



CASE WESTERN RESERVE  
UNIVERSITY EST. 1826

# Development of the Direct Observation of Team Interactions (DOTI) for Interprofessional Student Team Behaviors

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**Funded by the Josiah Macy Jr. Foundation**

# Case Western Reserve ILEAP Team

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**Tomorrow's session on ILEAP: Tuesday, Oct 4; H11-12:45: New Brunswick**

# Overview of Today's Presentation

- Background on ILEAP Project
- Background on Direct Observation in IPE Evaluation
- Methods for DOTI development and testing
- Results
- Discussion

# ILEAP Background

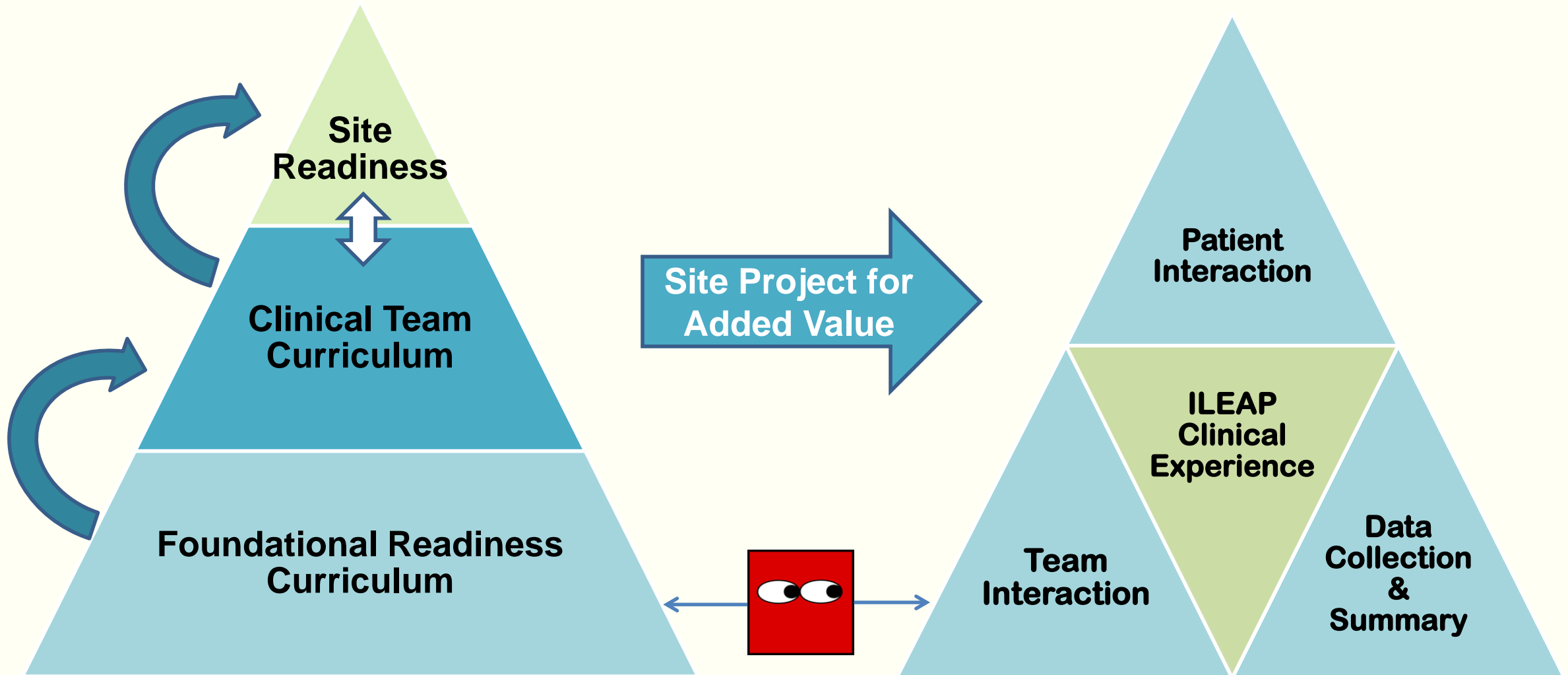
- ❖ ILEAP (Interprofessional Learning Exchange and Practice) funded by Josiah Macy Jr. Foundation
- ❖ Early learner student teams from medicine, nursing, dentistry, social work and physician assistant programs
- ❖ Clinical-based experiential learning opportunity to enhance collaborative healthcare team skills
- ❖ Adding value to the clinic site

**ILEAP Goal: Refine, implement and test a scalable model for interprofessional clinical education**

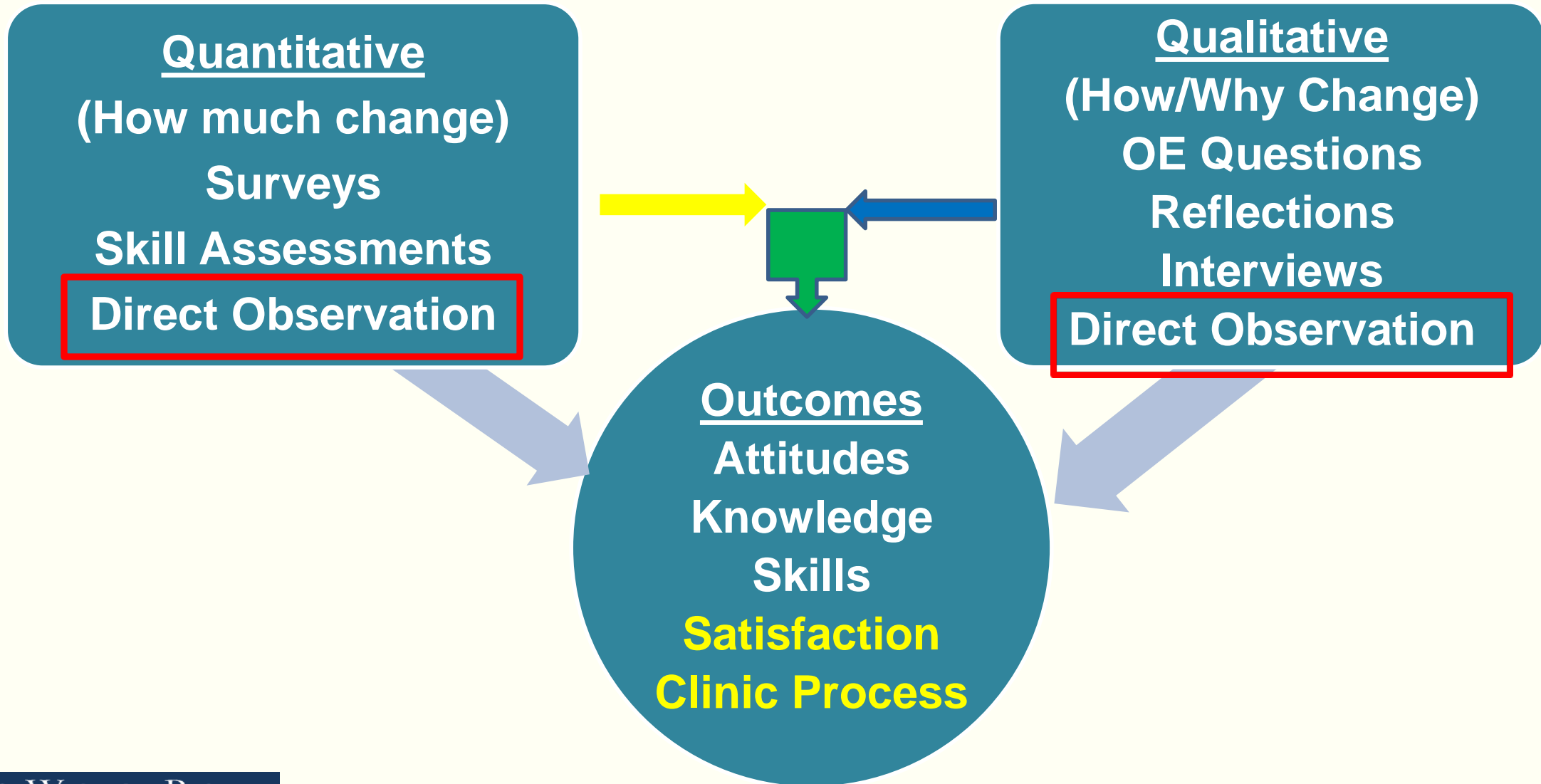
# ILEAP Readiness

and

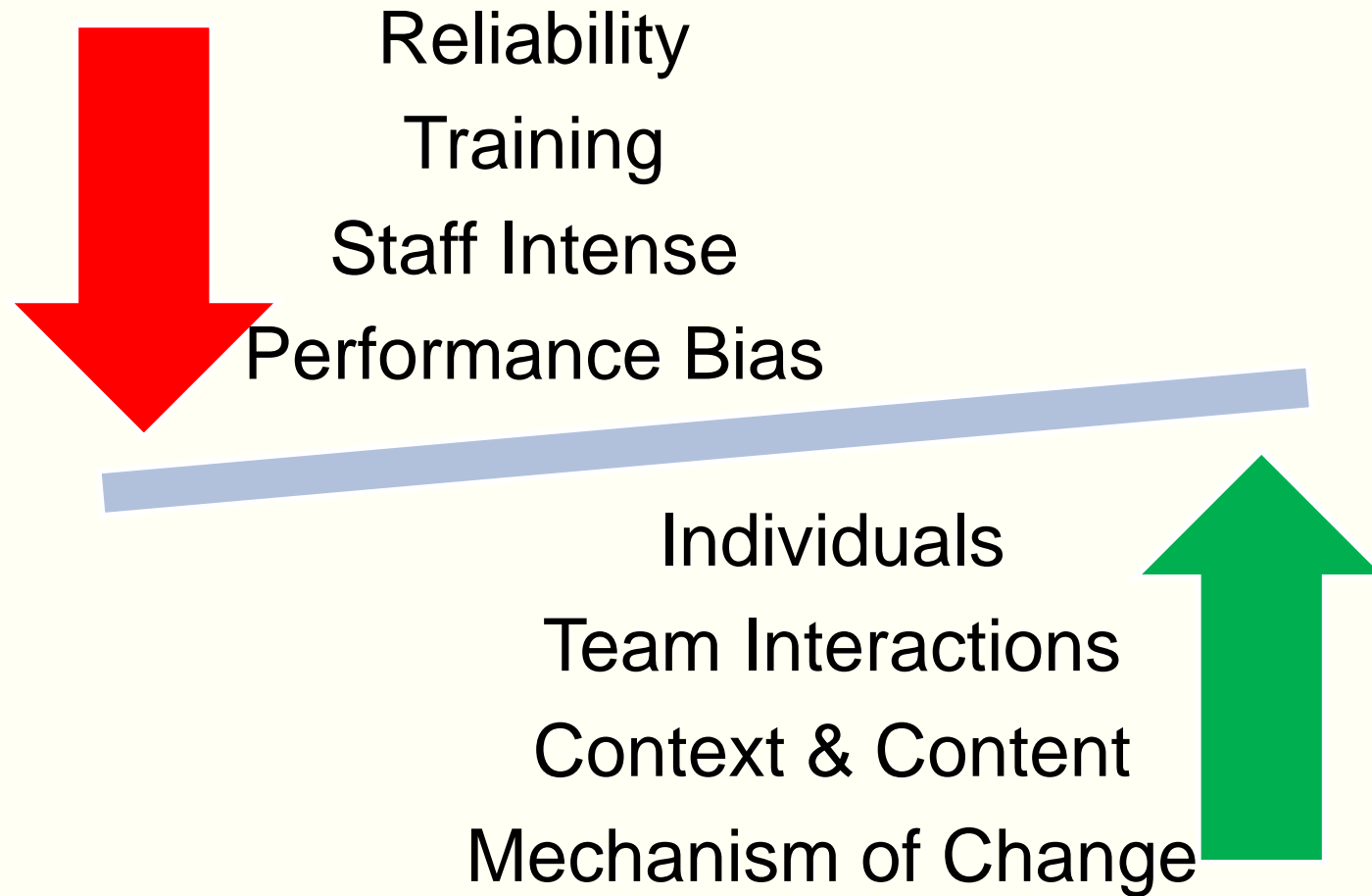
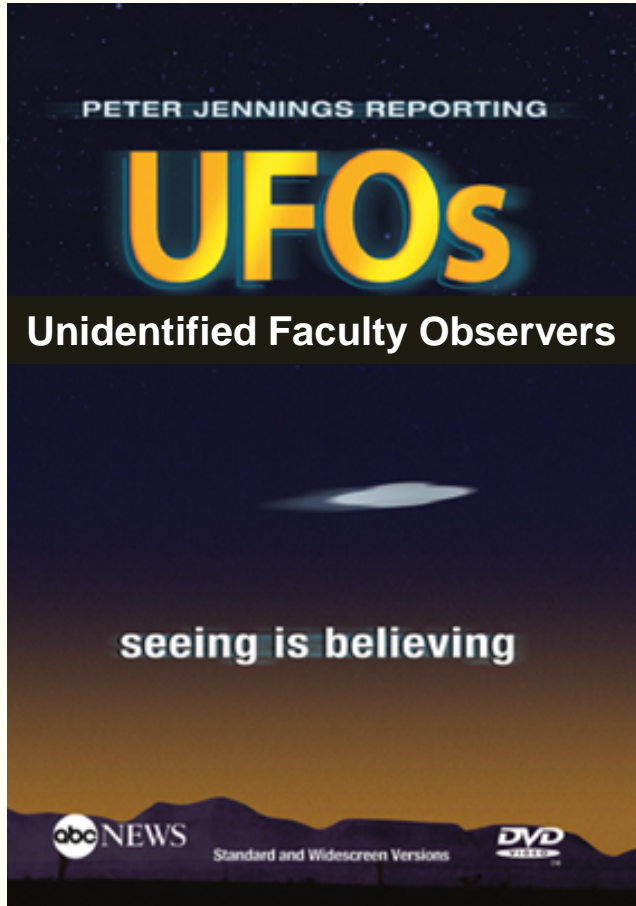
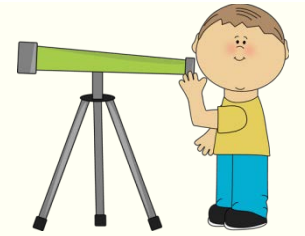
# Experience



# Overview of ILEAP Evaluation: Mixed Methods



# Direct Observation



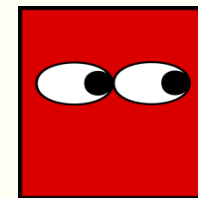
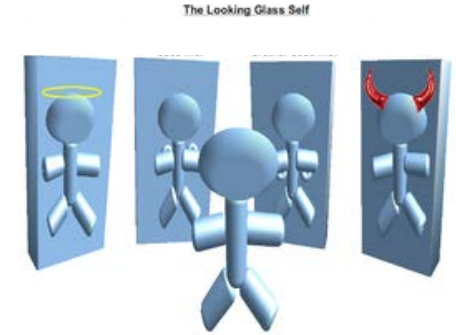
# Current Direct Observation Tools

	Purpose	Context/ Setting	Target	Items; Response categories	Observer	Training; Obs Time
iTOFT (2016) Thistlethwaite	Formative		Individual; Basic/Adv	11, 10; 3	Staff, student peers	60 minutes; <20 minutes
TeamSTEPPs Original/modifie d	Evaluation	Clinical	Range	20+ items; 5 categories	Clinical faculty	?
McMaster Ottawa (2015) (Lie et al)	Evaluation	OSCE	Ind/team; different time points	17 items; 3	Faculty	~35 minutes
UCLA Teamwork Observation Tool (Wilkerson)	Formative feedback/ coaching	Confer Room; inpatient room	Individual students, practitioner	12 competencies with multiple items	Clinical	Not addressed



# AIMS

- ❖ Develop a direct observation tool for team-based assessment both self and external;
- ❖ Determine feasibility and acceptability in classroom and clinic-based settings; reliability and validity;
- ❖ Examine concordance of self and external assessment;
- ❖ Incorporate observation tool in education for facilitators, coaches, team self assessment;



# METHODS

## Developing DOTI

- ❖ Identify observable behaviors from IPEC sub-competencies, Salas et al\* and VA PACT Communication in Teams Survey\*\*;
- ❖ Aligned with Readiness Course; Operationalize behavior definitions
- ❖ 15-items; 10-point scale
- ❖ Project staff review and revise for pilot form
- ❖ Trained school faculty for workshop observation; project faculty for clinic team observations

\*NEXUS Practical Guide 1

\*\*VAIL, ViSN 22 Great Los Angeles

# Training for DOTI

- Online and in-person training
- Walked through all DOTI categories – gave written examples
- Use the Comments form to record phrases/words that summarize or exemplify observation & justify rating
- Assign rating at the end of the observation period
- Try to use the full scale (1-10) avoid being overly generous
- Incorporated videos from TeamSTEPPS and other Youtube sources for examples

# METHODS

1. Faculty inter-rater reliability
2. Facilitators rating the IPE foundational groups in the Interprofessional Workshop
3. Faculty rating the Clinical Teams
4. Students rating a video

# Organizing DOTI Items

## Communication

- Active listening
- Information Sharing
- Team Dialogue/Engagement

## Roles/Responsibilities

- Roles
- Leadership
- Collaborative Decisions

## Team Climate

- Psychological Safety
- Mutual Support
- Situation Monitoring

## Conflict Management

- Feedback - Give
- Feedback - Receive
- Conflict Management

## Team Process/Function

- Team Orientation
- Adaptability
- Accountability

# DOTI Global

DIRECT OBSERVATION OF TEAM INTERACTIONS – DOTI –Global											
ID:				Date:							
Instructions: On a scale of 1-10, please rate how the team generally performed the following behaviors. Definitions/examples are provided. You may choose any value between 1 and 10 to reflect the team's behavior. <u>Write N/A if not applicable.</u>											
	1	2	3	4	5	6	7	8	9	10	
<b>ACTIVE LISTENING</b>	Team tolerates members interrupting, side conversations or members ignoring each other.							Members listen without interruption and <u>attention</u> to whomever is speaking; demonstrate by asking questions or participating.			
	1	2	3	4	5	6	7	8	9	10	
<b>TEAM DIALOGUE / ENGAGEMENT</b>	The team ignores poor participation in discussion by members or withdrawal from engagement in discussions.							Members engage in meaningful discussion. All members participate in discussions.			
	1	2	3	4	5	6	7	8	9	10	
<b>INFORMATION SHARING</b>	Team permits members to not share information frequently. Members do not make an effort to make information clear, or relevant or timely. Members do not explain professional terminology.							Shared information is clear, sufficient, organized and relevant. Information is routinely incorporated into team decision-making.			
	1	2	3	4	5	6	7	8	9	10	
<b>COLLABORATIVE DECISION-MAKING</b>	Team tolerates unilateral decision-making. The problem solving and decision processes are not inclusive; different opinions are not sought or are							Team seeks to hear and incorporate all the different perspectives in the decision-making process. Final decisions are a synthesis of ideas, perspectives and expertise.			

# DOTI Comments

DOTI -COMMENTS		
Team/Group #	Date:	TIME:
ACTIVE LISTENING		
TEAM DIALOGUE / ENGAGEMENT		
INFORMATION SHARING		
COLLABORATIVE DECISION MAKING		
ROLE & RESPONSIBILITES		
MUTUAL SUPPORT		
LEADERSHIP		
PSYCHOLOGICAL		

# RESULTS



# Reliability

## ❖ Faculty rating of standardized videos

- Project Faculty
  - 4 Faculty watched 5 videos together
  - ~2-5 minute segments
  - Intraclass correlation coefficient (ICC) examining inter-rater reliability
- Overall ICC, average measure= .750



# Rating the Clinical Teams with DOTI: At Clinic Site

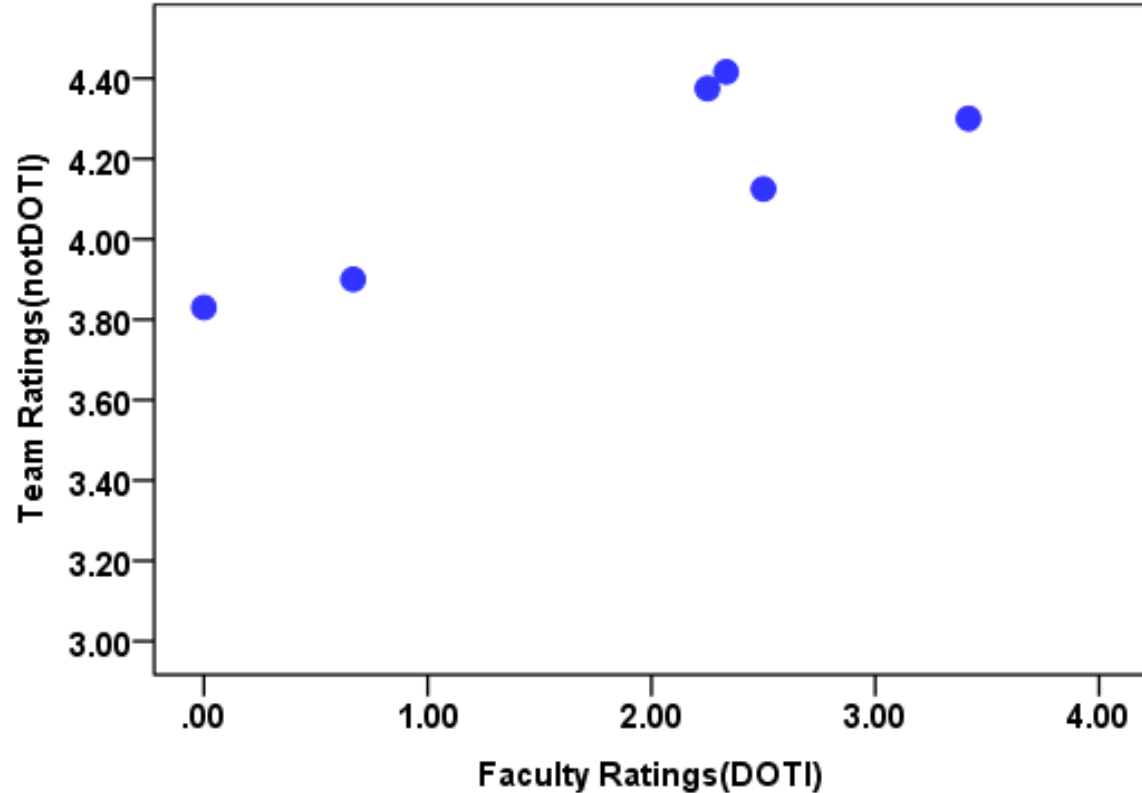
3 raters in pairs; 3 clinic sites; ~30 minute observation blocks

	Site	ICC*
Rater1 – Rater2	EmDept	.971
Rater1 - Rater2	MICU	.788
Rater2 – Rater3	Pediatrics	.795

\*Intraclass correlation coefficient

Behavior	Mean(sd)
Psychological Safety	7.0(1.3)
Team Orientation	6.8(1.0)
Information Sharing	6.5(1.4)
Mutual Support	6.5(1.4)
Feedback Give	1.8(2.1)
Feedback Receive	1.3(2.1)

# Concordance of Faculty- Student Ratings: Clinical Teams



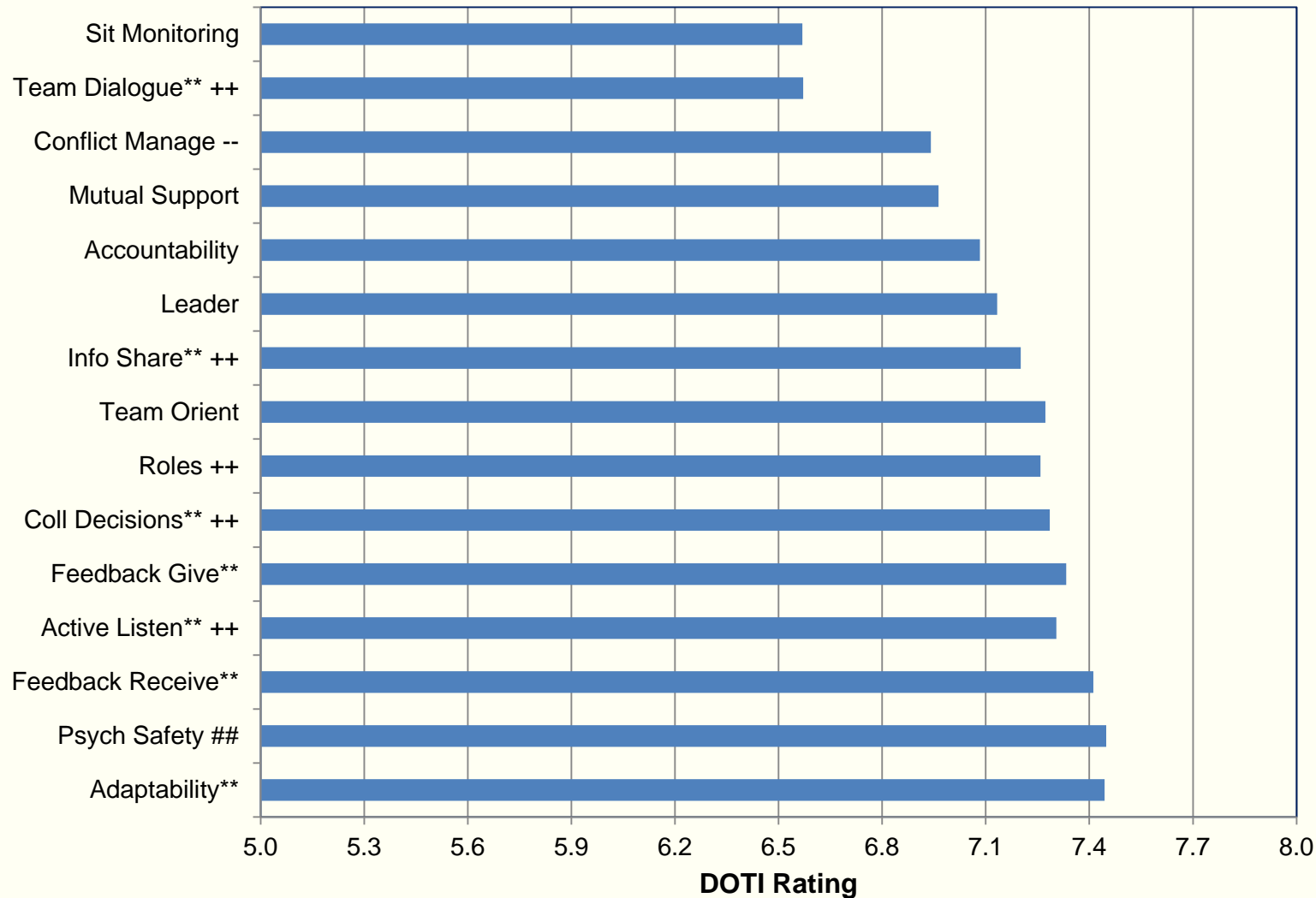
Student Categories	Student Ratings
Understand other's roles	4.4(1.0)
Professions interact	4.3(0.9)
Leadership skills	4.1(0.8)
Resolve conflicts	3.8(0.9)
Feedback	3.9(0.9)
Collaborative decisions	4.4(1.0)

# Rating the Workshop Groups with DOTI

- ❖ 64 teams rated by different facilitators; ratings and written comments
- ❖ Each team was scored for 2 separate 20-minute segments
- ❖ Mean score for each of 15 items
- ❖ Mean total score for each group (rater)
- ❖ Concordance of comments and ratings



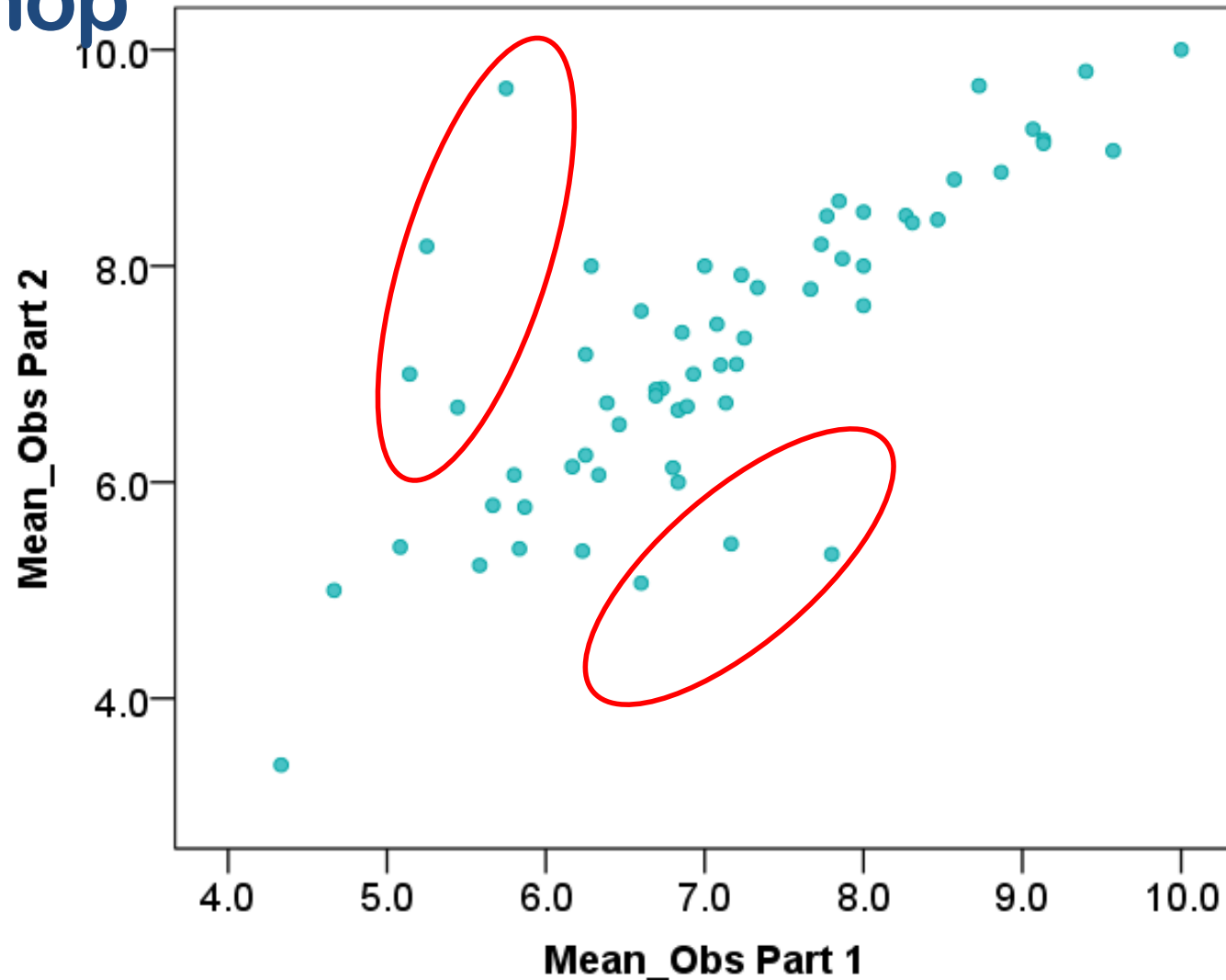
# DOTI Item Ratings: Workshop Groups



\*\* Workshop Behavior  
++ Fewest 'Not Observed'  
-- Most 'Not Observed'  
## Discordant Comments  
Discordant Ratings

**Cronbach's Alpha = .938**

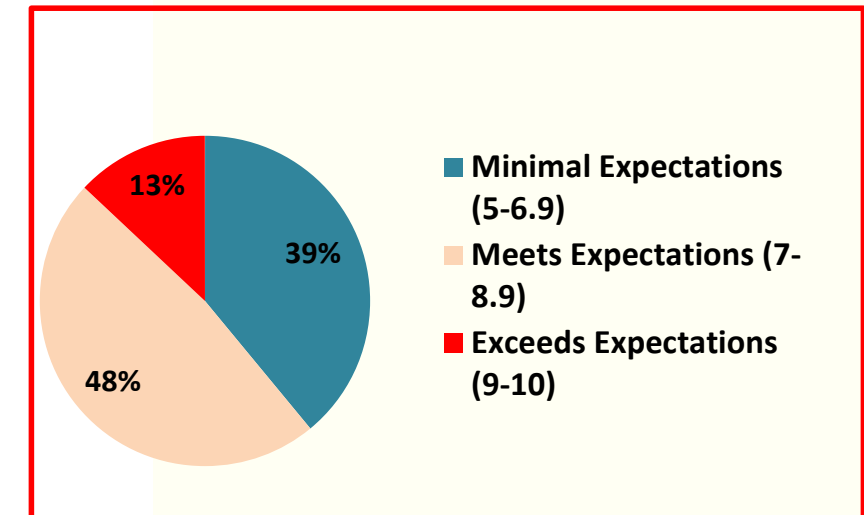
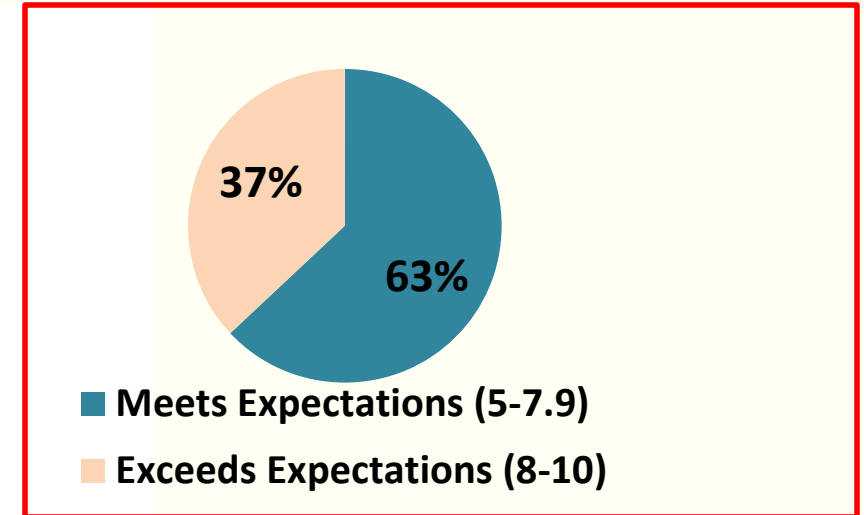
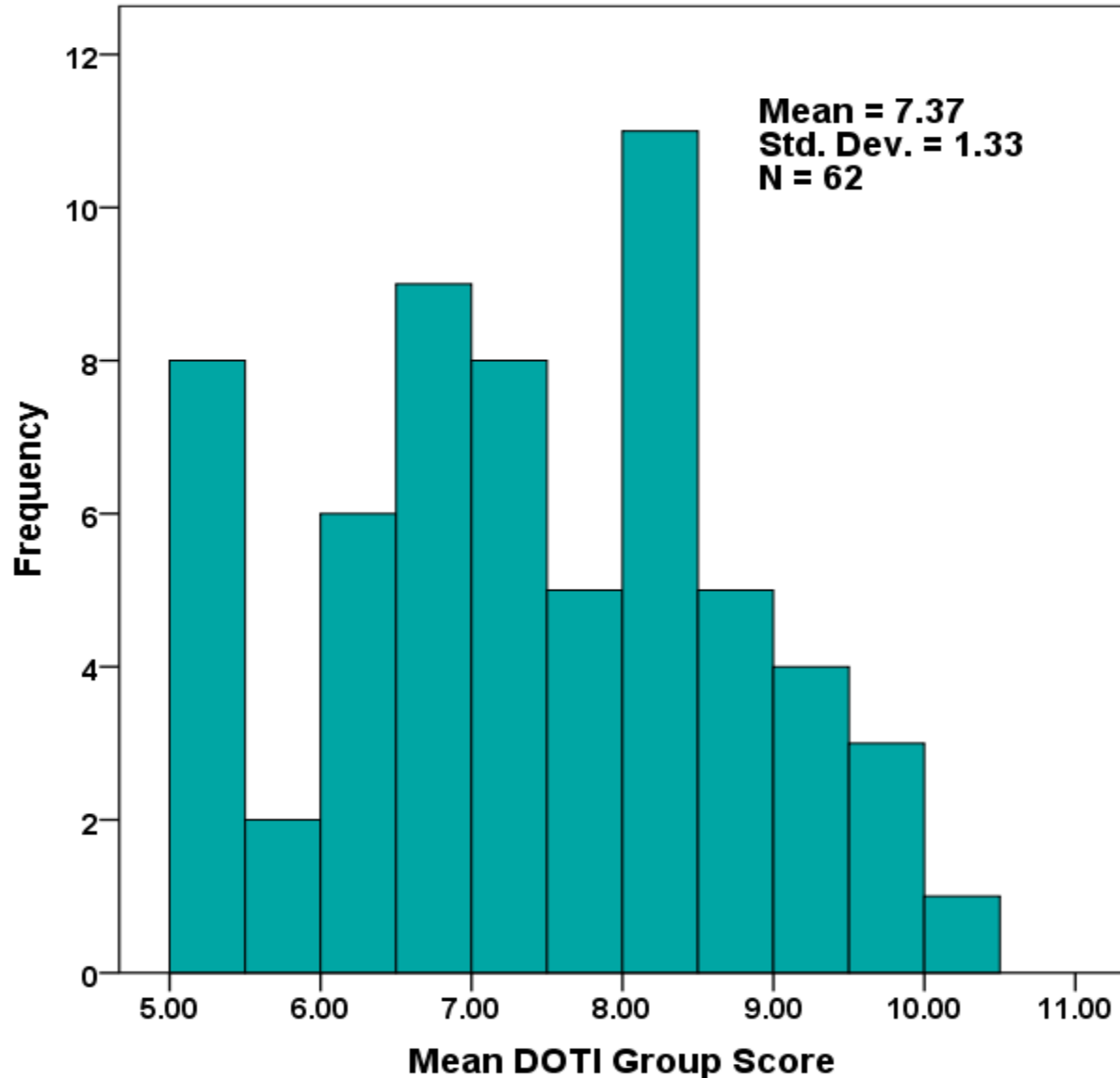
# Paired mean DOTI scores from 2 observations: Workshop



Pearson correlation  
Coefficient: .765

Paired t-test:  
Mean Diff -.19 (se .11)  
P-value .127

# Distribution of Group Mean Scores: Workshop



# Comments and Ratings: Workshop

Ratings	Category	Comments
8, 9, 10	Exceeds Expectations	'all', 'everyone', 'very well', 'very good'
4-5, 6-7	Meets expectations	'some, 'many', 'not everyone', 'tried', 'uneven'
1, 2, 3	Below Expectations	'no one attempted to..', 'group not focused', 'not occurring', individual behaviors not corrected.



# Concordance of Student Group - Facilitator Rating: Workshop

	Facilitator DOTI Rating: Correlation coefficients	Mean Difference in Ratings (S – F)	P-value**
<b>Skill Building</b>	<b>.192</b>	<b>0.1</b>	<b>.650</b>
<b>Sharing Ideas/Information</b>	<b>.365*</b>	<b>1.27</b>	<b>&lt;.01</b>
<b>Roles</b>	<b>.263*</b>	<b>0.79</b>	<b>&lt;.01</b>
<b>Team Focus for Patient</b>	<b>.292*</b>	<b>.0.77</b>	<b>&lt;.01</b>
<b>Liked the Project</b>	<b>.272*</b>	<b>0.27</b>	<b>.250</b>

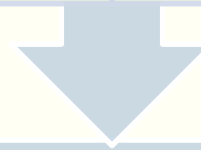
\* P-value<.05; \*\* Paired t-test

# Students Rating a Video: Assignment

**Observed Video of Poor Team Behaviors**

**6 minute Video**

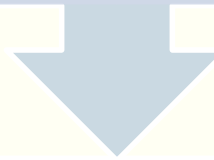
**IP Team Meeting**



**DOTI-Corrections Form**

**Definitions of Low Anchor**

**Checklist**



**Identified 2 Poor Team Behaviors**

**Described the Behavior**

**Asked to Articulate Correction**

# Results: Video Assignment

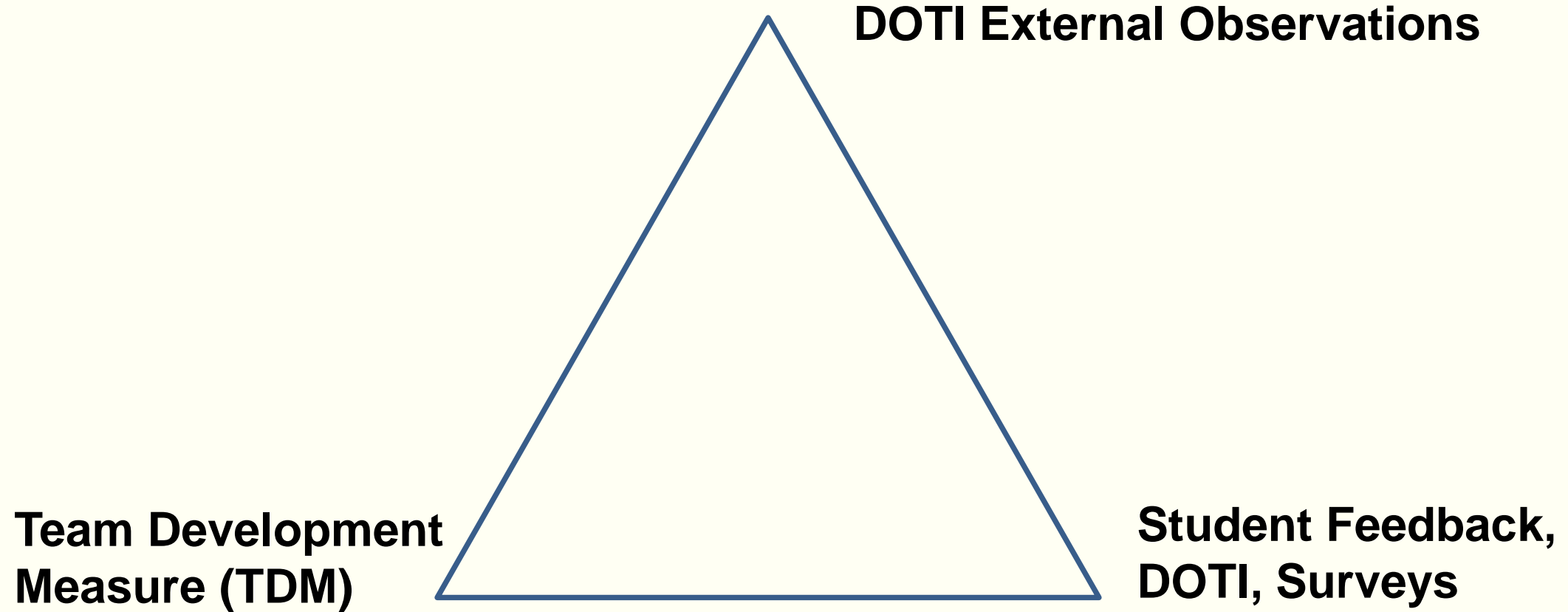
- 70+% could recognize poor behaviors
  - 50% could make a general recommendation for correction
  - 20% could articulate specific words for correction
- “



**DIRECT OBSERVATION OF TEAM CORRECTION (DOTI-C)** : Check columns 1 & 2 for observed behavior. Identify and describe a team corrective response if applicable.

	1	2	Example of successful correction
<b>Communication: Team members...</b>			
1	Interrupt each other; have side conversations		
2	Do not engage in team discussion; seem withdrawn		
3	Give feedback that is destructive or disrespectful		
4	View appropriate feedback as criticism; become defensive		
5	Do not share information that is clear, timely or accurate		
<b>Collaboration: Team members....</b>			
6	Do not contribute their own professional skills and knowledge		
7	Ignore expertise and skills of other members		
8	Do not utilize each other's expertise and perspectives in decision making		
<b>Climate: Team members.....</b>			
9	Do not speak up when action is required for team functioning		
10	Do not acknowledge requests for help from others		
11	Do not manage negative emotions as they arise		
12	Ignore conflict and leave disagreements unresolved		

# Triangulation of Ratings: ILEAP Clinical Teams

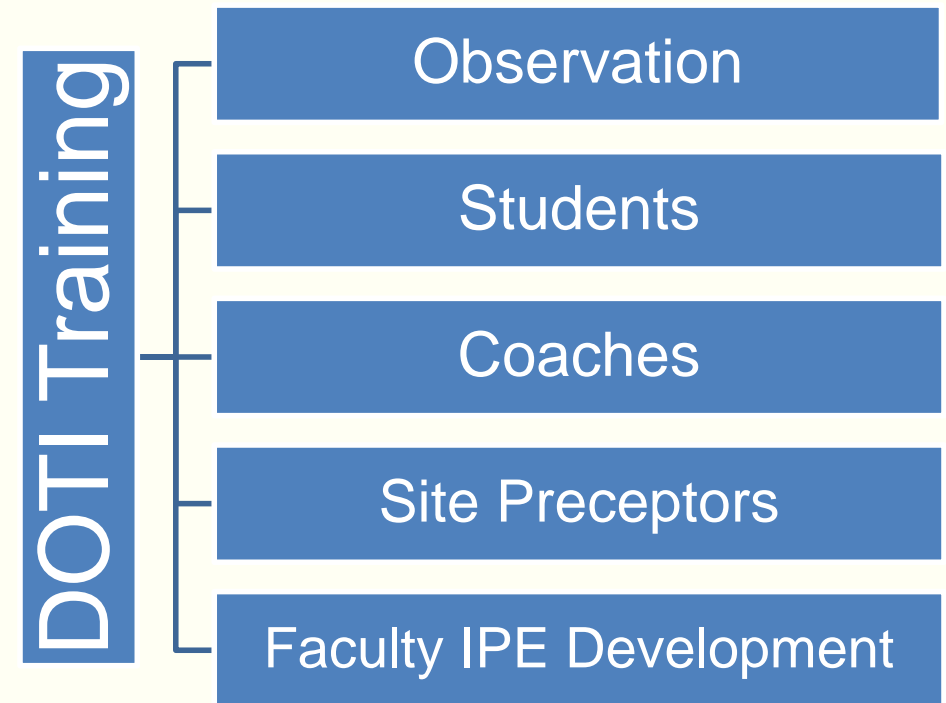


# Limitations

- Small number of clinical teams
- Students have not yet used full DOTI for self and external comparisons
- Reliability of workshop facilitators
- Validity

# Next Steps for DOTI

1. Revisions/refinement of scale
2. Increased use as an educational tool
3. Rating OSCE
4. Compare to other instruments
5. Compare to self-assessment



# Project Summary and Conclusion

- ❖ Feasibility and Acceptability was good but improvements needed in training
- ❖ Early examination of reliability was modest, but should also improve with training
- ❖ Emphasized TEAM interactions, team self-correction
- ❖ Useful as framework for teaching IP competencies
  
- ❖ Challenges remain regarding Time, Scaling Up

# Acknowledgements

Josiah Macy Jr. Foundation

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❖ CWRU Schools of Medicine, Dental Medicine, Nursing and the Mandel School of Applied Social Sciences

❖ Cleveland Clinic Lerner College of Medicine (CCLCM)

THANK YOU  
QUESTIONS?

Approved by CWRU IRB Protocol  
#2016-1660