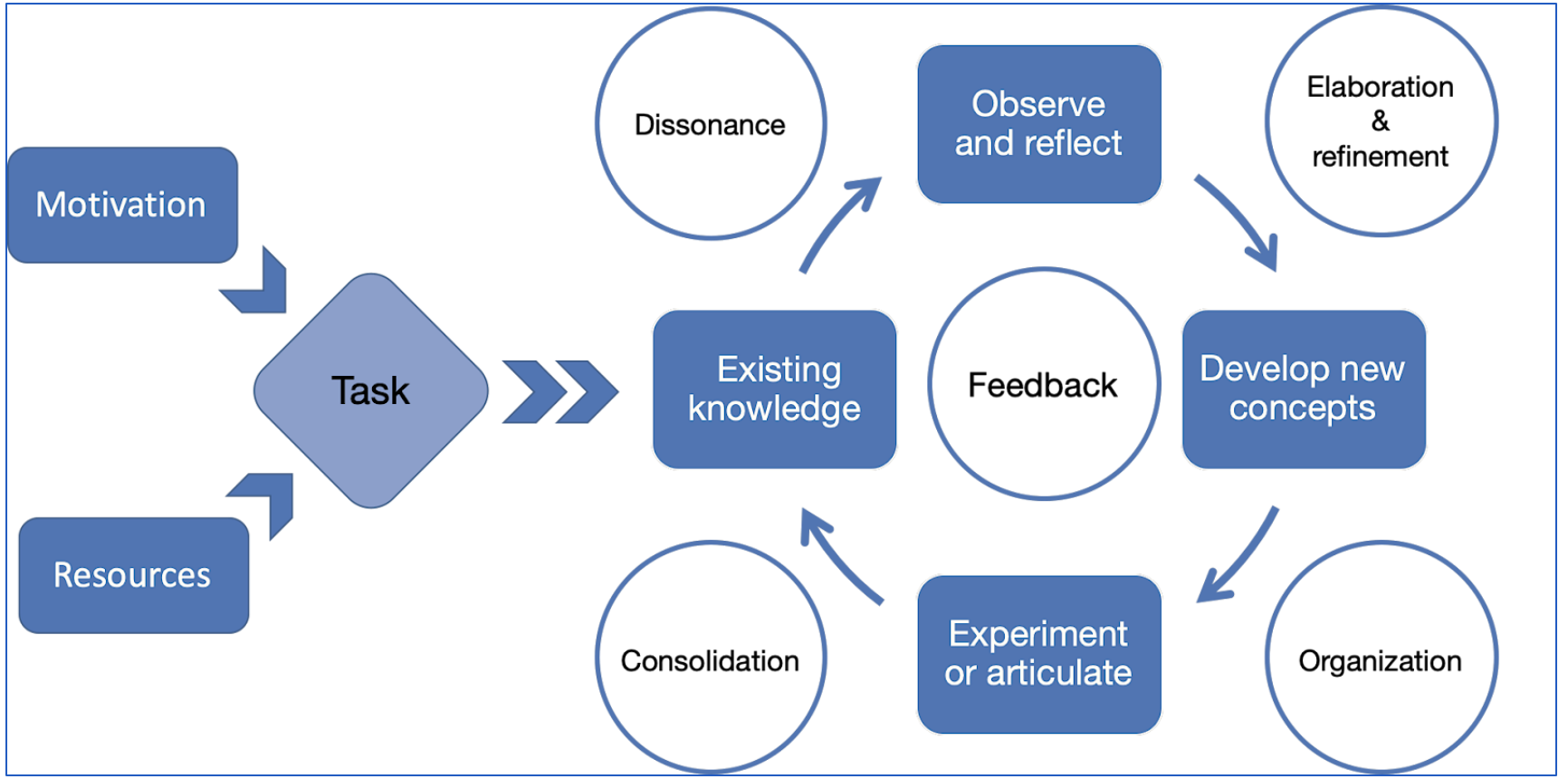
Adult Learning

- Behaviorism
- Cognitive
- Androgogy
- Learning Domains
- Blooms Taxonomy
- Miller's pyramid



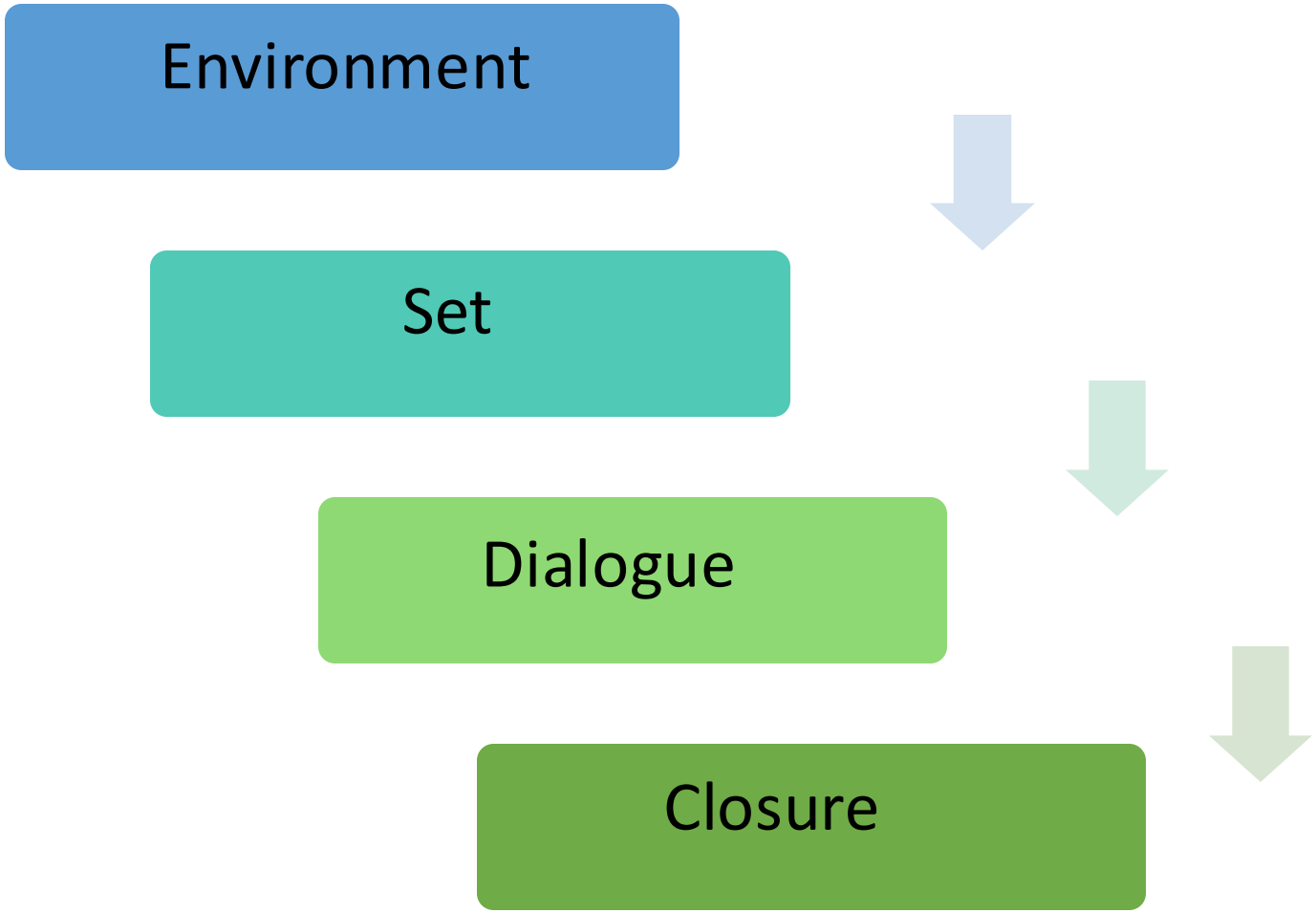
Kolb's Cycle of Experimental Learning

How Adults Learn



Adapted Taylor & H. Hamdy´s blended model of adult learning.

ATLS Structure



Interactive Teaching

Interactive Discussions

Scenario Based Learning

M 35 y/o F, fell down stairs, pregnant

I Unconscious

S Non reported

T Immobilized

Questioning Techniques

12 Tips

1. Ask ? to scaffold learning
2. Understand the role of open & closed ?
3. Use all levels of ?
4. Ask ? as a model of clinical reasoning
5. Probe don't Prod
6. Break away from I-R-E
7. Discuss in pairs
8. Think time after ?
9. Know when to stop ?
10. Listen to learner
11. Ask questions for a written response
12. Analyze the ? asked

Pylman, S. and Ward, A. (2020) Medical Teacher. Vol, 42 NO. 12, 1330.1336. 12 Tips for effective questioning in medical education.

Questioning Techniques

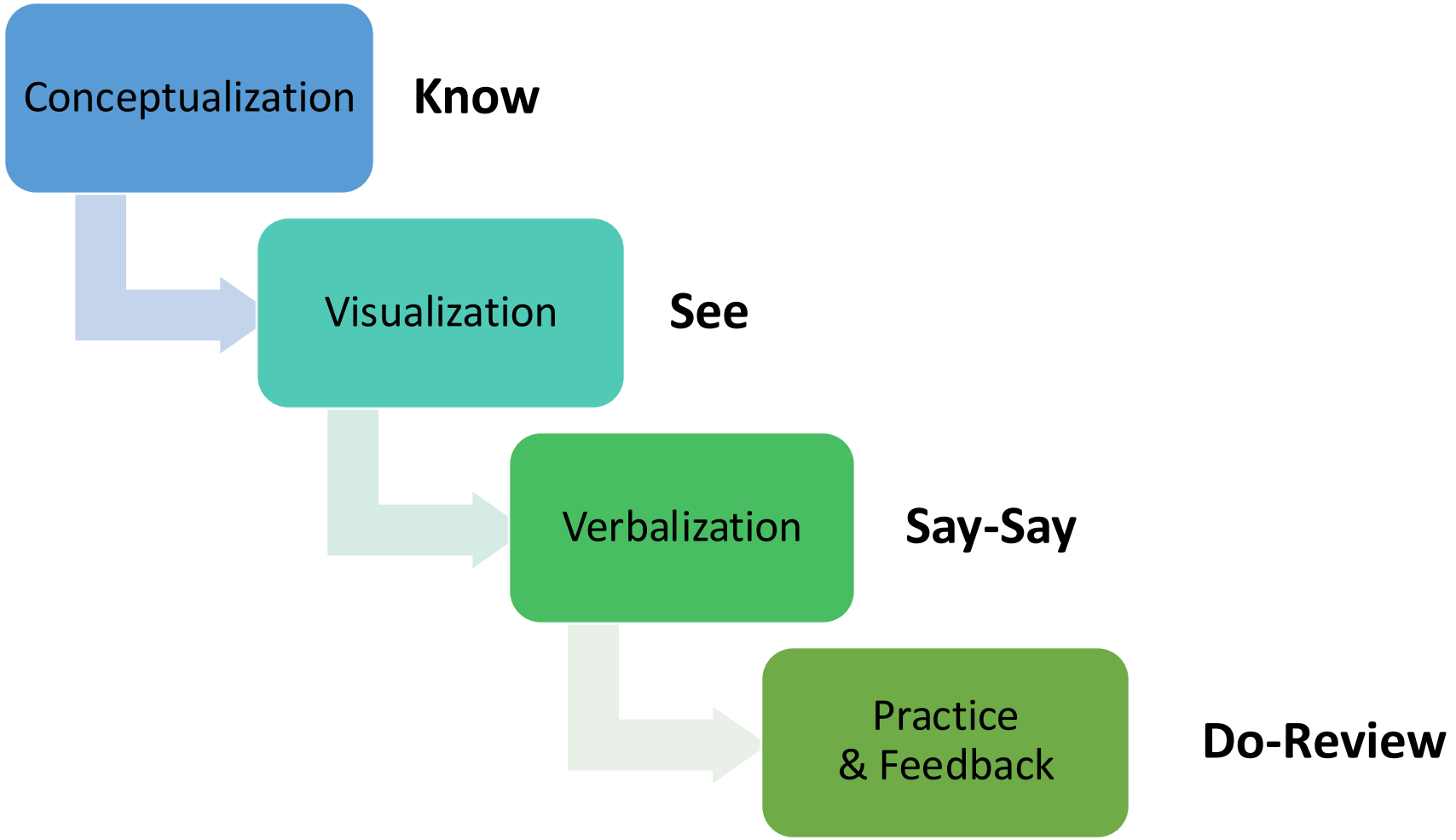
Criterion	Type	ATLS Example
Cognitive level	Lower-order	What does the A stand for in the ABCDE, algorhythm?
	Higher-order	Does this patient have a tension pneumothorax?
Structure	Structured	What are the components of the GCS?
	Open-ended (Unstructured)	Does this patient need to be transferred?
Convergence vs. Divergence	Convergent	What are the patient's vital signs?
	Divergent	Why does this patient need fluids?

Psychomotor & Cognitive Skills Stations

Cognitive Skills

Psychomotor Procedural Skills

Steps to Facilitate Acquisition of Psychomotor Skills



Feedback & Feedforward

Formative

Feedback

Skills Stations

&

Scenario Teaching

Feedforward

Action plan to improve performance

Feedback

Formative Feedback Mnemonic

A	**Acceptable**	timely, on-task (not person), related to ATLS goals, based on direct observation
B	**Balanced**	provide a max 2-3 key strengths
C	**Constructive**	aimed at learning for similar cases in the future
D	**Doable**	specific, feasible within context, adjusted to the level of clinical experience

Summative Assessment

Assessment

- Measurement of learning compared to defined standards
- Evaluates learning at the end of the learning period

Summative Assessment

Formative Assessments	Summative Assessments
Pre-Course MCQ	Post-Course MCQ
Interactive Discussions	Skills Stations
Skills Station	Initial Assessment Test
Initial Assessment Practice	
Triage	

Simulation

Principles

- Learning Objectives
- Safe learning environment
- Fidelity
- Suspended disbelief
- Feedback

Types of Simulators

- Low fidelity
- High fidelity

Looking Back & Looking Forward

IC Pilots

ATLS 11th Edition IC Pilots							
	COUNTRY						
PARAMETER	AUSTRALIA	SPAIN	USA	USA	BRAZIL	BRAZIL	ECUADOR
Site	Adelaide	Madrid	Jackson, MS	New Brunswick, NJ	Sao Paulo	Sao Paulo	Quito
Date	July 21-23/23	July 21-23/23	Sept. 23-23/23	Sept. 18/23	Oct. 13-14/23	Oct.14-15/23	
CD	1	1	1	1	1		1
Coordinator	2	1	2	1	1	1	2
Faculty	5	3	3	3	3	3	3
Participants	12	16	8	7	12	12	12
Duration	2.5 day	2.5 day	1.5 day	1 day	2 day	2 day	2 day
Time received manual b/c	8 weeks	6 weeks	4-5 weeks	5 weeks	4-5 weeks	4-5 weeks	4 weeks
MCQ b/c	8 weeks	2 weeks		1 week			
Student Scores	74-100%	14 passed - 1st 4 passed 2nd attempt	60-90%	all passed 1st attempt	N/A	N/A	N/A
Faculty Scores	83-100%	2 passed -1st 1 passed 2nd attempt	63-73%	N/A	N/A	N/A	N/A
time to review manual (P)							
3-4 hours	5		1-4 hours	3	1	1	1
>4hours	7	16		4	11	11	11
time to review manual (F)							
3-4 hours	2		3	3	3	3	3
>4	4	3					

Schedules

2.5 days	12 - 16 participants
2 days	9 - 12 participants
1.5 days	9 participants
1 day	6 participants

Multiple Choice Questions (MCQ)

Pre-Test

WHY?

Stimulate reading before IC

HOW?

Send 4 – 6 weeks before IC

SCORE?

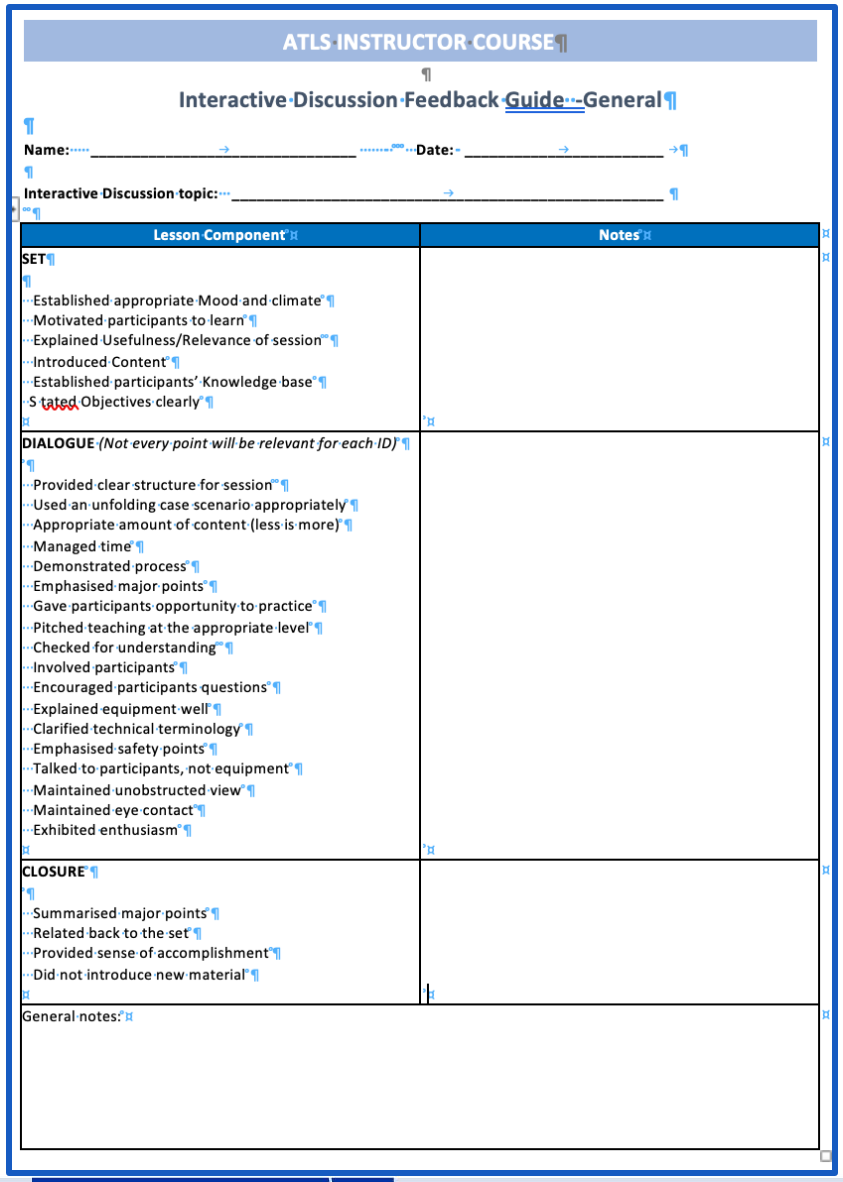
80%

Scores >80% receive a letter saying they passed, no score

Scores < 80% receive a letter saying they have to check specific chapters, can take test again

Coordinator: generates scores and questions missed for educator to review during the IC

Forms



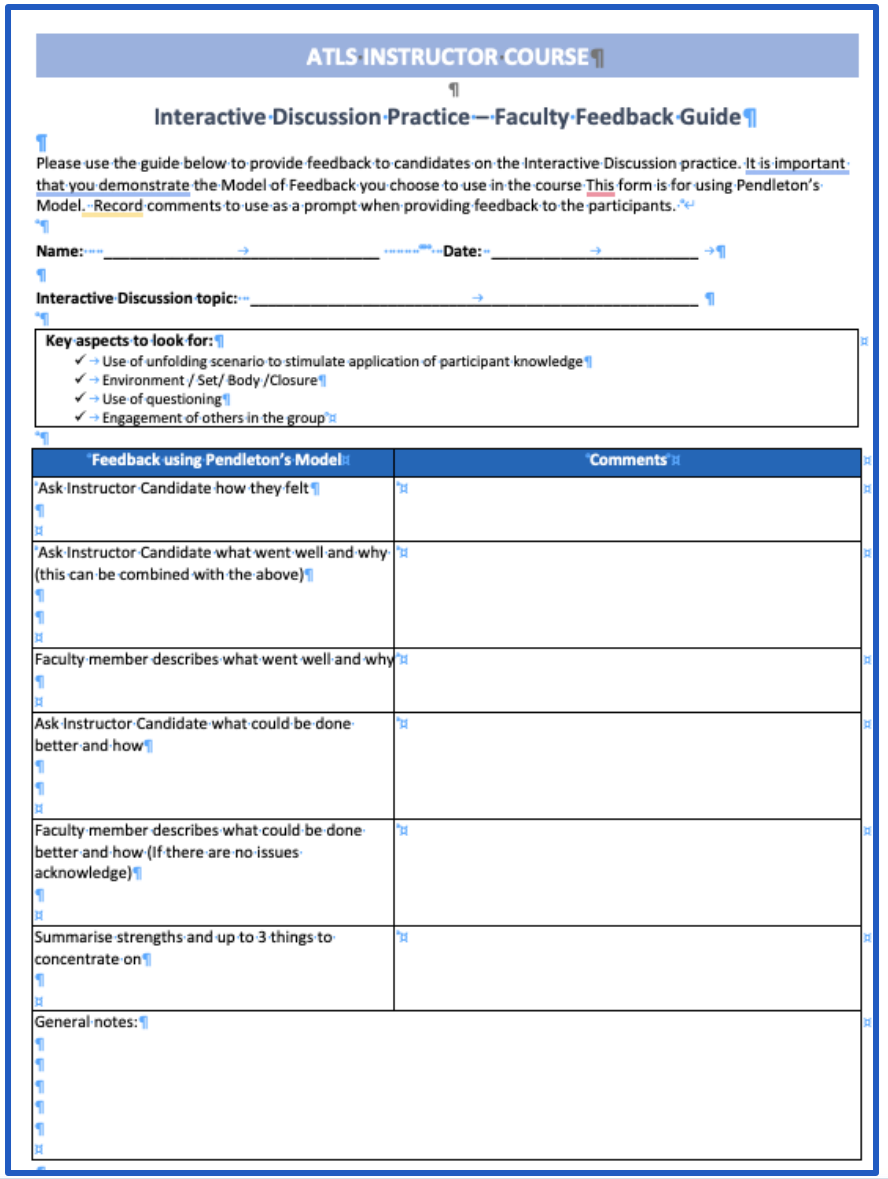
ATLS INSTRUCTOR COURSE

Interactive Discussion Feedback Guide – General

Name: _____ Date: _____

Interactive Discussion topic: _____

Lesson Component	Notes
SET Established appropriate Mood and climate Motivated participants to learn Explained Usefulness/Relevance of session Introduced Content Established participants' Knowledge base S tated Objectives clearly	
DIALOGUE *(Not every point will be relevant for each ID)* Provided clear structure for session Used an unfolding case scenario appropriately Appropriate amount of content (less is more) Managed time Demonstrated process Emphasised major points Gave participants opportunity to practice Pitched teaching at the appropriate level Checked for understanding Involved participants Encouraged participants questions Explained equipment well Clarified technical terminology Emphasised safety points Talked to participants, not equipment Maintained unobstructed view Maintained eye contact Exhibited enthusiasm	
CLOSURE Summarised major points Related back to the set Provided sense of accomplishment Did not introduce new material	
General notes:	



ATLS INSTRUCTOR COURSE

Interactive Discussion Practice – Faculty Feedback Guide

Please use the guide below to provide feedback to candidates on the Interactive Discussion practice. It is important that you demonstrate the Model of Feedback you choose to use in the course This form is for using Pendleton's Model. Record comments to use as a prompt when providing feedback to the participants.

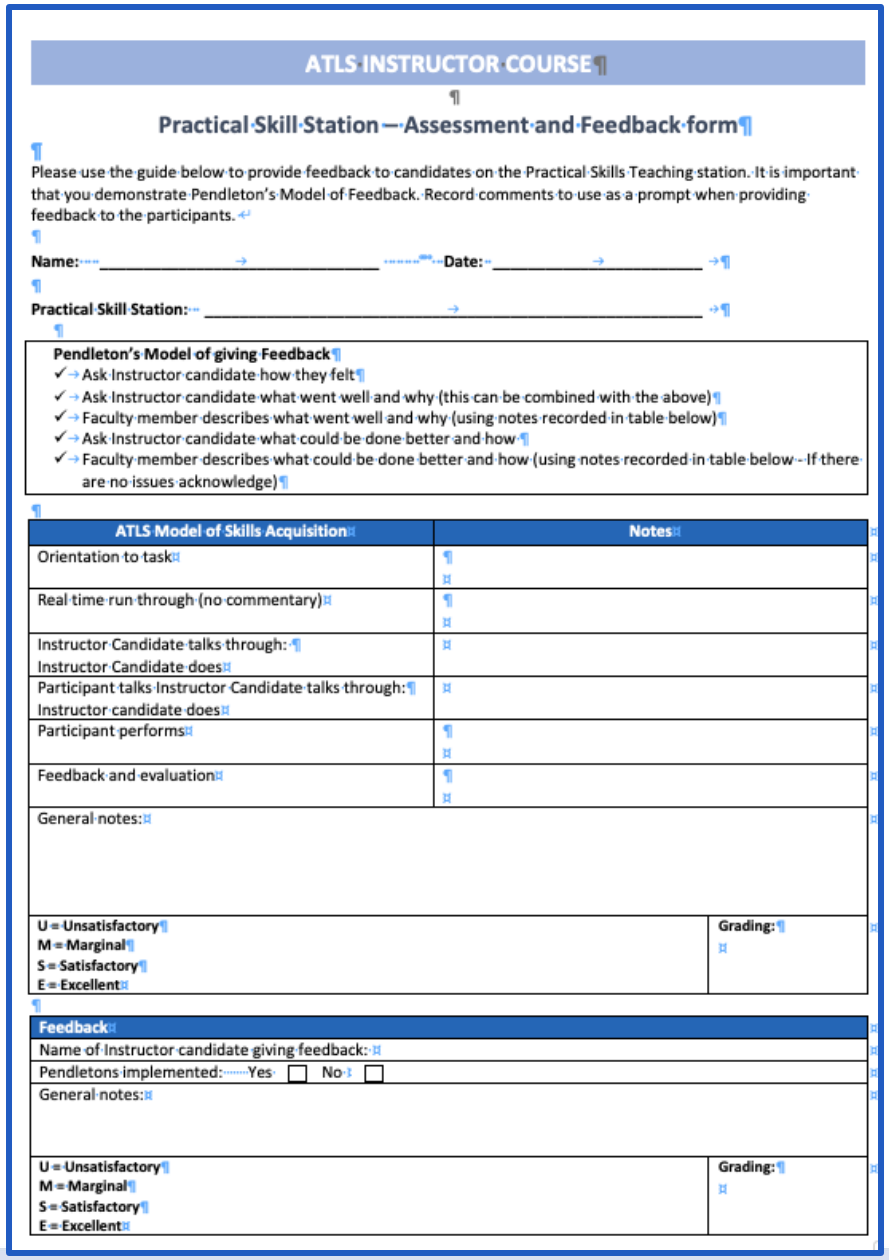
Name: _____ Date: _____

Interactive Discussion topic: _____

Key aspects to look for:
- ✓ → Use of unfolding scenario to stimulate application of participant knowledge
- ✓ → Environment / Set/ Body /Closure
- ✓ → Use of questioning
- ✓ → Engagement of others in the group

Feedback using Pendleton's Model	Comments
Ask Instructor Candidate how they felt	
Ask Instructor Candidate what went well and why (this can be combined with the above)	
Faculty member describes what went well and why	
Ask Instructor Candidate what could be done better and how	
Faculty member describes what could be done better and how (If there are no issues acknowledge)	
Summarise strengths and up to 3 things to concentrate on	
General notes:	

Forms



ATLS INSTRUCTOR COURSE

Practical Skill Station — Assessment and Feedback form

Please use the guide below to provide feedback to candidates on the Practical Skills Teaching station. It is important that you demonstrate Pendleton's Model of Feedback. Record comments to use as a prompt when providing feedback to the participants.

Name: _____ **Date:** _____

Practical Skill Station: _____

Pendleton's Model of giving Feedback

- ✓ Ask Instructor candidate how they felt
- ✓ Ask Instructor candidate what went well and why (this can be combined with the above)
- ✓ Faculty member describes what went well and why (using notes recorded in table below)
- ✓ Ask Instructor candidate what could be done better and how
- ✓ Faculty member describes what could be done better and how (using notes recorded in table below - If there are no issues acknowledge)

ATLS Model of Skills Acquisition	Notes
Orientation to task	
Real time run through (no commentary)	
Instructor Candidate talks through: Instructor Candidate does	
Participant talks Instructor Candidate talks through: Instructor candidate does	
Participant performs	
Feedback and evaluation	
General notes:	

U = Unsatisfactory **M = Marginal** **S = Satisfactory** **E = Excellent**	**Grading:**

Feedback
Name of Instructor candidate giving feedback:
Pendletons implemented: Yes ☐ No ☐
General notes:

U = Unsatisfactory **M = Marginal** **S = Satisfactory** **E = Excellent**	**Grading:**

Forms

ATLS INSTRUCTOR COURSE

PART 1 – Instructor Course Candidate Evaluation Form

Used to evaluate Instructor Course Candidate in the ATLS Instructor Course. The Instructor Candidate should provide the completed form for review by the monitoring course director at the ATLS Provider Course. The course director will complete part 2 of the form when evaluating the candidate's performance.

Name of Candidate: _____ Date: _____

Course Code: _____ Course Location: _____

Course Director: _____ Course Educator: _____

O Instructor Course

Criteria	Rating	Notes
Rating: Y = YES (meets standards without reservation), N = NO (does not currently meet standards)		
Microteaching		
1. Demonstrates appropriate presentation organization (e.g., introduction, main points, examples, conclusion).		
2. Reflects a thorough understanding of the central concepts of the assigned topic.		
3. Uses clear and concise language that is appropriate and consistent with the audience's level of knowledge.		
4. Facilitates effective classroom discussion and interaction.		
5. Creates a stimulating and positive learning environment.		
6. Provides a comprehensive and effective presentation that meets the learning objective.		
7. Manages time appropriately.		
Skills Station		
1. Uses ATLS skills model to teach their allocated skill.		
2. Provides rationale and objectives for the station.		
3. Demonstrates the skills correctly (visualization/silent run-through).		
4. Instructs the student to verbalize the skill while they perform verbalization.		
5. Provides positive and corrective feedback to students.		
6. Involves all students by using questioning and group discussion techniques.		
7. Exhibits good time management and ensures all objectives for the station are satisfied.		
Initial Assessment Station		
1. Ensures familiarity with the equipment in the room.		
2. Adequately prepares nurse and patient.		
3. Controls scenario appropriately and provides appropriate cues.		
4. Provides effective feedback.		
5. Adheres to ATLS principles throughout the scenario.		
6. Describes the purpose of and states the steps in the initial assessment skills station.		
7. Manages student behaviours constructively and appropriately.		
Overall Course Performance		
1. Actively engages in discussions, small group activities, and tries new techniques learned in the course.		
2. Arrives punctually and fully participates in all aspects of the course.		
3. Demonstrates supportive behaviour to other participants and contributes to the team-teaching process.		
4. Demonstrates a commitment to ATLS principles and philosophies throughout the course.		
5. Provides relevant and supportive feedback to other participants during teaching sessions.		

Specific strengths of instructor candidate as observed during the instructor course:

_____

_____

_____

Specific areas requiring monitoring and improvement at the instructor candidate's (next) Provider course:

_____

_____

_____

_____Proceed as Instructor Candidate to ATLS Course → _____Repeat Instructor Course

ATLS INSTRUCTOR COURSE

PART 2 – Instructor Candidate Evaluation Form

Used to evaluate Instructor Candidate during monitoring at their first ATLS Provider Course. The Instructor Candidate should provide the completed form for review by the monitoring course director at the ATLS Provider Course. The course director will complete Part 2 of this form and submit to ATLS office

Name of Candidate: _____ Date: _____

Course Code: _____ Course Location: _____

Course Director: _____ Course Educator: _____

O Candidate monitoring during provider course

Criteria	Rating	Notes
Rating: Y = YES (meets standards without reservation), N = NO (does not currently meet standards)		
Microteaching		
8. Demonstrates appropriate presentation organization (e.g., introduction, main points, examples, conclusion).		
9. Reflects a thorough understanding of the central concepts of the assigned topic.		
10. Uses clear and concise language that is appropriate and consistent with the audience's level of knowledge.		
11. Facilitates effective classroom discussion and interaction.		
12. Creates a stimulating and positive learning environment.		
13. Provides a comprehensive and effective presentation that meets the learning objective.		
14. Manages time appropriately.		
Skills Station		
8. Uses ATLS skills model to teach their allocated skill.		
9. Provides rationale and objectives for the station.		
10. Demonstrates the skills correctly (visualization/silent run-through).		
11. Instructs the student to verbalize the skill while they perform verbalization.		
12. Provides positive and corrective feedback to students.		
13. Involves all students by using questioning and group discussion techniques.		
14. Exhibits good time management and ensures all objectives for the station are satisfied.		
Initial Assessment Station		
8. Ensures familiarity with the equipment in the room.		
9. Adequately prepares nurse and patient.		
10. Controls scenario appropriately and provides appropriate cues.		
11. Provides effective feedback.		
12. Adheres to ATLS principles throughout the scenario.		
13. Describes the purpose of and states the steps in the initial assessment skills station.		
14. Manages student behaviours constructively and appropriately.		
Overall Course Performance		
6. Actively engages in discussions, small group activities, and tries new techniques learned in the course.		
7. Arrives punctually and fully participates in all aspects of the course.		
8. Demonstrates supportive behaviour to other participants and contributes to the team-teaching process.		
9. Demonstrates a commitment to ATLS principles and philosophies throughout the course.		
10. Provides relevant and supportive feedback to other participants during teaching sessions.		

Specific strengths of instructor candidate as observed during the instructor course:

_____

_____

_____

Specific areas requiring monitoring and improvement at the instructor candidate's (next) Provider course:

_____

_____

_____

→ _____Proceed as Instructor

→ _____Repeat ATLS Course as Instructor Candidate

Summary of Changes

- MCQ Pre-test

  Added new learning theories
- Interactive Discussions

  Unfolding scenario
- Questioning techniques

  More developed - 12 tips
- Skills:

  Know, See, Say-Say, Do-Review

- Formative Feedback

  ABCD
- Simulation
  - Learning Objectives
  - Safe learning environment
  - Fidelity
  - Suspended disbelief
  - Feedback
- Summative Assessment


감사합니다
Natick
Grazie
Danke
Ευχαριστίες
Dalu
Obrigado
Thank You
Köszönöm
Tack
Спасибо
Dank
Gracias
谢谢
Merci
Seé
ありがとう

COMMITTEE ON TRAUMA 2025

ATLS Global Symposium

March 14–16 | Chicago, IL

INTERACTIVE TEACHING IN ATLS

- Elizabeth Vallejo de Solezio, Ph.D.

- March 15, 2025

ACS AMERICAN COLLEGE OF SURGEONS

CHAPTER STATEMENT

Active engagement of learners energizes the classroom, promoting partnership between facilitators and learners in the teaching and learning process. This aligns with adult learning principles that emphasize problem-centered, experience oriented, goal driven, and dynamic environments.

OBJECTIVES

1. Define interactive learning and teaching.
2. Discuss the factors involved in managing interactive discussions.
3. Explain scenario-based learning.
4. Assert the interactive approach in ATLS.
5. Describe the facilitator's role in managing group dynamics

INTRODUCTION

- Active learning methods sharpen critical thinking, fundamental to developing analytical reasoning.
- The ATLS Interactive Discussions make learning more personally relevant and interesting. And, interaction between learners and facilitator transfers learning to clinical practice and allows learning through reflection.
- Scenario-Based Learning (SBL), a form of experiential learning, allows students to learn with real life scenarios where knowledge is applied rather tan merely recited.

Scenario–Based Learning in ATLS

- ATLS incorporates SBL in the Interactive Discussions, Skills Stations, and Initial Assessment evaluating stations.
- Uses the ATLS Model for teaching discussion, demonstration, and psychomotor skill practice.
- Provides numerous feedback opportunities based on participants' patient assessments, interventions, and prioritization of treatments.

Benefits of Scenario Based Learning

- Encourages active learning.
- Makes learning more personally relevant and interesting through interaction between learners and facilitator.
- Results in greater understanding of the content.
- Promotes transfer of new skills and knowledge to clinical practice.
- Engages collaborative and group functioning—essential skills in team-based trauma care.
- Incorporates various learning modes—listening, talking, reflecting, seeing, and doing, which enhances the learning experience.

Scenario-Based Learning - Impact on Learning

ATLS instructors are:

- facilitators of Interactive Discussions and Scenario-Based learning, not just information sources.
- learning facilitators and mentors teaching with learner-centered perspective that encourages to appreciate learning as a lifelong pursuit.
- promoters of participation, of sharing ideas and opinions, emphasizing problem-solving and knowledge application, and exploring and discussing attitudes about Atls core content.

Scenario-Based Learning - Impact on Learning

It is a team effort:

- Learners are not passive information receivers. They must come prepared.
- Learners must have:
  - thorough understanding of content
  - clear guidelines and goals to participate in all phases of the course—Interactive Discussions, skill stations and Initial Assessment evaluation stations.

Characteristics of an Interactive Discussion Facilitator

- Prepares content and methodology of assigned topics.
- Prioritizes discussion objectives and maintains control.
- Encourages clinical reasoning.
- Keeps discussion on topic.
- Adjusts questions to challenge learners at appropriate levels.
- Asks thought-provoking questions.
- Contributes ideas and facts without taking sides during controversie**s.**
- Avoids dominating the discussion and prevents others from dominating.
- Strives to be objective, patient, stimulating and restrained.
- Allows for silence and reflection.
- Encourages everyone to participate—collegial classroom and lively discussion.
- Provides clear closure reminding participants of the accomplished objectives.

Potential challenges and solutions of Interactive Teaching

- Interactive Teaching demands:
  - more flexibility and discussion control from the facilitator.
  - consideration of instructor, learner and group factors to effectively lead the discussions.
  - thoughtful evaluation of
    - preexisting knowledge and experience,
    - Attitudes
    - levels of precourse preparation,
    - group relationships, and
    - motivation of the participants.

Facilitator Factors

- The facilitator must:
  - thoroughly prepare to ensure positive learning outcomes for all participants.
  - ensure group dynamics and successful learning process instead of struggling with the content.
  - be confident and transmit confidence to the group, thus making the facilitation process easier.
  - manage time and focus on the objectives and the core material (The “ATLS way”, the first hour of treatment, etc).
  - elicit the content from the participants, rather than delivering the content to them.

Facilitator Factors

- Maintain control of the discussion.
- provide the opportunity and encourage all learners to participate.
- Support quite learners
- Redirect talkative learners (the quick responder, the rambling talker, the side conversation talkative learner).
- Manage negative learner emotions (Affect)

Pitfalls when using Scenario-Based Teaching

- The SBT sessions should remain interactive and not be converted into a lecture.
- Time management is extremely important.
- Good questionning is needed to maintain and guide the session, and to assess the learners.
- The facilitator should avoid answering a question posed and morphing the discussion into a lecture.

?

Chapter Summary

1. A learner-centered, scenario based, and interactive teaching style is the most effective educational techniques for facilitating learning. These methods are applied throughout the ATLS courses.
2. The ATLS interactive pedagogies encourage interest in the topic, promote efficient acquisition of material, model positive patterns of conduct, develop high motivation, foster team spirit and freedom of expression, and nurture the development of complex lifelong learning competencies.
3. The ATLS course actively engages interactive Scenario-Based Learning to motivate and inspire learners, achieve learner cognitive engagement, and foster learning.

COMMITTEE ON TRAUMA 2025

ATLS Global Symposium

March 14–16 | Chicago, IL

ATLS 11th Ed. Instructor Course: Teaching a Skill Station – What's New

John Sutyak, Ed.M., M.D., MAMSE, FACS

Chair, ATLS Steering Committee

ACS AMERICAN COLLEGE OF SURGEONS

Disclosures

Speaker(s) have no financial or other disclosures

Skills Training in the ATLS 11 Instructor Course

Taxonomies and progression from novice to expert

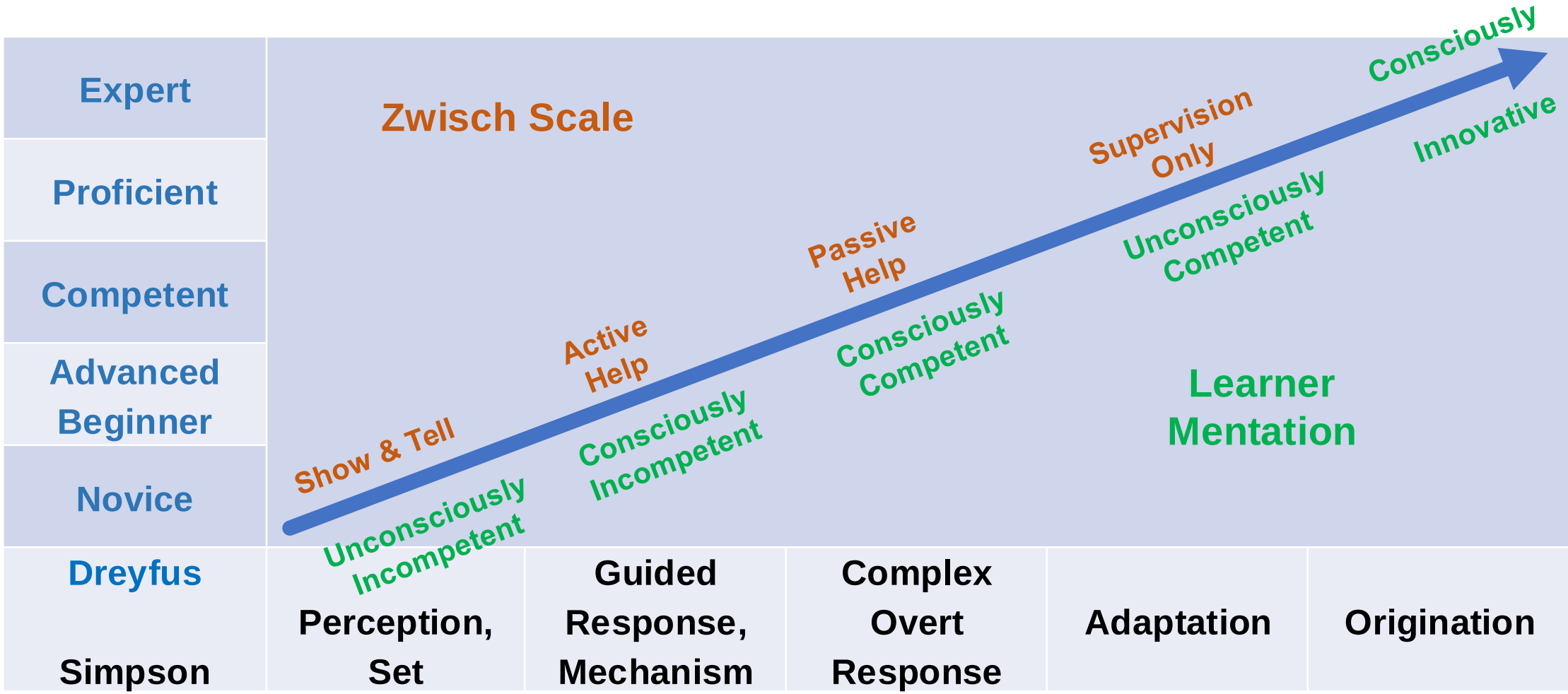
Steps of motor training and neurobiological support

Phase shift in stepwise training for ATLS 11th Course

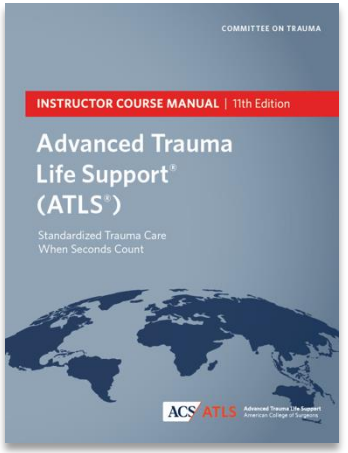
Cognitive versus psychomotor skills

Challenges for new instructors

Progression from Novice to Expert



Novice Skills Training: Phases



Know: Conceptualization

See: Visualization - Mimic Neurons

Hear: Instructor Verbalization - Motor Imagery

Say: Learner Verbalization - Motor Imagery

Do: Practice

Review: Reinforcement and correction – Feedback

Mastery and Autonomy: Muscle memory, not obtained in ATLS

Understand the cognitive elements of skill:

- Why it's performed
- When it's performed
- When it's not performed
- Precautions
- Anatomy
- Instruments and tools

See: Visualization

Observe a full demonstration of the skill with no verbalization

- Imprints - creates a mental map
- Concentration focused on visual input
- Skill performed (ATLS way) in real time
- Prepares the learner to imitate

Hear and Say: Verbalization

Narration of steps while skill is performed

- Links between what learner saw (visualization) and what learner will do (practice)
- **Hear** - instructor narrates during skill demonstration

  Concentration focused on aural input
- **Say** - learner (or group) narrates while instructor is performing

  Concentration combining visual and aural

Motor Imagery

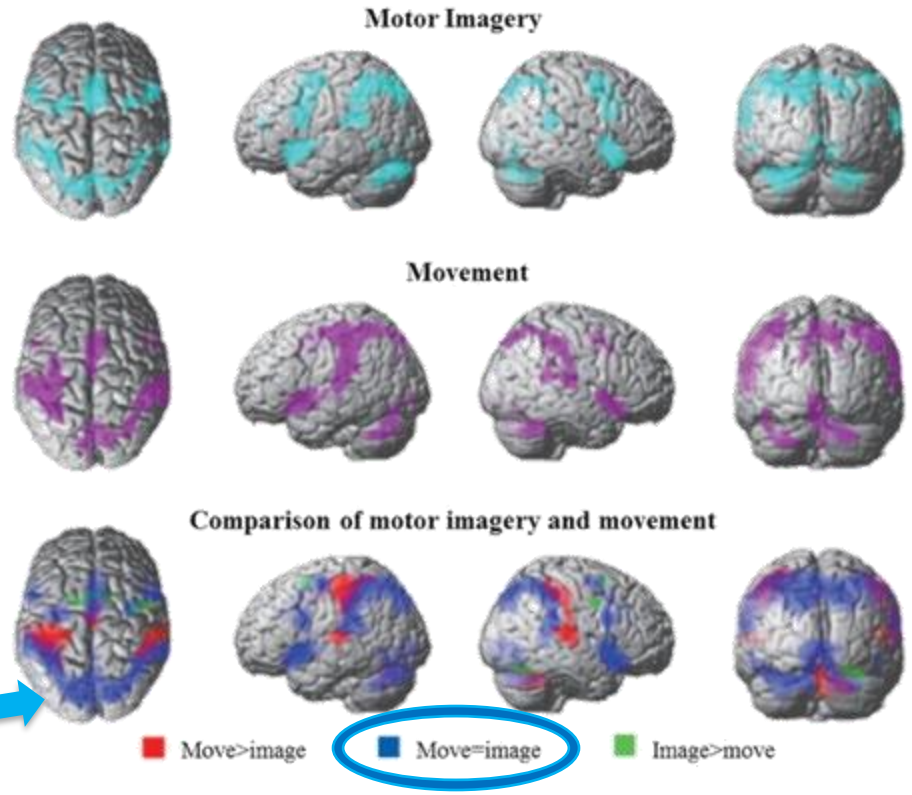
- See
- Hear
- Say

Motor Imagery

Value of See, Hear, Say

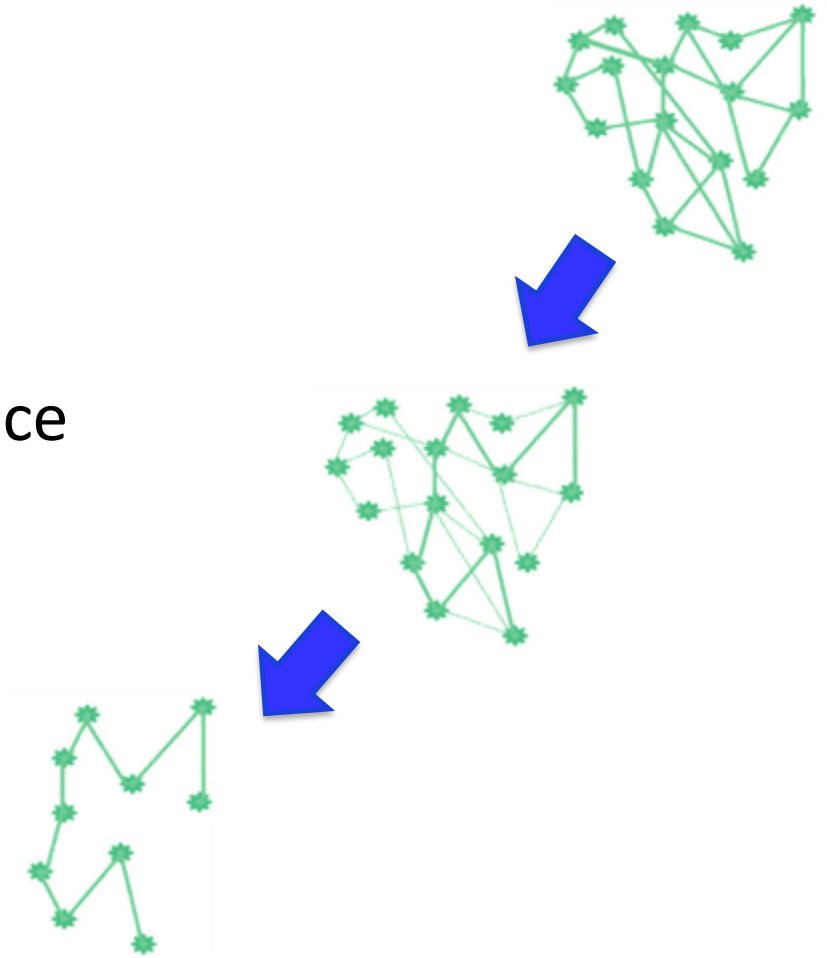
- Functional MRI
- Nearly identical pathways activated with mental imagery as with motor performance
- Mental rehearsal = extra reps

Imagery and Performance Same Areas



Do and Review: Practice, Reinforcement, Correction

- Learner performs skill while verbalizing
- Positive reinforcement of correct performance
- Immediate correction of errors
- Fewer neural paths needed
- Faster transmission
- Improved performance



Neurobiological Effects

- Brain reorganization within 6 hours
- Activity shifted - frontal to motor / cerebellar
- Further re-organization occurs during sleep

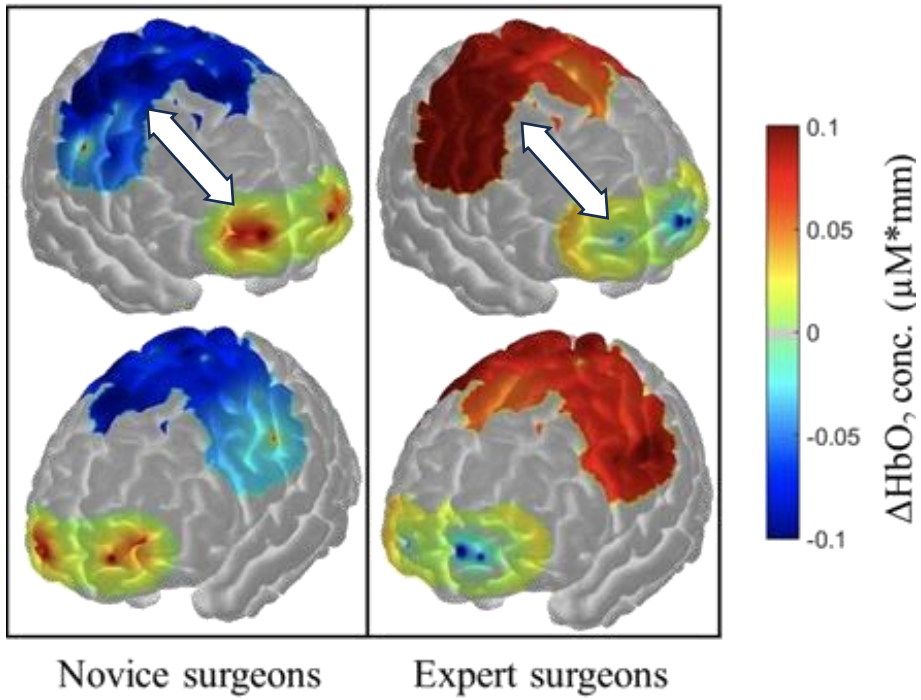
Mastery

Performs skill in practice situations w/o error

Autonomy

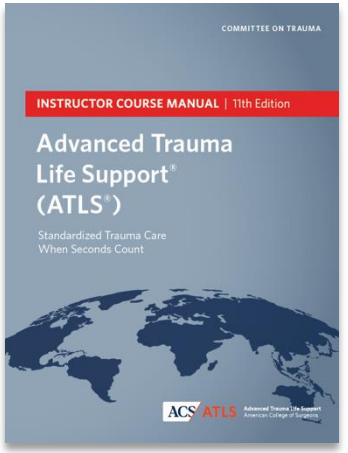
Regularly performs skill in real-life w/o error

Skill Mastery / Autonomy not ATLS goals



Nemani 2018

Novice Skills Training: Phases



Know: Conceptualization

See: Visualization - Mimi s

Hear: Instructor V otor Imagery

Say: I on - Motor Imagery

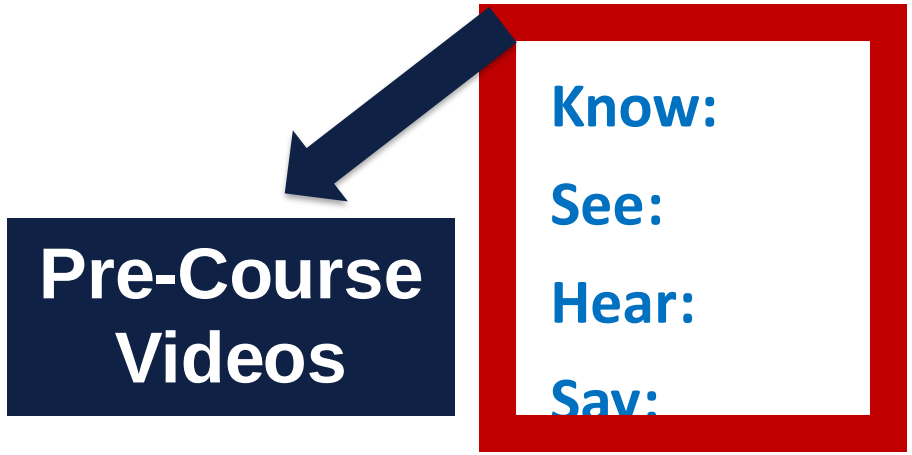
Do:

Review: Reinforcement and correction – Feedback

Mastery and Autonomy: Muscle memory, not obtained in ATLS

Nice theory, but how can I use in real Courses?

Novice Skills Training: Phase Shift



Know: Conceptualization

See: Visualization - Mimic Neurons

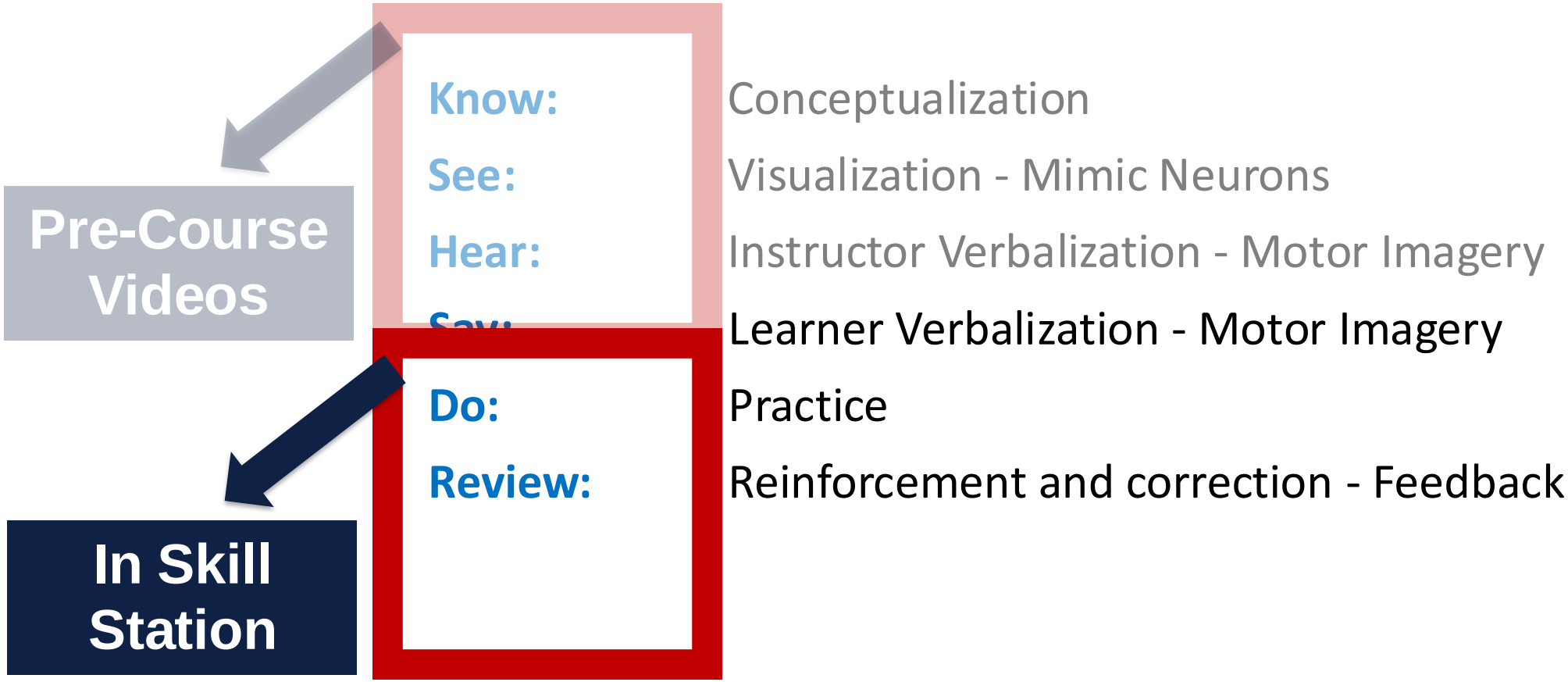
Hear: Instructor Verbalization - Motor Imagery

Say: Learner Verbalization - Motor Imagery

Do: Practice

Review: Reinforcement and correction - Feedback

Novice Skills Training: Phase Shift



Cognitive and Motor Skills

- Which skill acquisitions benefit from stepwise training
- Cognitive skills do not benefit from visualization

  e.g. x-ray reading, GCS score calculation, neurologic exam
- Psychomotor skills encompass mental and motor activities

  Require discrete motor actions, e.g. intubation, tube thoracostomy
- Pelvic stabilizer application is a unique ATLS team motor skill

Challenges Faced by New Instructors

- Tough to remember the thought processes of a novice
- Expert moved info from frontal cortex to motor strip and cerebellum

  Effective instructor consciously analyzes motor cortex activity and translates information back to the frontal cortex for dissemination
- Experts “chunk” - breaking a procedure into stages

  e.g. gaining access, dissecting, resecting, reconstructing, closing

  Expert facilitator breaks chunks into discrete steps

Challenges Faced by New Instructors

- Instructors may overestimate the skills of the learner
  - Reluctant to “insult the intelligence” of the learner
- Key is not intelligence but experience and skill
- Do not overestimate the complexity in basic skills training
  - Seemingly obvious techniques, properly taught and regularly reinforced, are more important than overly sophisticated ones
- Treat learners with respect, they will value the educational experience

COMMITTEE ON TRAUMA 2025

ATLS Global Symposium

March 14–16 | Chicago, IL

On Feedback & Feedforward

‘Something old, something new, something borrowed’

By Jacqueline Bustraan and Diane Leverone-Baker

ACS AMERICAN COLLEGE OF SURGEONS

Disclosure

We declare that we have no relevant or material financial interests that relate to the work on this topic.

Outline of this session after this SET

1. Illustrate key elements in the Feedback & Feedforward topic/chapter in manual
2. Do the MCQ's on this part
3. Demo a part of 'Feedback & Feedforward', as intended to be in the 11th Edition IC
4. Room for reflections with and from the audience
5. Closure of this session on F&F

What's new … (or made more explicit)

1. Emphasis on the importance of feed**forward**
2. Importance of psychological safety
3. Less emphasis on feedback models as such, more on underlying principles
4. It's about receiving feedback too

What's 'borrowed' … the ABCD for formative feedback in ATLS

A	Acceptable	Timely, on task (not on person), related to ATLS goals, based on direct observation
B	Balanced	Provide max. 2-3 strong key points and max. 2-3 key points to develop/improve (and leave the rest)
C	Constructive	Aimed at learning for similar cases in the future
D	Doable	Specific, feasible within context, adjusted to the level of clinical experience

So in short

1. By adding ‘Feedforward’ as concept, we recommend to include in the feedback conversation what students can or should do in the future to further develop their performance in similar situations.
2. The ABCD principles in ATLS help to make feedback constructive and feasible to ‘adopt’.
3. Acknowledging feedback principles is way more important than the debate on what’s the ‘best’ feedback model.
4. Be aware of people having diffulties in receiving feedback. Keep in mind how to ensure pychological safety in supporting struggling students.

COMMITTEE ON TRAUMA 2025

ATLS Global Symposium

March 14–16 | Chicago, IL

Simulation in the Instructor Course

ATLS 11th Edition

Alicia Ponton-Carss MD, MSc, PhD

Chair SEAB

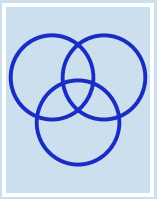
ACS AMERICAN COLLEGE OF SURGEONS

Disclosure

No conflict of interest to disclose.

Objectives

1. Identify the principles of simulation



2. Differences between the types of simulators

   Low Fidelity (LF) vs High Fidelity (HF)

3. Describe where / how simulation is used in the ATLS Course

4. Recognize and apply the simulation guidelines for instructors

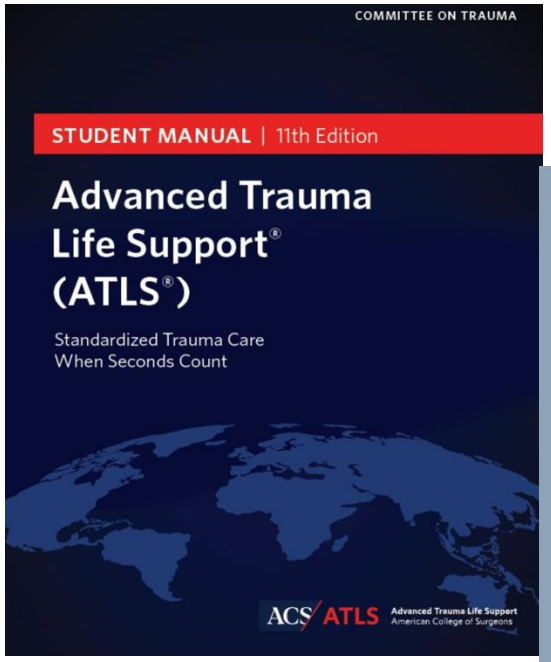
Simulation

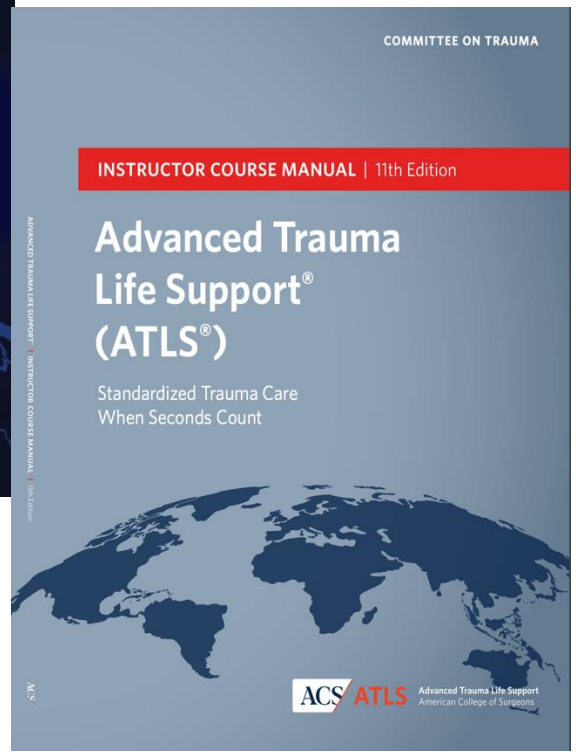
Definition:

"Simulation is the artificial representation of a real world process to achieve educational goals via experiential learning"

Flanagan B, Nestel D, Joseph M. Making patient safety the focus Med Educ. Published online 2004.

Simulation in ATLS

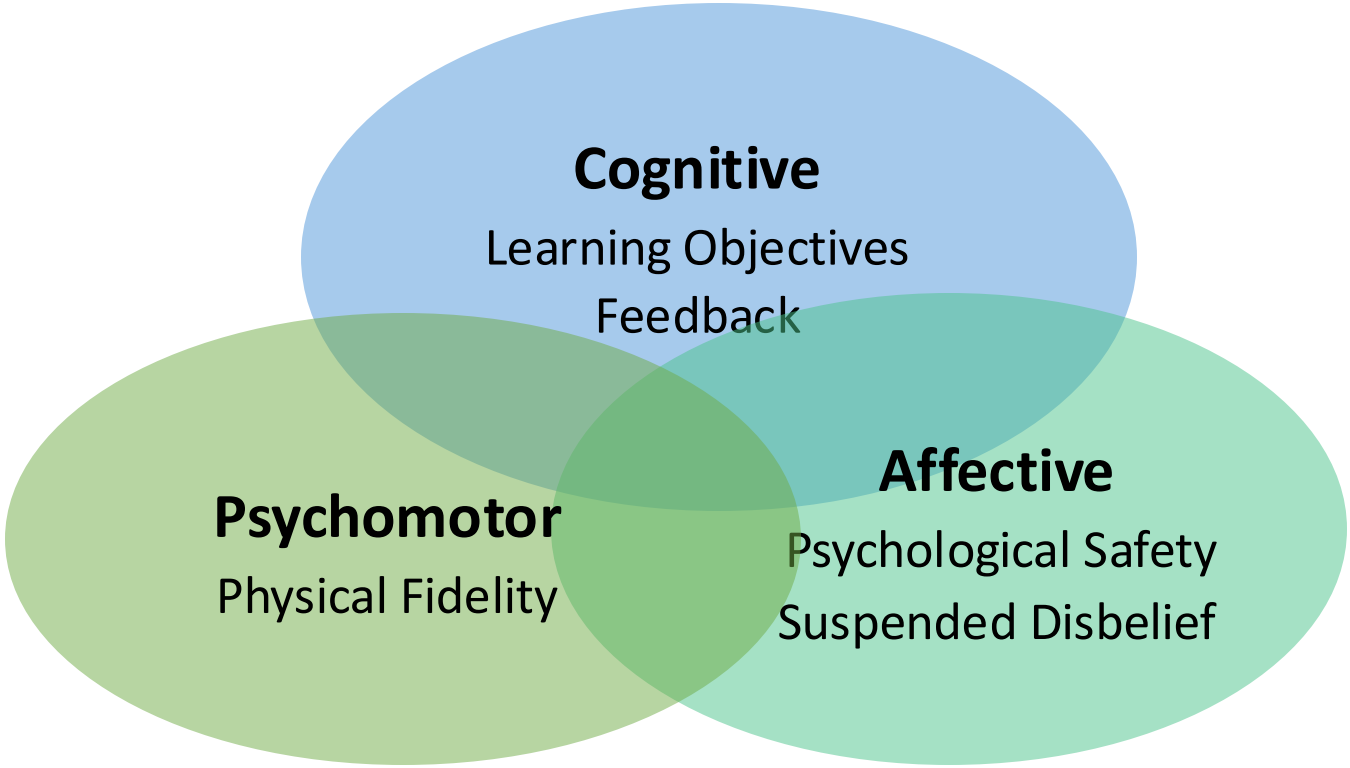




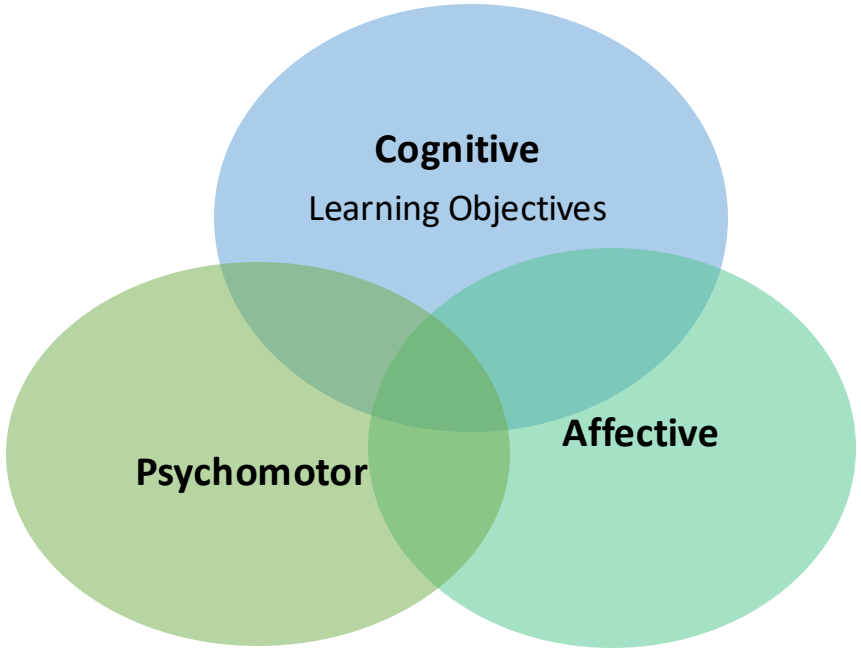
Implemented in:

- Interactive Discussion
  - Skills Stations
    - Initial Assessment
      - Team Training
        - Final Assessment

Principles of Simulation



Principles of Simulation

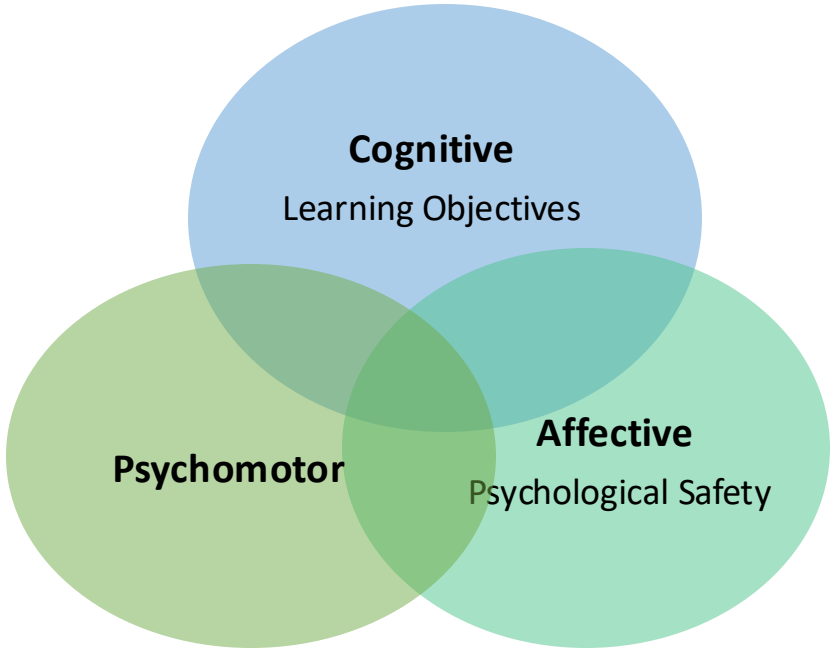


1. Learning objectives

- Clear - concise - realistic to drive the sim scenario
- Correspond to participant's knowledge
- Facilitate the development of clinical reasoning
- Evidence-based practice
- Be achievable within a timeframe.

Lioce et al. Standards of Best Practice: Simulation Standard III: Participant Objectives. Clin Simul Nurs. 2013;9

Principles of Simulation



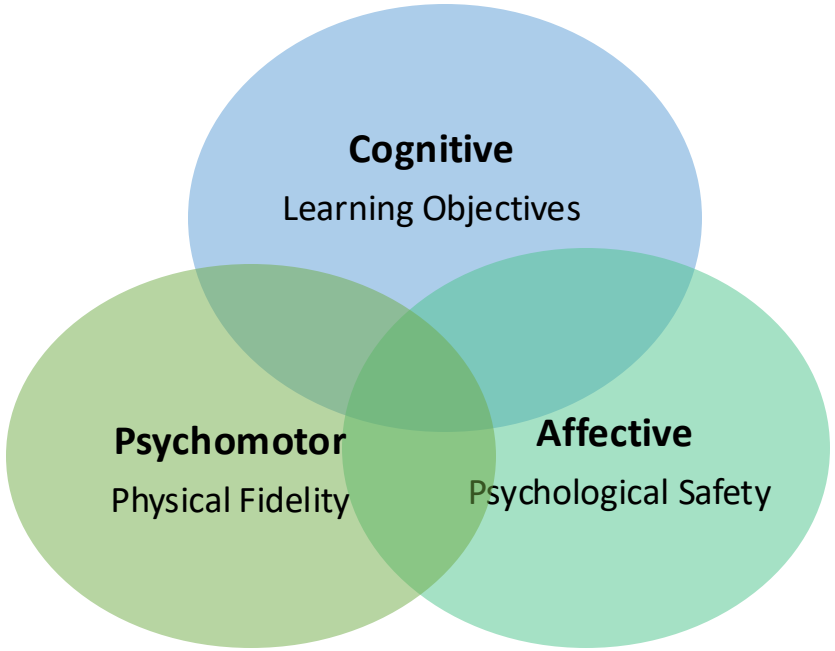
1. Learning objectives

2. Safe learning environment

Linked to:

- self-correcting behaviors with knowledge they will not be punished for mistakes
- Learners' prior knowledge
- Facilitator qualities
- Foster: Respect-Honesty-Trust

Principles of Simulation

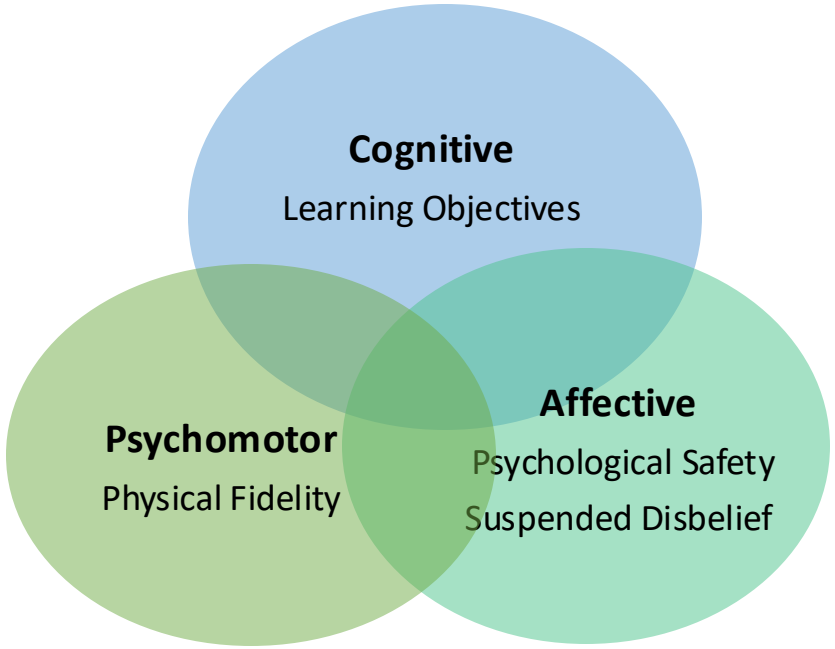


1. Learning objectives

2. Safe learning environment

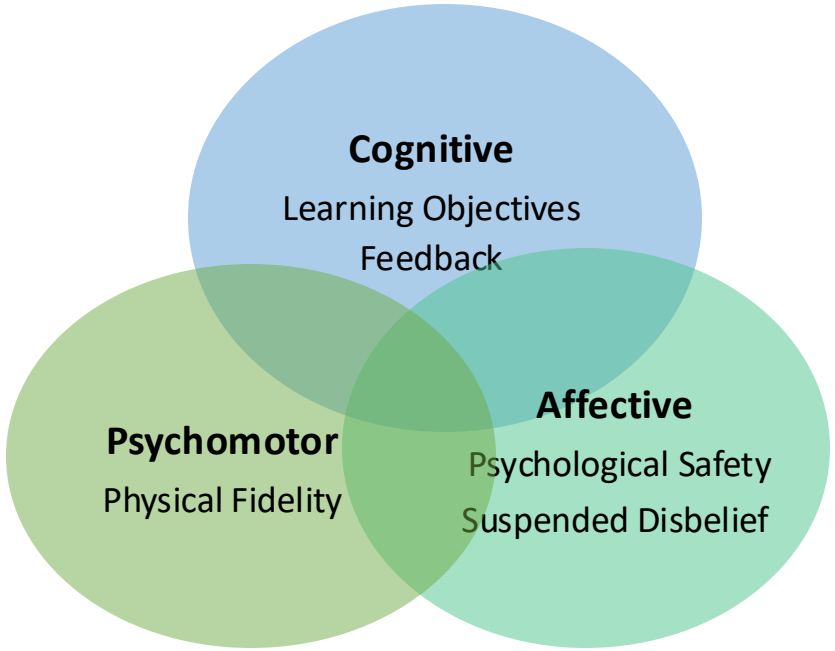
3. Fidelity Psychological
   Physical - environmental
   - equipment

Principles of Simulation



1. Learning objectives
2. Safe learning environment
3. Fidelity
4. Suspended disbelief
   - Fiction Contract
   - Emotional buy-in
   - Assigned meaning

Principles of Simulation



1. Learning objectives
2. Safe learning environment
3. Fidelity
4. Suspended Disbelief
5. Feedback **"3P":** Planning
   Pre-briefing
   Providing Feedback

Types of Simulators

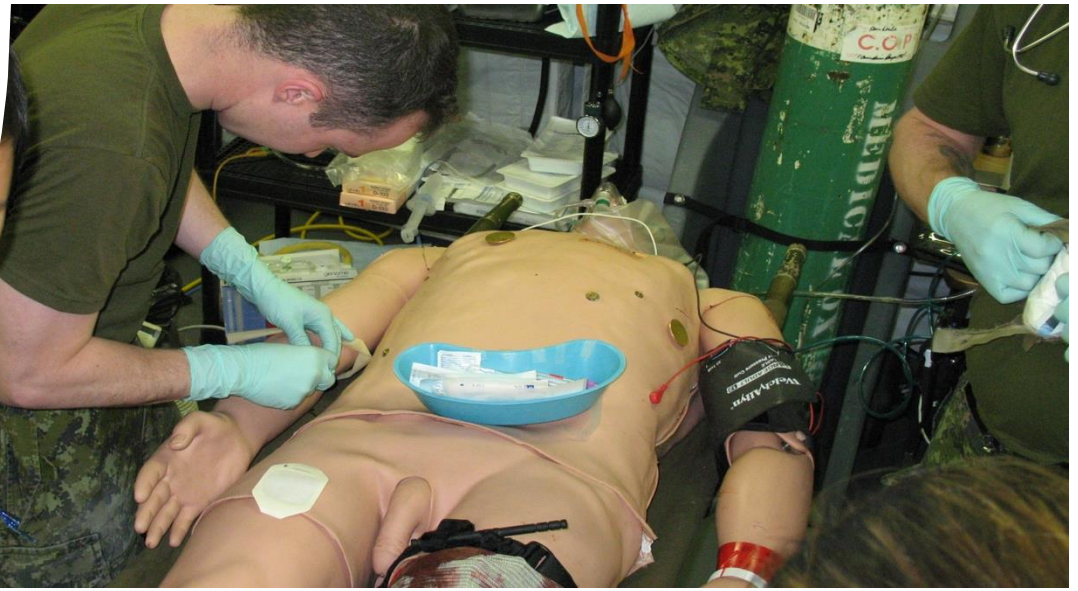
High Fidelity (HF)

Advantages

- Very close to reality; easy buy-in from learner
- Immediate feedback to the learner

*Manikins

- ✓ Don’t call in sick
- ✓ Can work long hours



Types of Simulators

High Fidelity (HF)

Disadvantages

- High cost

Limitations

- Faculty training
- Maintenance
- Sim lab
- Technical support

Types of Simulators

Low Fidelity (LF)

Advantages

- low cost
- moulage + managing environment = good learning outcome

Disadvantages

- limited to a specific anatomical region
- materials don't feel "as real"

High Fidelity vs Low Fidelity

Depends on:

- Learning objectives
- Environment
- Available resources
- Site needs
- Cost efficiency of simulators

"Practicing on simulators of increasing fidelity led to a superior transfer of a broad range of clinical skills"

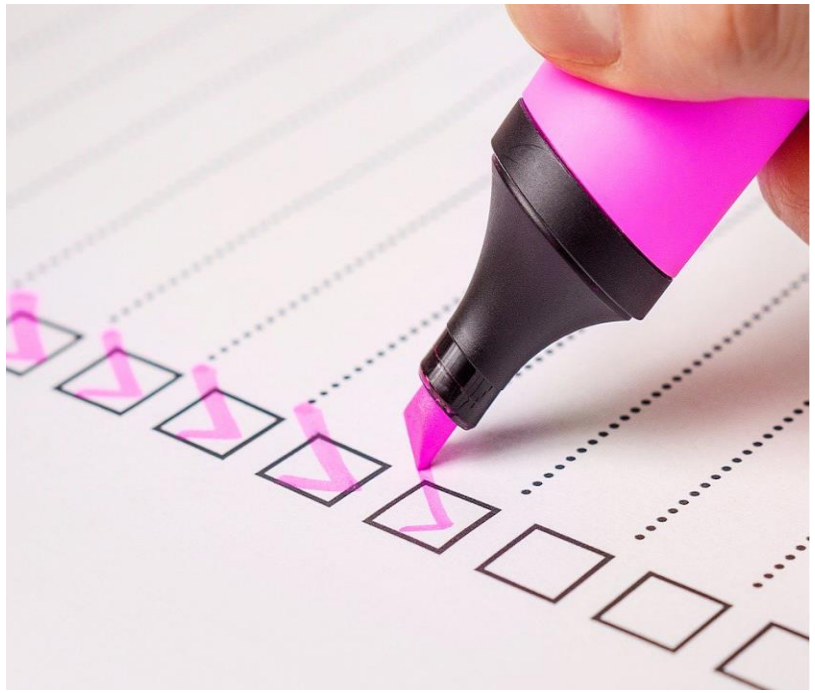
Brydges el at, Acad Med

Comparison of HF Manikin vs Standardized Patient

Depends on:

- Simulation objectives
- Level of desired fidelity
- HF: used to perform procedures e.g. intubation, defribrillation, emergency scenarios
- SP: patient interaction, communication
- Both effective

Simulation in ATLS Course



Simulation Checklist for Instructors

- ☐ Familiarize yourself with simulators
- ☐ High Speed Internet (for hybrid course)
- ☐ Check and know online teaching platform
- ☐ Review unfolding scenarios
- ☐ Know & practice skills to be taught
- ☐ Check task trainers and manikins to be used
- ☐ Check equipment

Simulation Summary

- Simulation is integrated into ATLS Course
- Improves learners' Cognitive, Affective & Psychomotor skills
- Highly effective learning experience when combined with:
  - Learning objectives
  - Psychological safe environment
  - Adequate level of simulators
  - Suspended disbelief
  - Feedback
- Simulator choice depends on learning objectives (task), level of learner & available resources

Thank you!

COMMITTEE ON TRAUMA 2025

ATLS Global Symposium

March 14–16 | Chicago, IL

Assessment of the ATLS Provider

11th Edition ATLS Instructor Course

James Colquitt PhD.

ACS AMERICAN COLLEGE OF SURGEONS

Disclosure

I have no relevant conflicts of interest, financial or otherwise.

Professional Roles

Associate Dean/Faculty Member

The Illinois College of Osteopathic Medicine at the Chicago School

Senior Educator and SEAB Member

American College of Surgeons (Volunteer)

Objectives

- Compare and contrast the 10th & 11th eds. IC
- Highlight key enhancements in the 11th ed. IC
  - Differences between formative & summative assessments
  - Principles of validity & reliability
  - Importance of change to assessor role
  - Assessment requirements
- Describe the use of pre-test questions in the instructor course assessment discussion

Structure and Organization

10th Edition

- Split into separate lessons
- Less focus on practical application
- Direct instruction approach

11th Edition

- Clear learning objectives at start
- Comprehensive theoretical foundation
- Integrated approach to content

Assessment Theory

10th Edition

- Brief overview of assessment concepts
- Limited discussion of bias
- Focus on practical implementation

11th Edition

- Detailed coverage of validity and reliability
- Comprehensive discussion of bias types:
  - Stereotyping
  - First-impression error
  - Halo/horn effect
  - Contrast effect

Assessment Theory

Definition & Purpose

- "Measurement of learning" (Tavakola, 2017)
- Measures performance against defined standards
- Drives learning focus (Pangaro, 2013)

Types of Assessment

Formative (for learning)

- During learning process
- Provides ongoing feedback
- Facilitates improvement

Summative (of learning)

- End of learning period
- Judges standard achievement
- Confirms minimum competency

Assessment Theory

Validity

- Measures what it claims to measure
- Enhanced by blueprinting
- Affected by technical flaws

Reliability

- Consistency in replication
- Interrater reliability
- Intrarater reliability

Bias Types

- Stereotyping
- First-impression error
- Halo/horn effect
- Contrast effect

Instructor Impact

10th Edition

- General practical tips
- Less emphasis on impact
- Focus on procedure execution

11th Edition

- Detailed table of instructor behaviors
- Explicit connection to assessment outcomes
- Specific mitigation strategies
- Focus on quality assurance

Miller's Pyramid

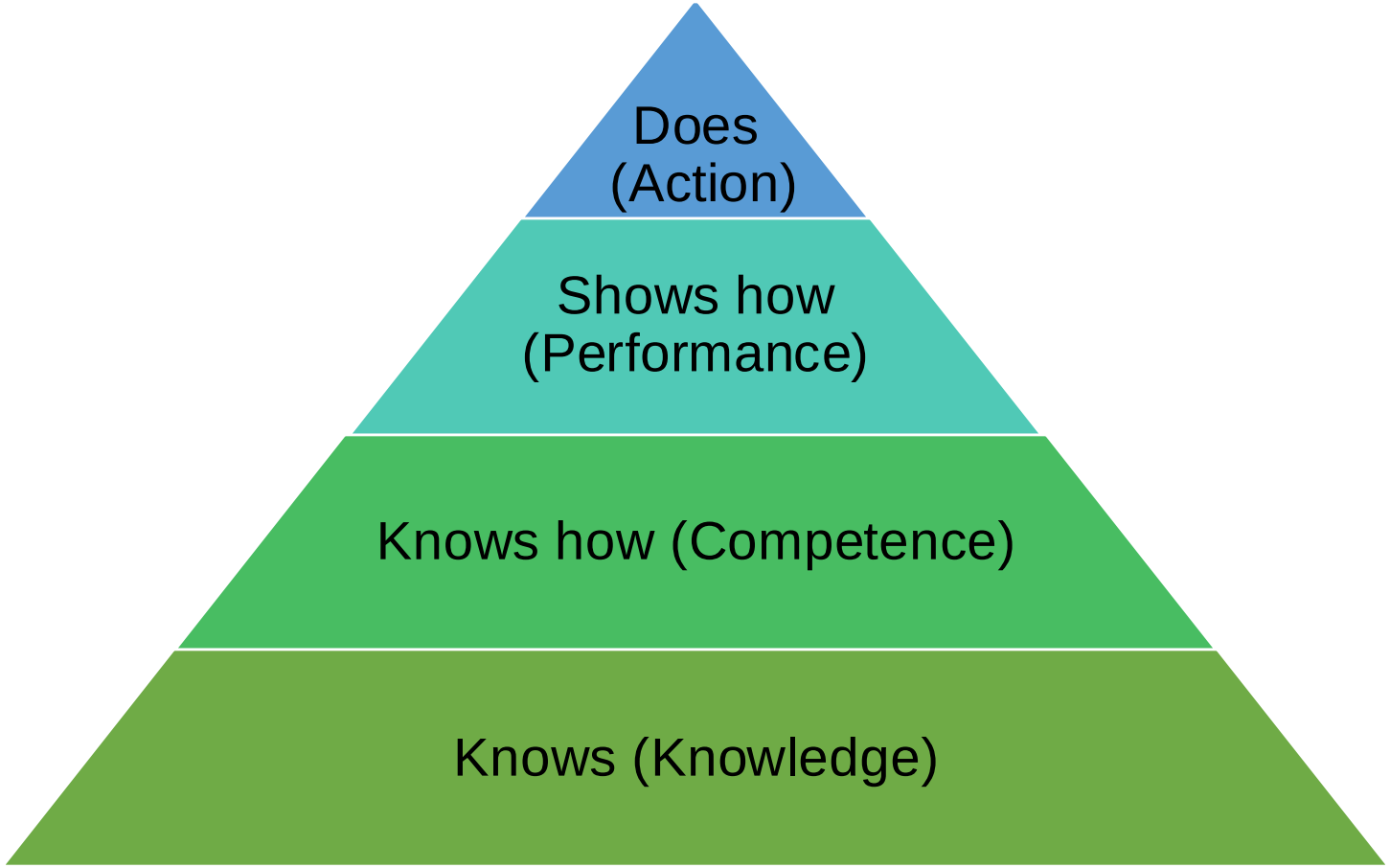
10th Edition

- No mention of Miller's Pyramid
- Less theoretical framework
- Focus on practical assessment tools

11th Edition

- Introduces Miller's Pyramid framework
- Links assessment tools to pyramid levels
- Explains progression from knows to does

Miller's Pyramid



Illustrates how medical education progresses from basic knowledge acquisition at the base to actual clinical performance at the apex, with each level building upon and requiring mastery of the levels below it.

Miller GE. The assessment of clinical skills/competence/performance. Acad Med. 1990;65(9):S63-S67.

Documentation of Assessment

10th Edition

- Basic form completion guidance
- Focus on mechanical aspects
- Less emphasis on documentation importance

11th Edition

- Detailed guidance on documentation
- Emphasis on note-taking importance
- Connection to assessment validity

Potential Instructor Selection

10th Edition

- Basic mention of instructor potential
- Limited selection guidance
- Less structured approach

11th Edition

- Specific selection criteria
- Organized around ATLS mission
- Detailed examples of desired behaviors

Practice vs Testing Station

10th Edition

- Basic role distinction
- Focus on mechanical differences
- Less guidance on transition

11th Edition

- Explicit role transition guidance
- Common instructor queries addressed
- Clear distinction between roles

Remediation Approach

10th Edition

- Specific remediation procedures
- Detailed poor performance management
- Standalone approach to remediation

11th Edition

- Integrated within assessment principles
- Focus on learning opportunity
- Connection to assessment validity

Key Steps in Remediation Process

Document

- Take detailed notes during observation of performance to support remediation decisions

Course Director Consultation

- Discuss with Course Director to determine if student should be offered opportunity to retake assessment

Pre-retake Feedback

- Provide specific feedback on initial performance to give opportunity for improvement

Emotional Support

- Be aware of heightened emotions following failed attempts and help learner remain calm before retake

Questions

(with the traditional ATLS Course *long pause*)

Key Trends in Updates

- Movement toward more comprehensive theoretical foundation
- Enhanced focus on assessment principles and their practical application
- Greater emphasis on understanding the "why" behind assessment decisions
- More structured approach to instructor potential selection and development