



Team Performance and Assessment in GIFT: Research Recommendations based on Lessons Learned from the Squad Overmatch Research Program

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Squad Overmatch for Tactical Combat Casualty Care (SOvM-TC3)



PEO
STRI

ARL



Team Development* (TD)
Information Exchange, Communication
Delivery, Supporting Behavior, Initiative,
and Leadership.

**Resilience and
Performance Enhancement (RPE)**
Self composure and tactical focus under
combat stressors.

**Advanced Situational
Awareness (ASA)**
Pattern/threat recognition
and decision making in complex
environments.

Integrated AAR
Integrates 4 domains
to reinforce skills
using Team Self-
Correction.

**Tactical
Combat Casualty Care (TC3)**
Individual and collective skills to
manage casualties in combat.

Building on Existing Warrior Skills Training

* Based on US Navy's
Team Dimensional
Training(TM) program.

Graduated Exposure to Stressors

Instruction → **Practice** → **Application**
Classroom/Mobile Gaming/Virtual Live



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**Squad Overmatch 2016 Experiment-
Integrated Training Approach Framework**



Day 1



AM: Classroom Instruction Across Domains

Day 2



Days 3 & 4



**Live Missions with
Increasing Complexity**



PM: AGfT-VBS3 Missions w/ Increasing Complexity



Mission 1:

- Experiment Squad

Mission 2

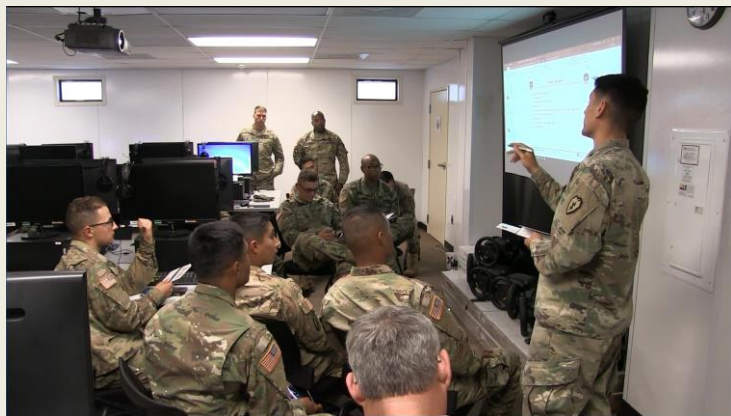
- Exp. & Control Squads

Mission 3

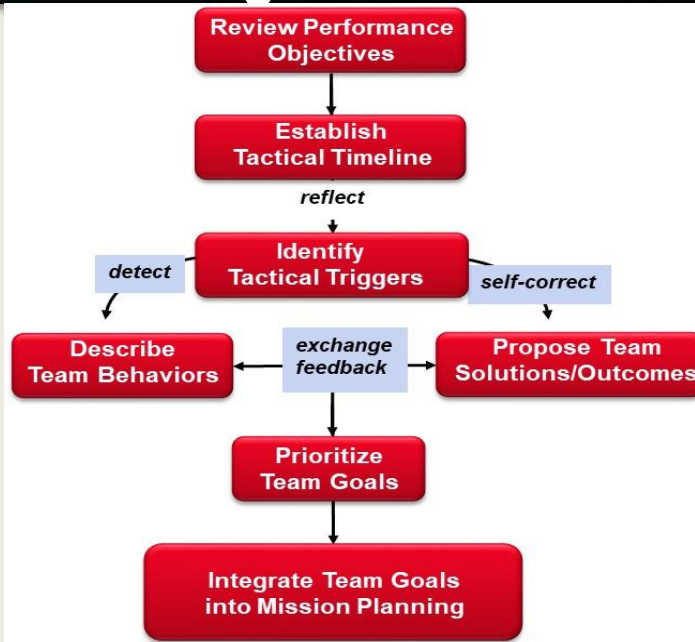
- Exp. & Control Squads



SOvM: Evidence-Based AAR: Key to Training Transfer



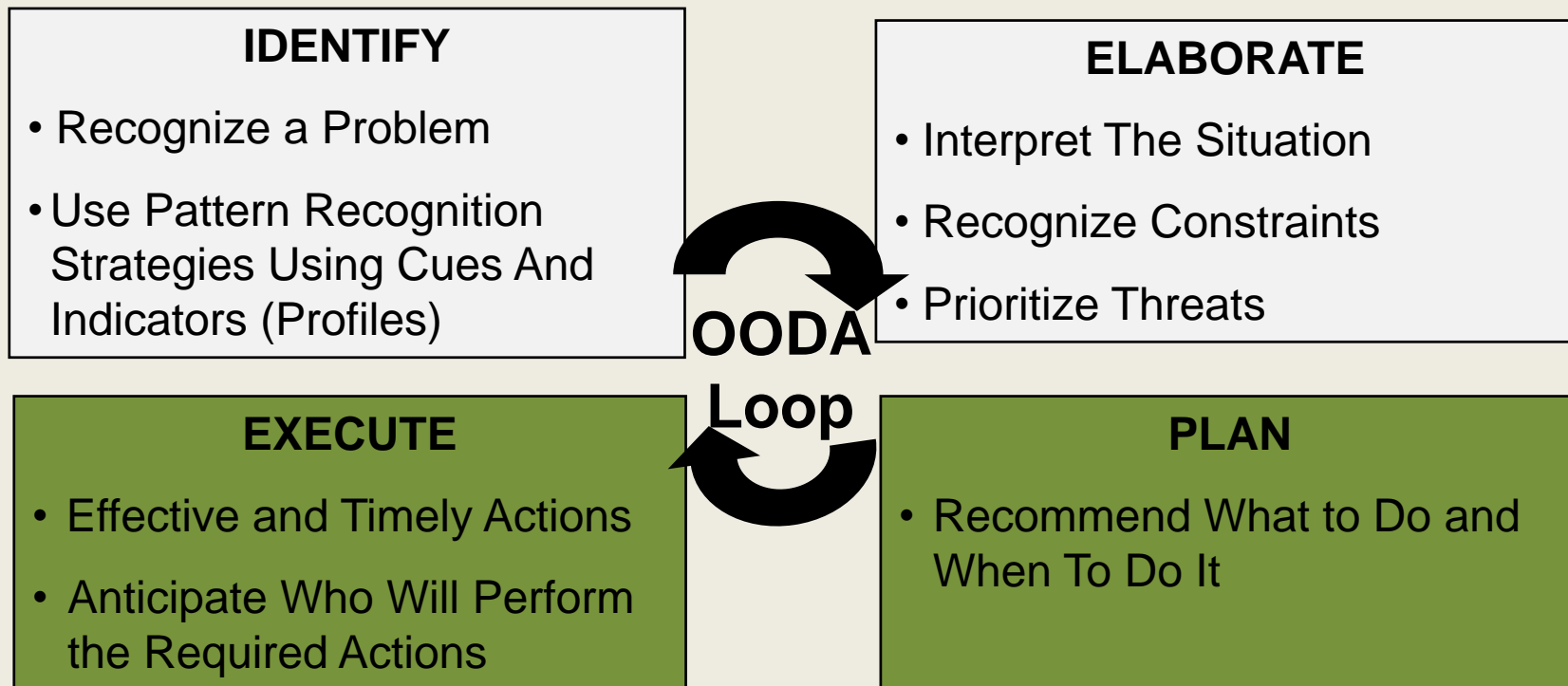
VBS3 Classroom, then
Outdoor Urban Training Site



- Focus on BOTH Team Taskwork AND Teamwork Skills
- Phases of Team Performance Development
- Team Leadership is Key to Team Development
- SBT Methods and Technologies are Key to Supporting Team Leadership to Achieve Team Performance that Transfers to Live Training



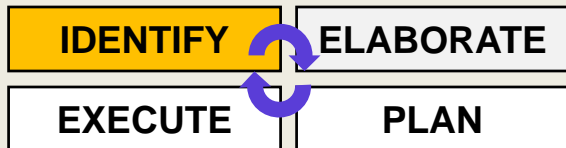
Team Tactical Decision Making Competency Model



Paris, Johnston, & Reeves (2000)
Johnston, Fiore, Paris, & Smith (2013)



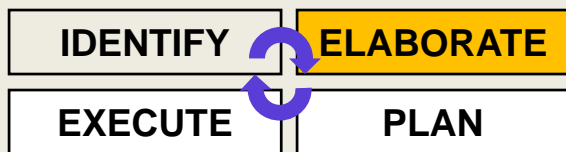
Team Tactical Decision Making Competency Model



SKILLS	TEAM BEHAVIORS (14)
➤ COMMUNICATION	➤ Create Interlocking Network – Optics, Intel Comms
➤ DATA COLLECTION	➤ Adopt Appropriate Criteria Based On Objective Cues Observed To Make Timely, Accurate Decisions
➤ ECONOMY OF ACTION	➤ Orient Observation Or Tracking Toward Potentially Hostile Players Or Good Guys And Ignore Neutrals
➤ ESTABLISH AN OBSERVATION BASELINE	➤ Establish A Baseline To Extract Normalcy & Look For Anomalies – Above And Below Baseline



Team Tactical Decision Making Competency Model (Cont.)



SKILLS

- CRYSTAL BALL - USE EVIDENCE-BASED APPROACH
- GENERATE EXPLANATORY STORYLINES
- IMAGINE ALTERNATIVE COURSES OF ACTION USING WHAT-IF SIMS
- DETECT AN UNFOLDING EVENT BY IDENTIFYING A PIECE OF IT AND INFERRING THE REST

TEAM BEHAVIORS (4)

- Take The Time To List Three Reasons For an Identification, Rather Than Going With A Hunch To Save Time.
- Construct Alternative Explanations For How Individual Pieces Of Evidence Might Be Related
- “Think Through” What Might Be Happening In An Unfolding Event
- View A Sequence Of Events As Being Tied Together

**VERBAL**
Information Exchange
(WHAT IS SAID)

- Knowing and using available information sources
- Passing information before being asked
- Providing situation updates within the Squad and to the Platoon

Communication Delivery
(HOW IT'S SAID)

- Using correct terms when describing an event
- Providing complete reports
- Being brief and summarizing information
- Providing clear description

Supporting Behavior
(ASSISTING)

- Recognizing and correcting others' errors
- Providing back-up when others are struggling
- Requesting back-up when you are struggling

Leadership / Initiative
(COACHING)

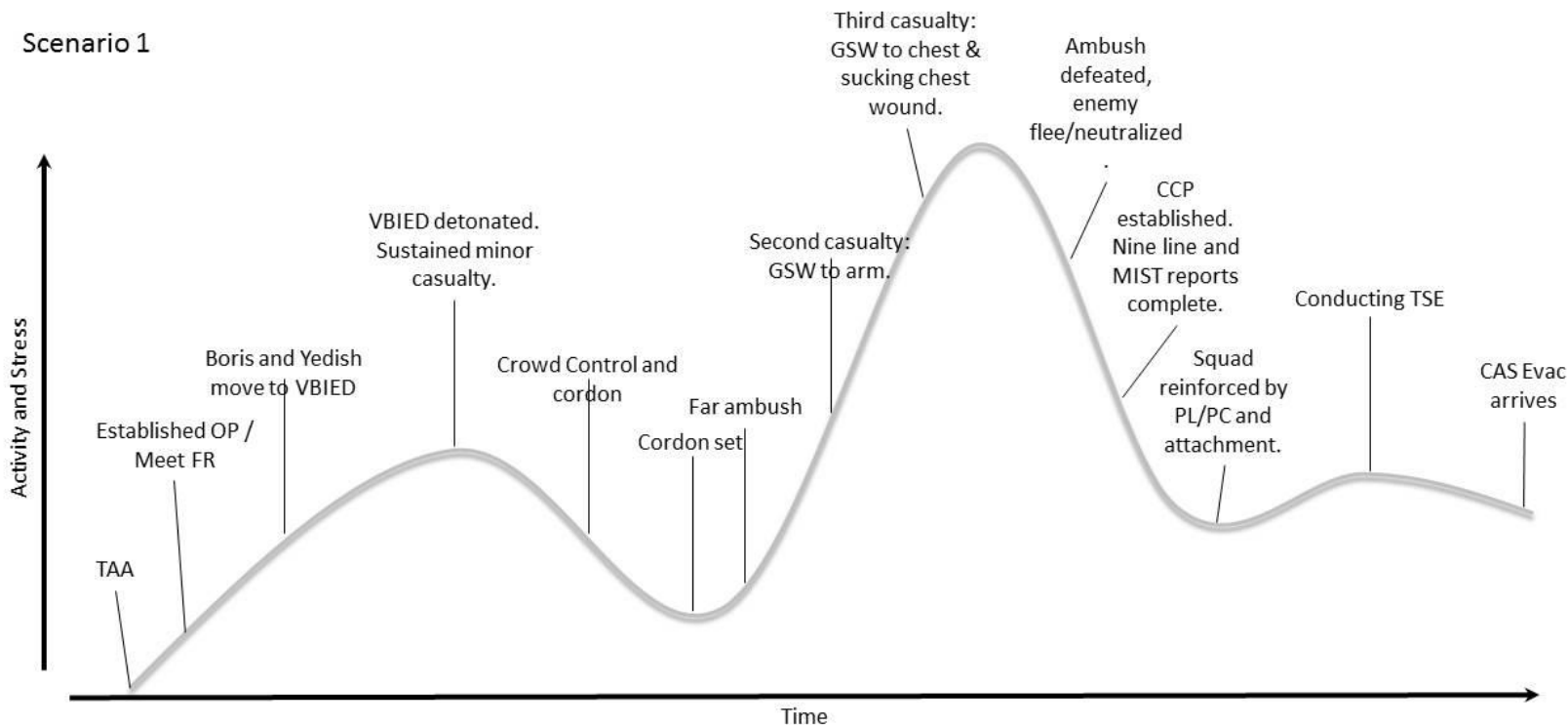
- Providing guidance as the situation changes
- Stating priorities as the situation changes
- Adapting to new requirements and guidance

BEHAVIORAL

Smith-Jentsch, Cannon-Bowers, Tannenbaum, and Salas (2008)



Scenario 1



- Platoon Mission: Provide security and stability within T-Town.
- Squad Task: Conduct zone reconnaissance and establish a presence in T-Town IOT baseline area and collect intelligence about the WOFTAR faction.



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Translating Competency Models into Event-Based Training Scenarios (Cont.)



	PERFORMANCE OBJECTIVES	M2 EVENTS								
		1	2	3	4	5	6	7	8	9
	Advanced Situation Awareness									
9	Employs guardian angel / geometries of observation		X		X		X			
10	Verbalizes nature of target nonverbal behaviors		X		X					
	Team Development									
16	Squad leader gives direction to separate into two LP/OPs	X								
23	Backup is provided to the squad member engaging in the interview		X		X					
24	Communicates a situation update up the chain of command		X		X					
25	Communicates changes in priority from chain of command to other team members		X		X					
26	Provides complete and accurate medical reports							XXX		XXX
	Tactical Combat Casualty Care									
34	Returns fire/provide security; weapons up; scans for enemy; fires weapon							X		X
35	Provides MANDOWN Report to Squad Leader							X		X
36	Provides casualty status info to medic							X		X
37	Establish security / provide cover after injury occurs, TMs face outward from casualty (360); guns up, looking for enemy. TMs lay suppressive fire to provide cover							X		X
38	Waits for suppressive fire or other cover before retrieving casualty							X		X
39	Retrieves casualty							X		X
40	Treats casualty							X		X
41	Squad Leader directs TLs to suppress enemy to maintain tactical focus							X		X
42	Squad Leader collects medical and tactical info							X		X
43	Squad asks higher for guidance in further care of civilian casual							X		
44	Squad leader determines capability to continue mission							X		X
45	Assigns medical & tactical resources to establish CCP							X		X
46	Send up first 5 lines of 9-line report; Complete, accurate, brief, and clear reporting							X		X
47	Medic provides advanced care							X		
48	Directs TMs to provide care							X		
49	Provides medical updates to Squad Leader; completes MIST report, and 9-Line							X		
50	Squad leader decides that squad remains combat effective and decides to move forward with the mission								X	
51	Consolidates CCP									X
	Total Objectives Per Event	15	7	1	5	2	1	22	3	19



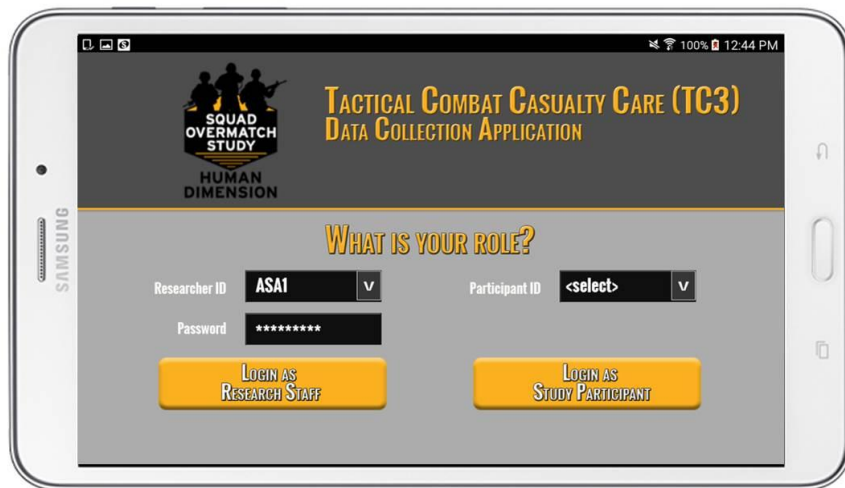
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Measures Development & Application: Mobile Performance Assessment Tool

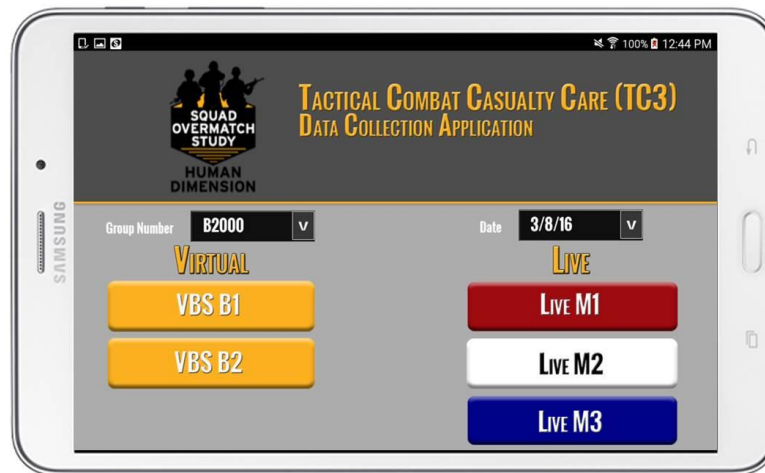


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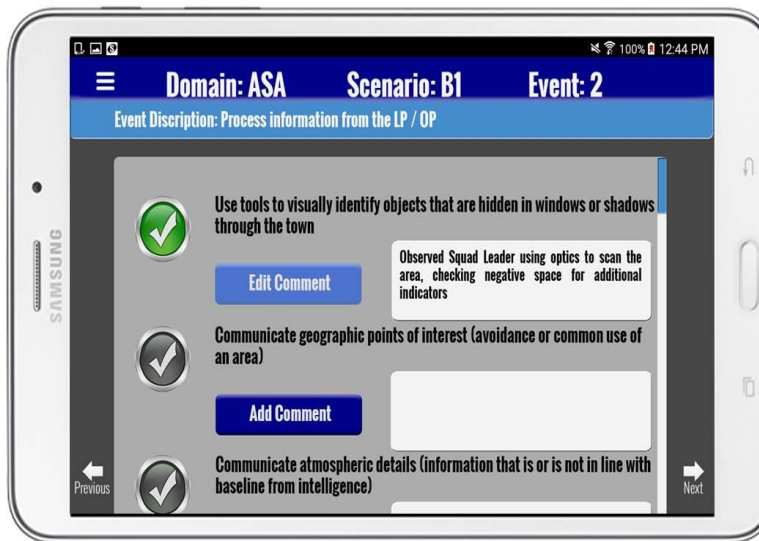
Screen 1 – Login Screen



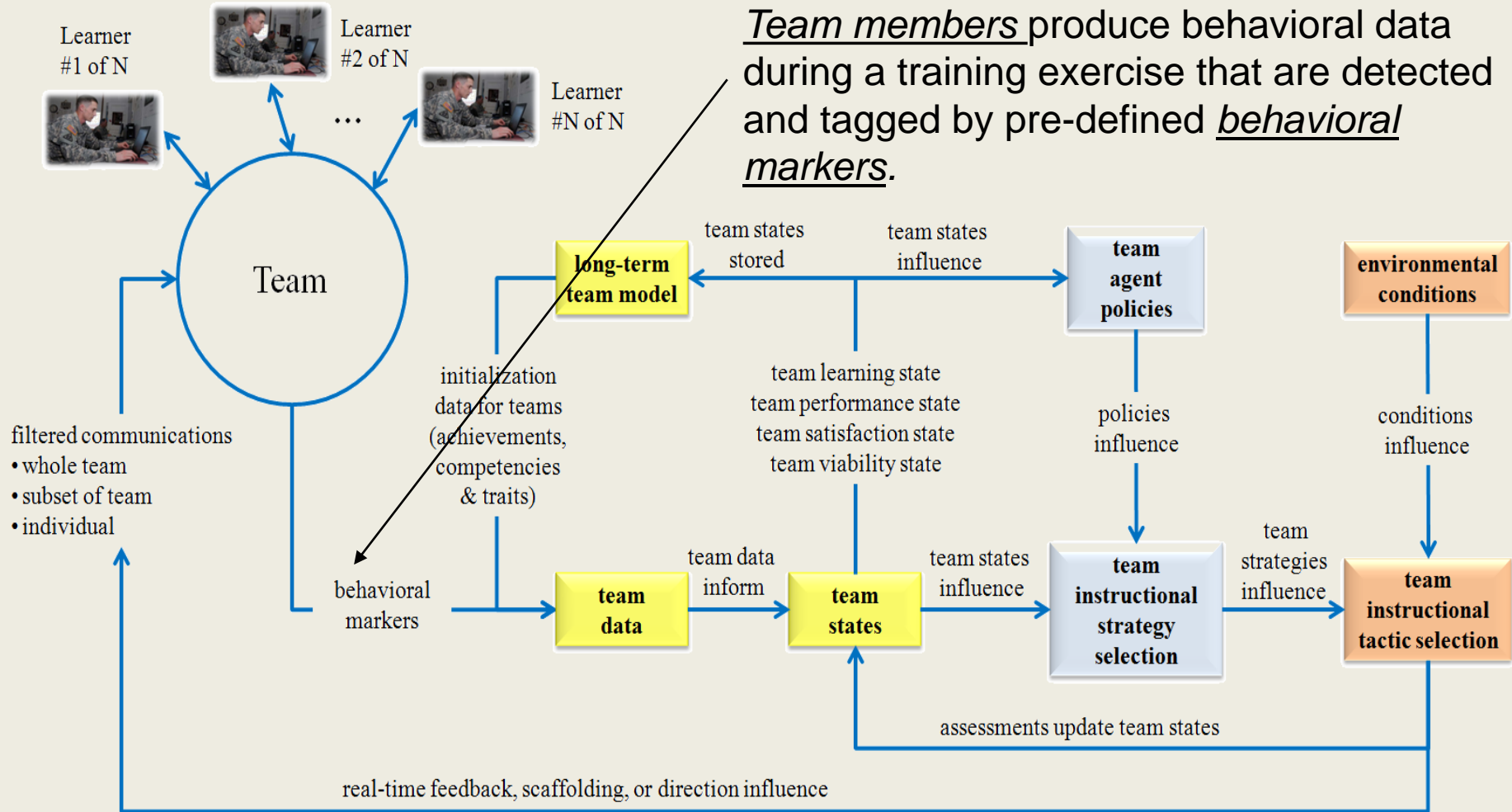
Screen 2 – Scenario Selection Screen



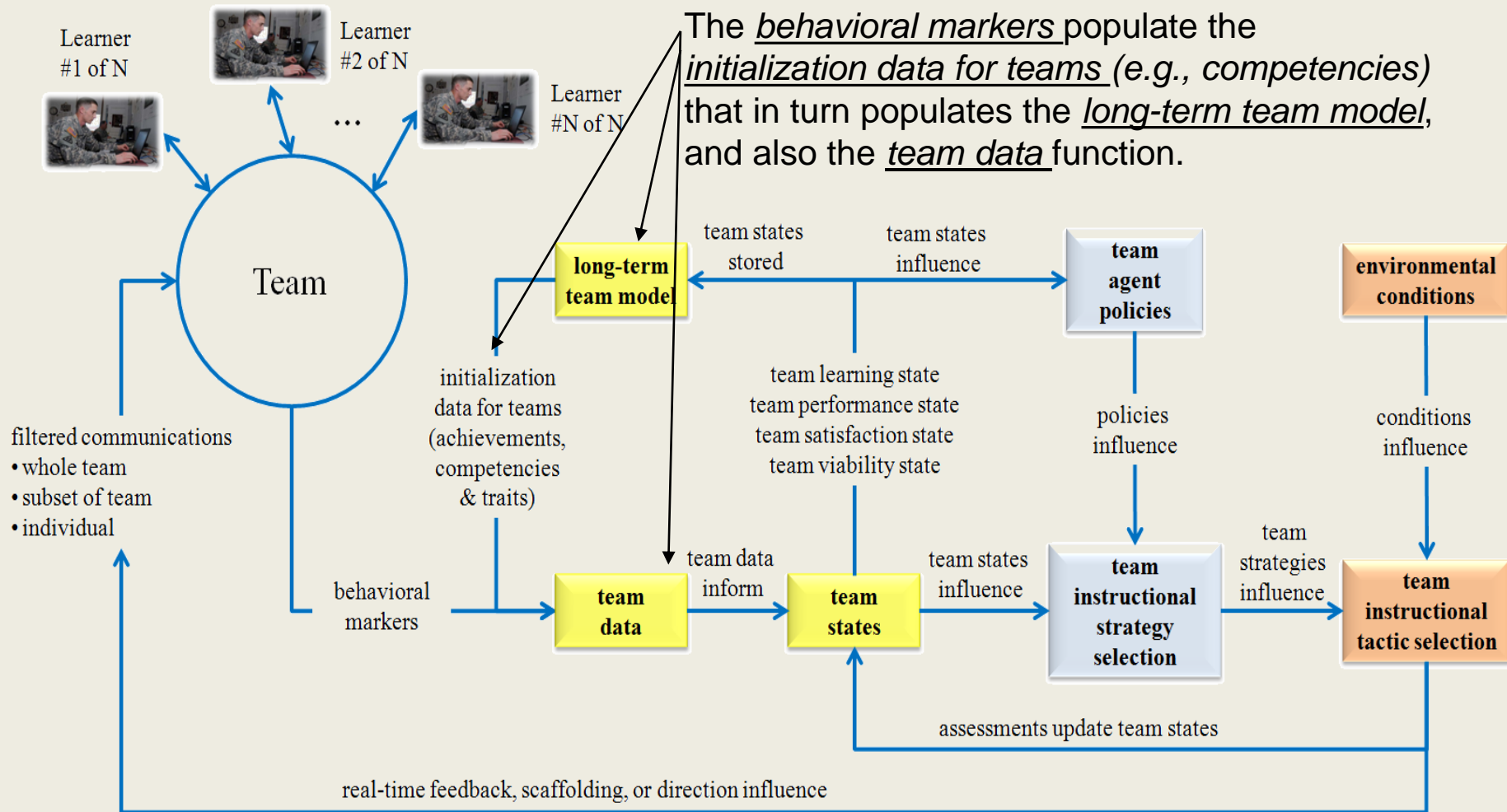
Screen 3 – ASA / TD / RPE Target Lists



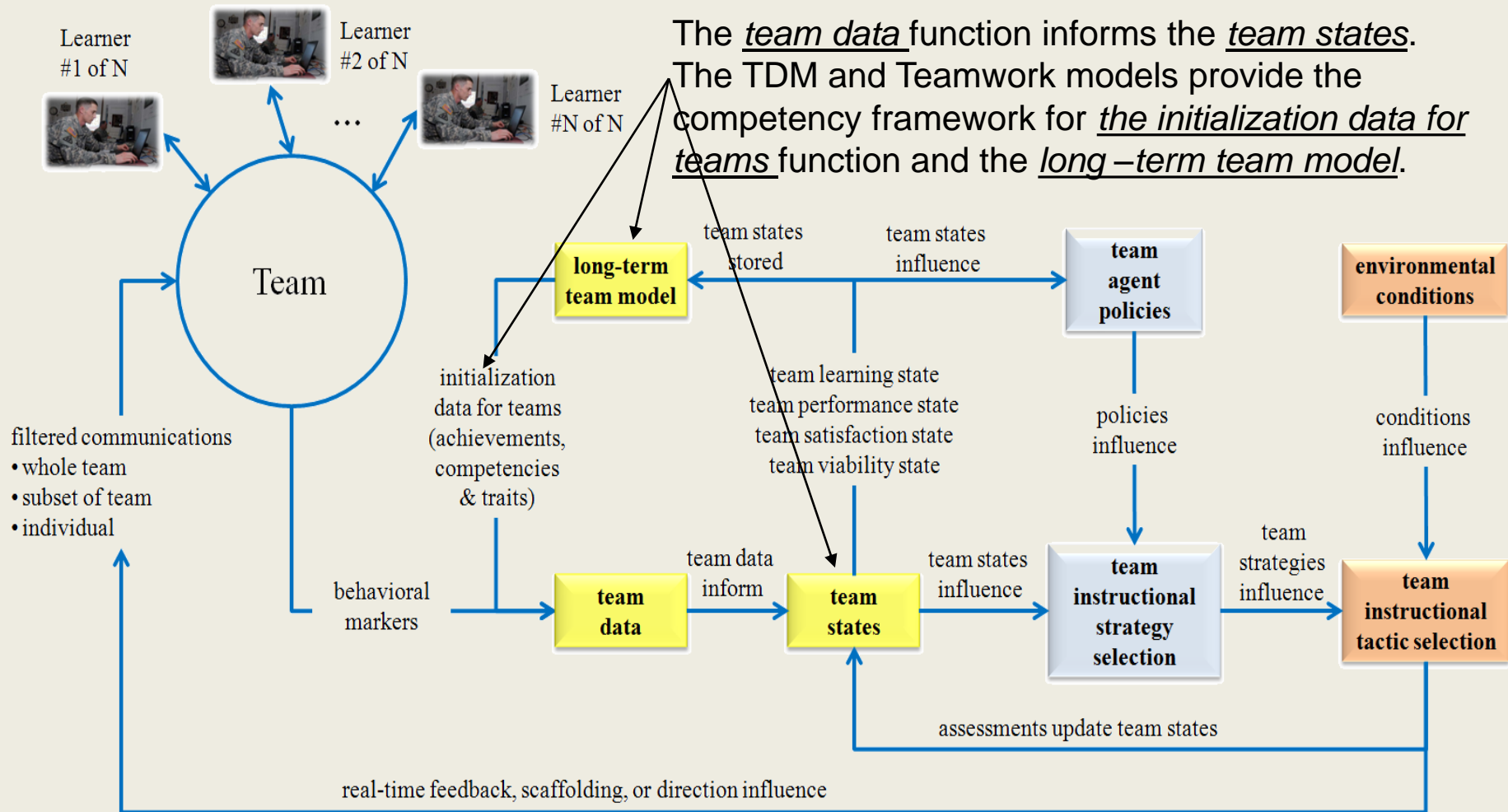
Learning Effect Model for Teams



Learning Effect Model for Teams

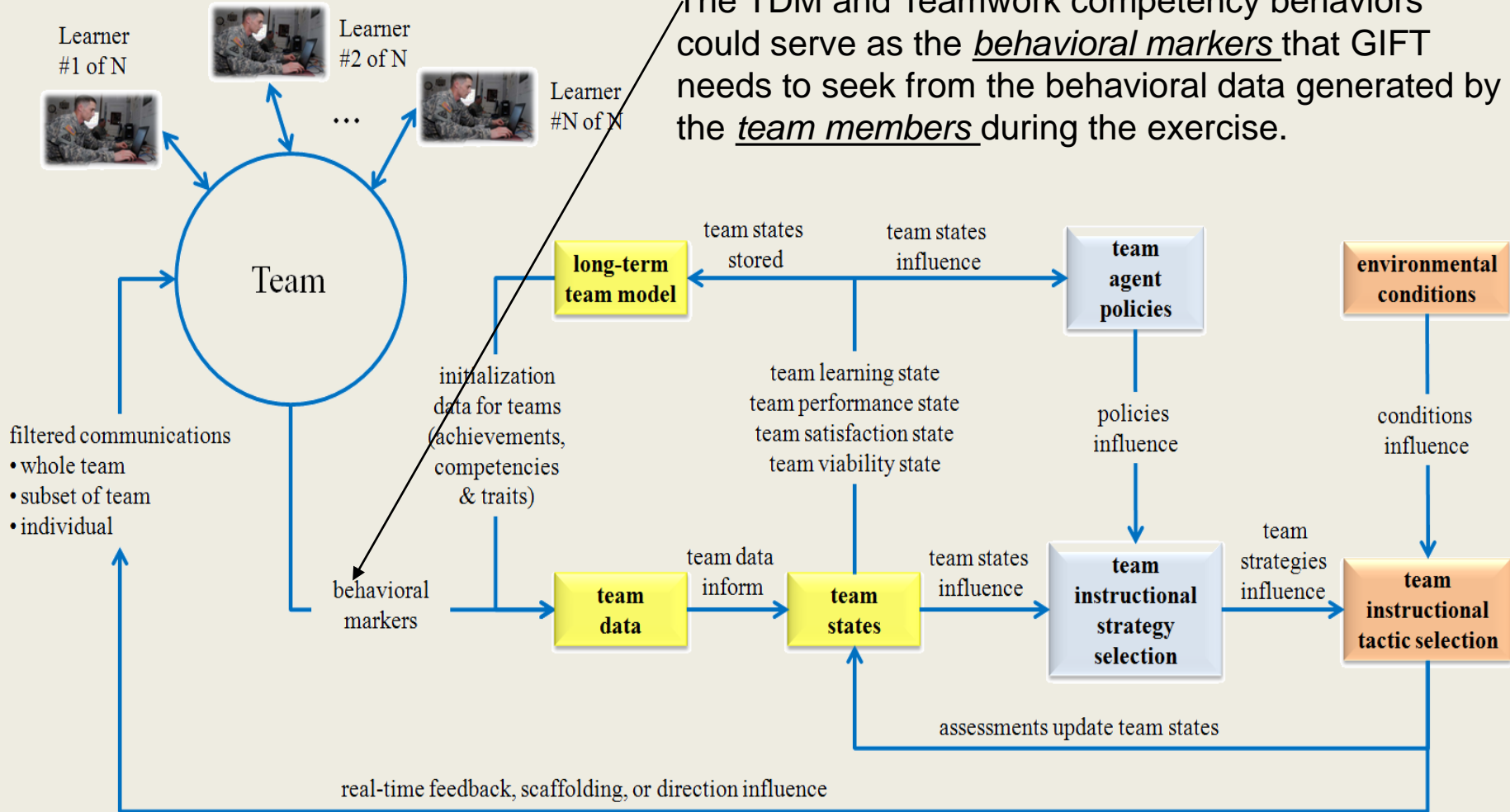


Learning Effect Model for Teams

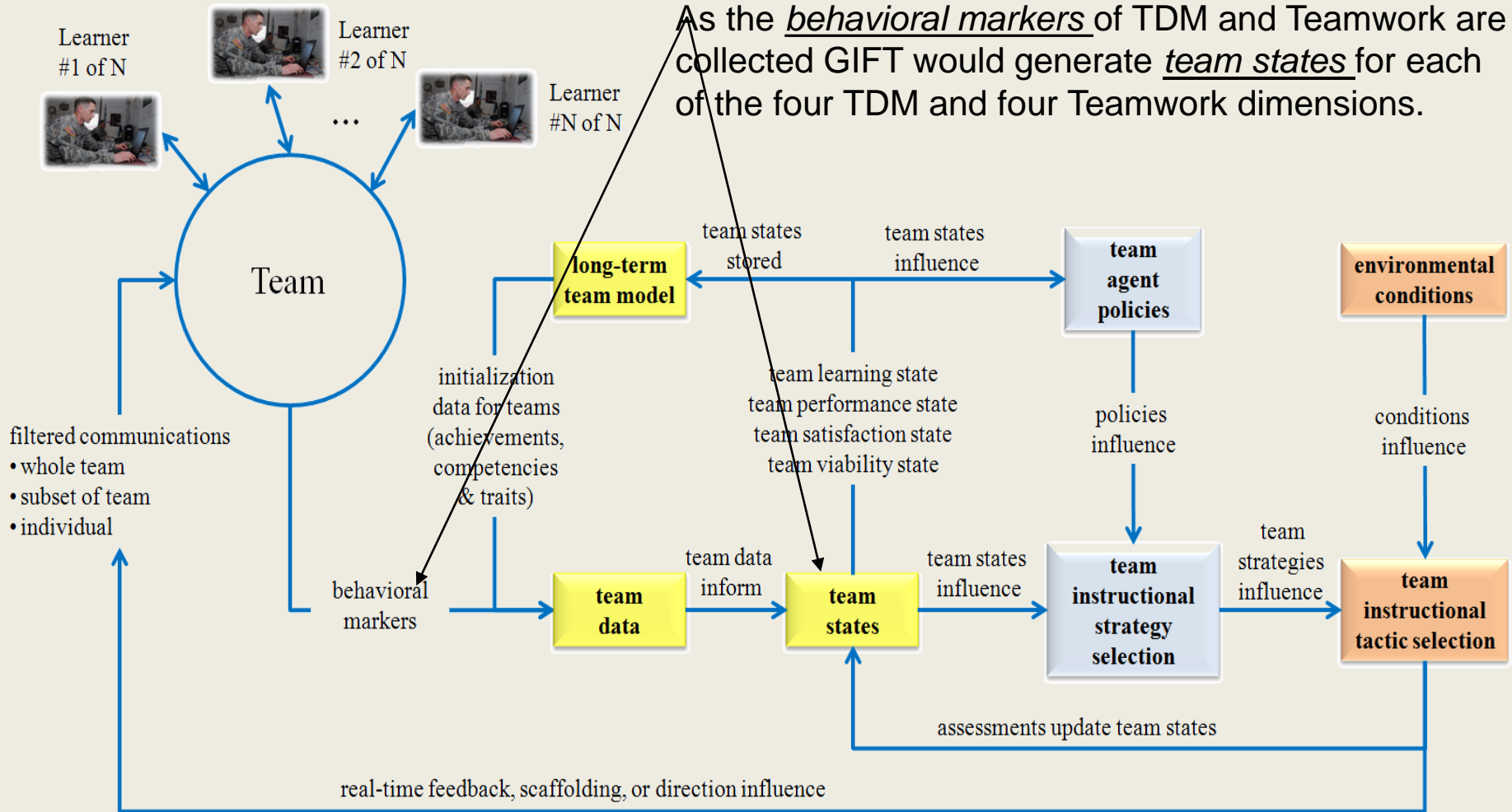


Learning Effect Model for Teams

The TDM and Teamwork competency behaviors could serve as the behavioral markers that GIFT needs to seek from the behavioral data generated by the team members during the exercise.

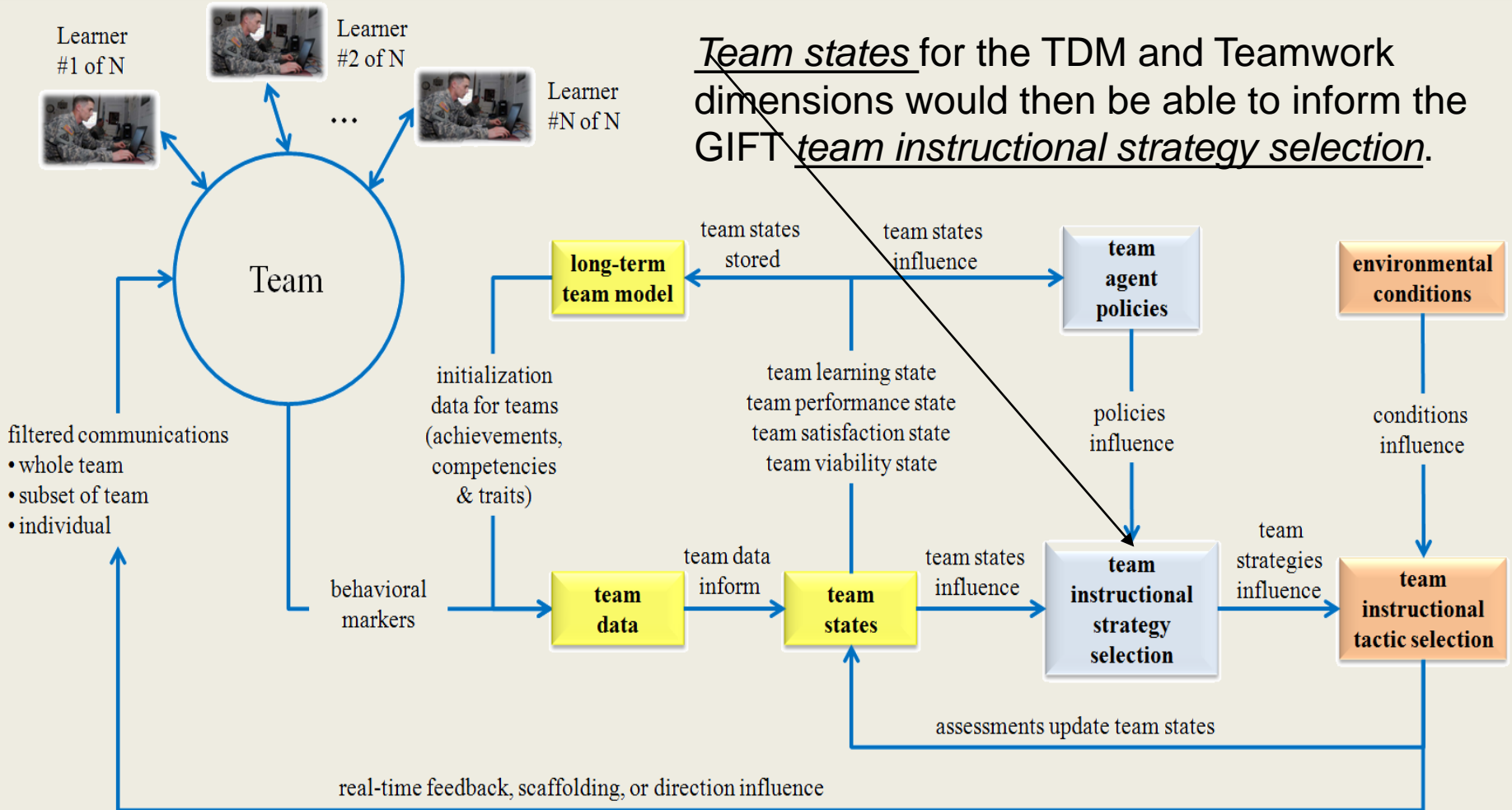


Learning Effect Model for Teams





Team states for the TDM and Teamwork dimensions would then be able to inform the GIFT team instructional strategy selection.



For example, if the team is doing well on information exchange, but they are not catching and correcting errors (supporting behaviors), then GIFT would provide feedback in the AAR that the team needed to improve on supporting behaviors such as error correction, and sustain their good information exchange.



- 1. The competency models should be used as a tool to diagnose team performance. Further analysis of the SOvM data needs to be conducted to categorize observed behaviors into the TDM dimensions for planning and execution to further validate the model and increase the diagnosticity of the measures.**
- 2. Adaptive tutoring needs to develop natural language recognition and processing to automatically categorize verbal behaviors into the TDM and TD competency models.**
- 3. Tools need to be developed for capturing event-based team simulation interactions representative of the TDM and TD models and organized for the event-based IAAR.**