

L'urgenza formativa

... continua

Padova, 24-26 Ottobre 2013



Tecniche di apprendimento con simulazione avanzata per la gestione dell'emergenza urgenza pediatrica

Dott. Marco de Luca

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Responsabile Programma Simulazione

*Membro del Founding Board
dell'International Paediatric Simulation Society*

www.meyer.it/simulazione



In quale ambito nasce la simulazione?



Eventi ad alto rischio e a bassa frequenza

che richiedono una specifica formazione del **Team** che porti ad **elevata affidabilità** e a **minimizzare le probabilità di errore**



Simulatori di volo



Quali sono le caratteristiche dell'emergenza pediatrica?

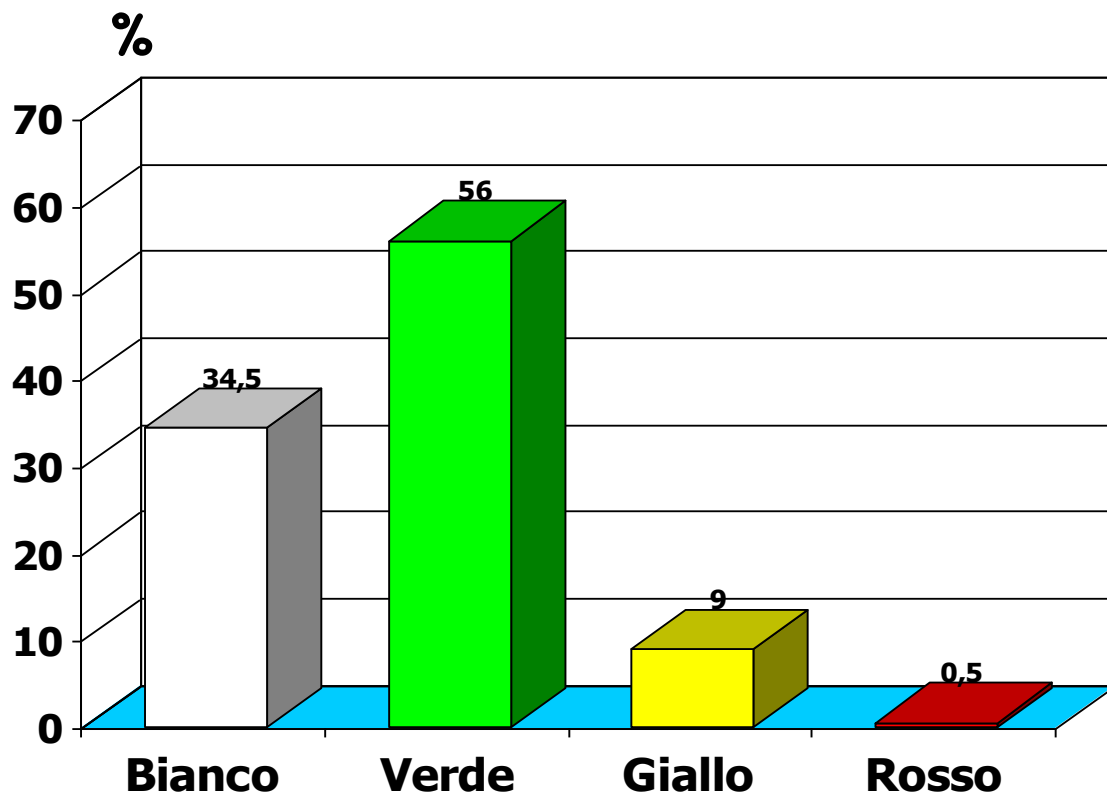
Il team gestisce l'emergenza pediatrica



Eventi ad alto rischio e a bassa frequenza

Accessi per tipologia di codice colore nel 2012

PS - DEA AOU A. Meyer



Eventi ad alto rischio e a bassa frequenza



The Children's Hospital
of Philadelphia®



0.23% dei pazienti afferenti al PS richiede
un trattamento nella “resuscitation room”

Pediatric pre-hospital advanced life support care in an urban setting

FRANZ E. BABL, MD, MPH, ROBERT J. VINCI, MD, HOWARD BAUCHNER, MD, LAWRENCE MOTTLEY, MD

TABLE 3

Procedures in PALS, per pediatric provider per year (n = 275)

	Total No.	%	No. per provider ^a per year
IV access	184	33.1	3.7
Bag/mask ventilation	28	5.0	0.6
Blood sugar testing	18	3.2	0.4
Intubation	15	2.7	0.3
CPR	13	2.3	0.3
Oral airway	9	1.6	0.2
Intraosseus access	3	0.5	0.06
Hyperventilation	2	0.4	0.04
Portacath access	1	0.2	0.02
Needle chest decompression	1	0.2	0.02
Defibrillation	1	0.2	0.02

^a50 active ALS providers.

The Spectrum and Frequency of Critical Procedures Performed in a Pediatric Emergency Department: Implications of a Provider-Level View

Matthew R. Mittiga, MD; Gary L. Geis, MD; Benjamin T. Kerrey, MD, MS; Andrea S. Rinderknecht, MD



Cincinnati Children's Hospital Medical Center, Division of Emergency Medicine

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Table 4. Pediatric emergency medicine fellow (n=10) performance of and exposure to critical procedures during 12 months.

Procedure	Median Number Performed	Range	Fellows Performing at Least 1, %	Fellows Exposed to at Least 1, %*
Any critical procedure	3	0-9	90	90
Orotracheal intubation	2.5	0-9	90	90
Intraosseous line placement	0.5	0-2	50	90
Central venous line placement	0	0	0	60
Needle thoracostomy	0	0	0	30
Tube thoracostomy	0	0-1	30	60
Pharmacologic cardioversion	†	†	†	50
Electrocardioversion	†	†	†	10
Defibrillation	†	†	†	10
Pericardiocentesis	0	0	0	10

*Exposure is defined as having performed the procedure or being directly involved in the care of a patient on whom the procedure was performed.

†Credit was not assigned to an individual provider for performance of the procedure because cardioversion and defibrillation in our setting are carried out by a multidisciplinary team, with the physician's primary role focusing on cognitive aspects such as timing and delivery of medications or energy. We report exposure only for these procedures.

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Table 2. Pediatric emergency medicine faculty (n=41) exposure to critical procedures during 12 months.

Procedure	Performance			Supervision			Exposure Faculty Performing or Supervising at Least 1, %
	Median	Range	Faculty Performing at Least 1, %	Median	Range	Faculty Supervising at Least 1, %	
Any critical procedure	0	0-6	39	4	0-17	98	98
Orotracheal intubation	0	0-5	37	2	0-12	88	90
Intraosseous line placement	0	0-2	20	0	0-4	41	43
Central venous line placement	0	0-1	5	0	0-2	27	32
Needle thoracostomy	0	0	0	0	0-2	12	12
Tube thoracostomy	0	0-1	2	0	0-2	37	39
Pharmacologic cardioversion	*	*	*	0	0-4	32	32
Electrocardioversion	*	*	*	0	0-2	12	12
Defibrillation	*	*	*	0	0-1	2	2
Pericardiocentesis	0	0	0	0	0-1	2	2

*Credit was not assigned to an individual provider for performance of the procedure because cardioversion and defibrillation in our setting are carried out by a multi-disciplinary team, with the physician's primary role focusing on cognitive aspects such as timing and delivery of medications or energy. We report supervision only for these procedures.

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DISCUSSION

Simulation provides an opportunity for deliberate practice with feedback immediately available to the learner and no risk of harm to patients. A systematic review and meta-analysis of simulation-based medical education showed that, compared with traditional medical education, simulation-based education with deliberate practice was superior in clinical skill acquisition.²² Given the findings of our study, we are developing a simulation-based critical procedure course with the goal of assisting residents, fellows, and faculty in achieving and maintaining competence in critical pediatric procedures.

Formazione tradizionale – Approccio Clinico

“See one,
do one,
teach one”

Esperienze - scarse, non controllate

Debriefing - raro, non strutturato

Errore - danno per il paziente, non etico

Formazione... 2.0 – Simulazione high fidelity

**“See one,
simulate many,
do one, competently,
teach everyone”**

Esperienze – molte, ripetute e controllate

Debriefing - frequente, strutturato

Errore – occasione di apprendimento

Why?

Andragogia

Malcom Knowles (1913-1997)

Gli adulti...

- sono **indipendenti** e **auto-diretti**
- hanno molta **esperienza**, che è una gran **risorsa** per l'apprendimento
- apprezzano un tipo di apprendimento che vada a **integrarsi con le esigenze della propria vita** di ogni giorno
- sono più interessati ad un approccio immediato, **focalizzato su un problema** piuttosto che incentrato su una materia
- sono più motivati ad imparare spinti da **stimoli interni** piuttosto che esterni

Cono dell'apprendimento

Fonte Edgar Dale, 1969

Dopo 2 settimane
tendiamo a ricordare

Natura del
coinvolgimento



Formazione Esperienziale

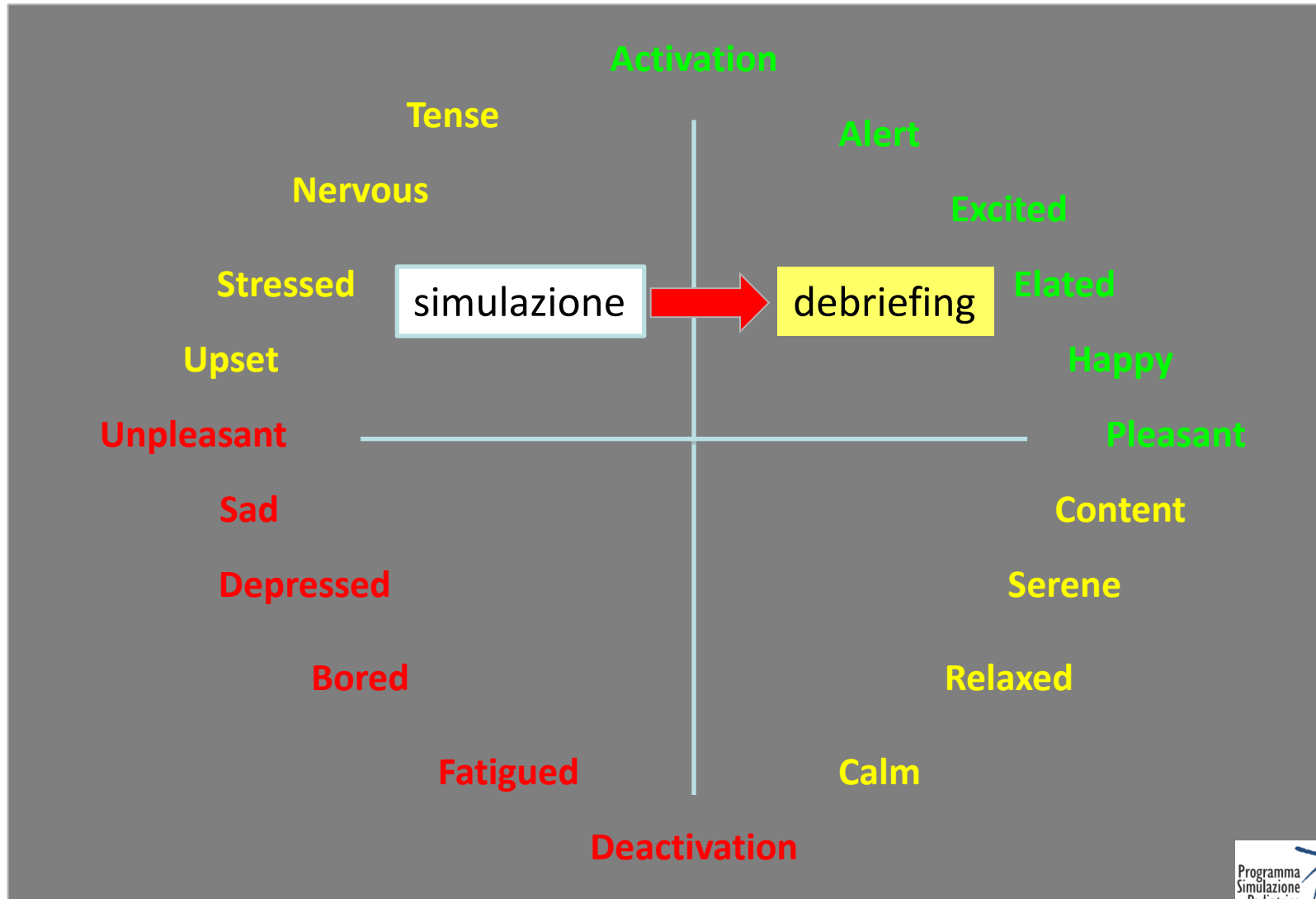


**FOR THE THINGS WE HAVE TO LEARN
BEFORE WE CAN DO THEM
WE LEARN BY DOING THEM.**

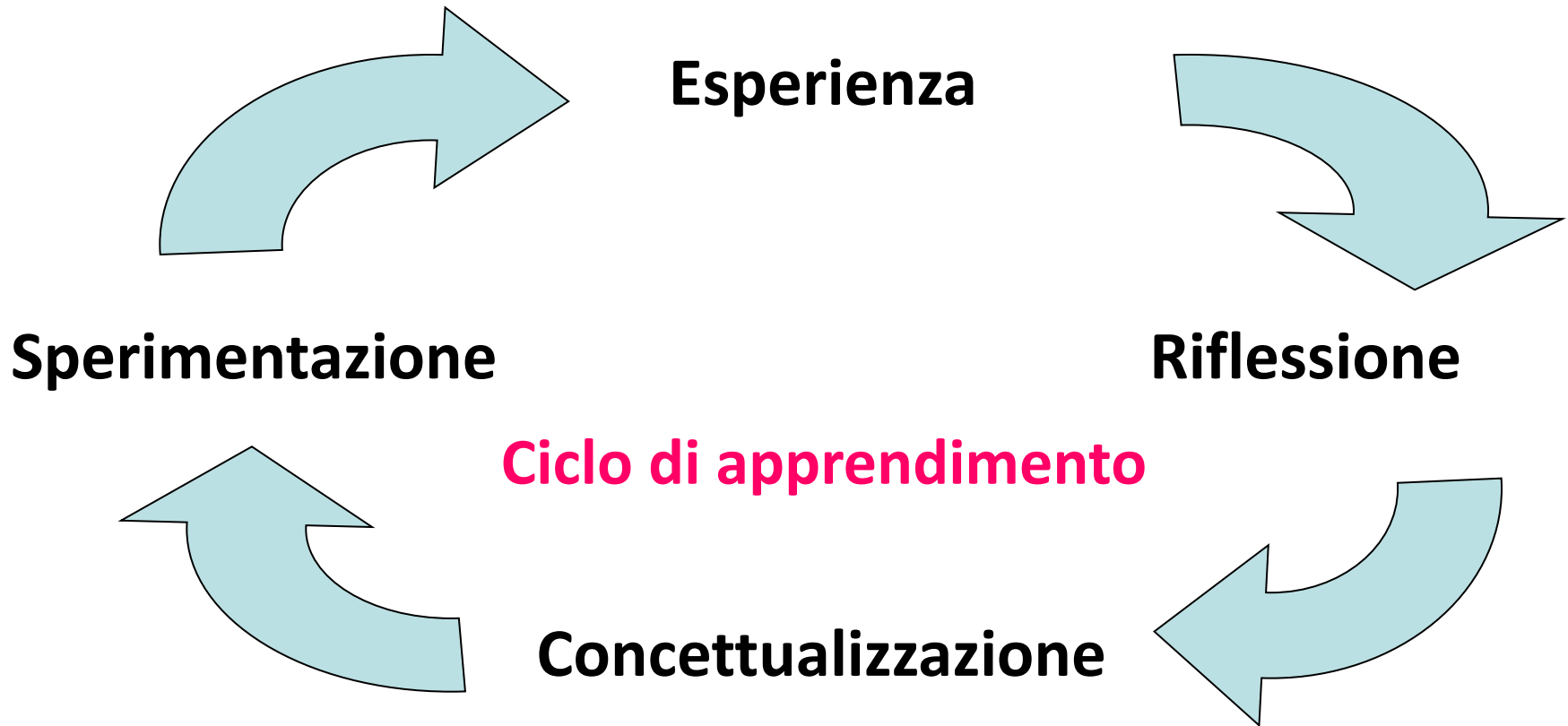
ARISTOTLE

Circumplex Model of Emotion

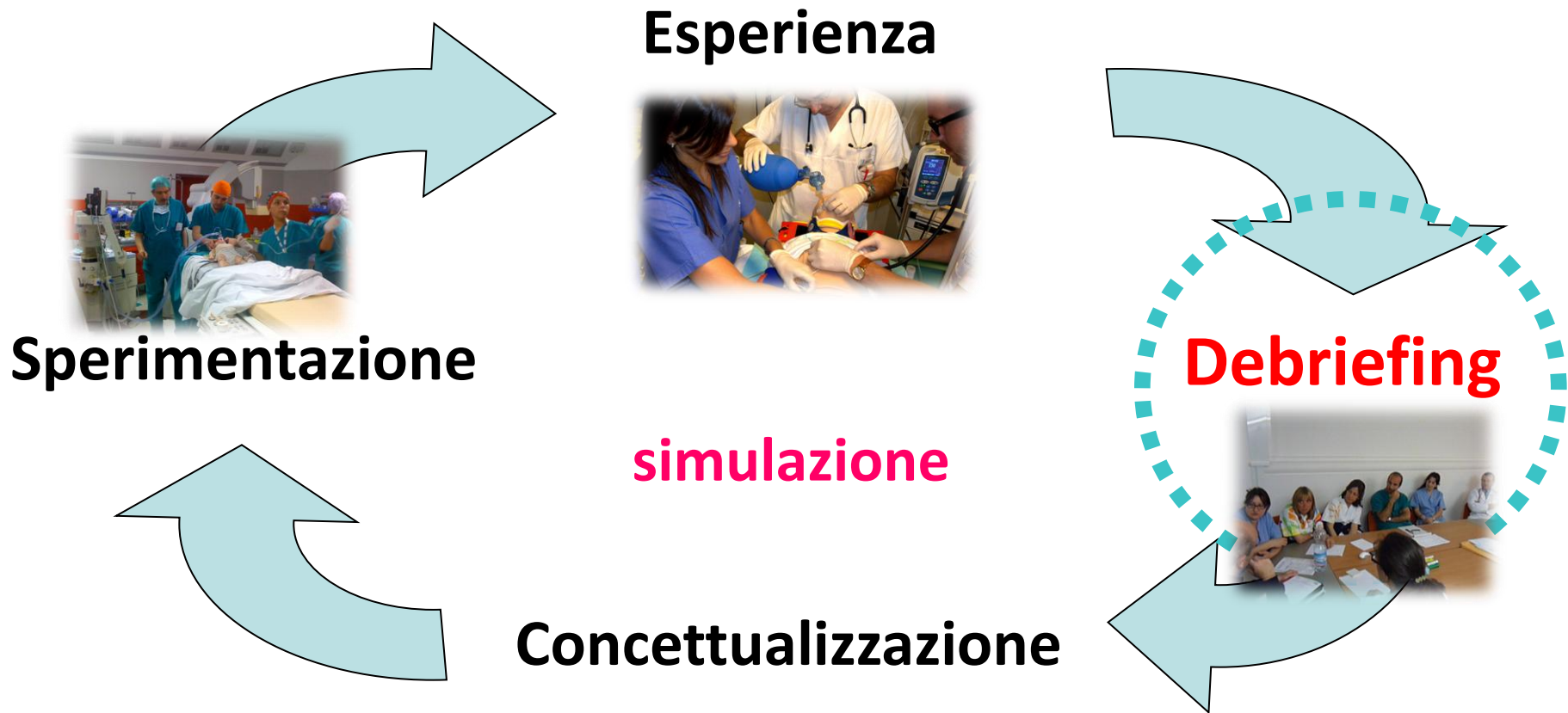
Russel and Feldman-Barrett



Teoria dell'apprendimento dell'adulto: il ciclo di Kolb



Teoria dell'apprendimento dell'adulto: il ciclo di Kolb applicato alla simulazione



Simulazione ad alta fedeltà



30%
lo scenario



70%
il debriefing

il debriefing

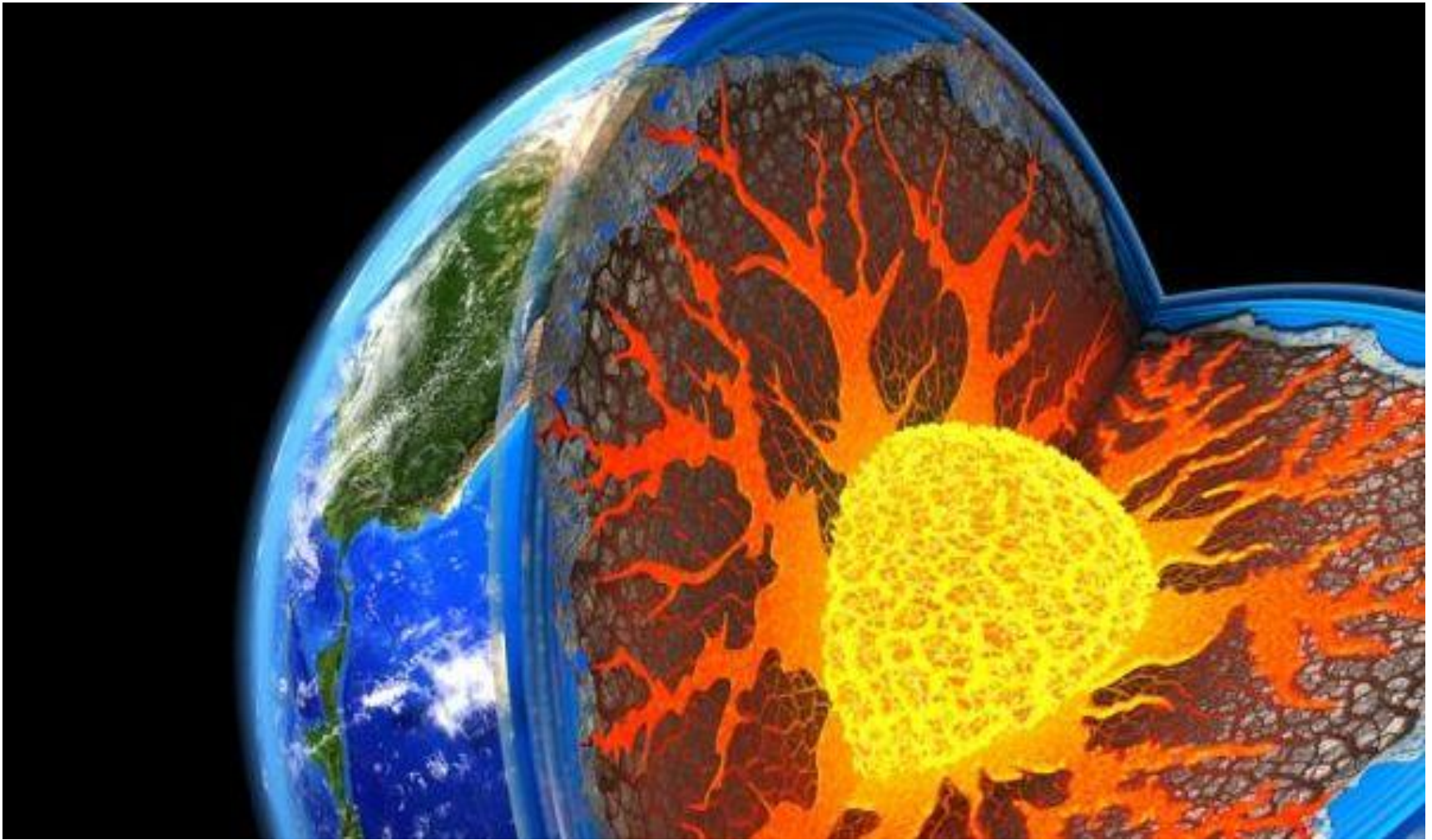
**“La simulazione è solo la scusa
per fare un debriefing”**

Prof. Peter Weinstock



Children's Hospital Boston
Simulator Program

il debriefing



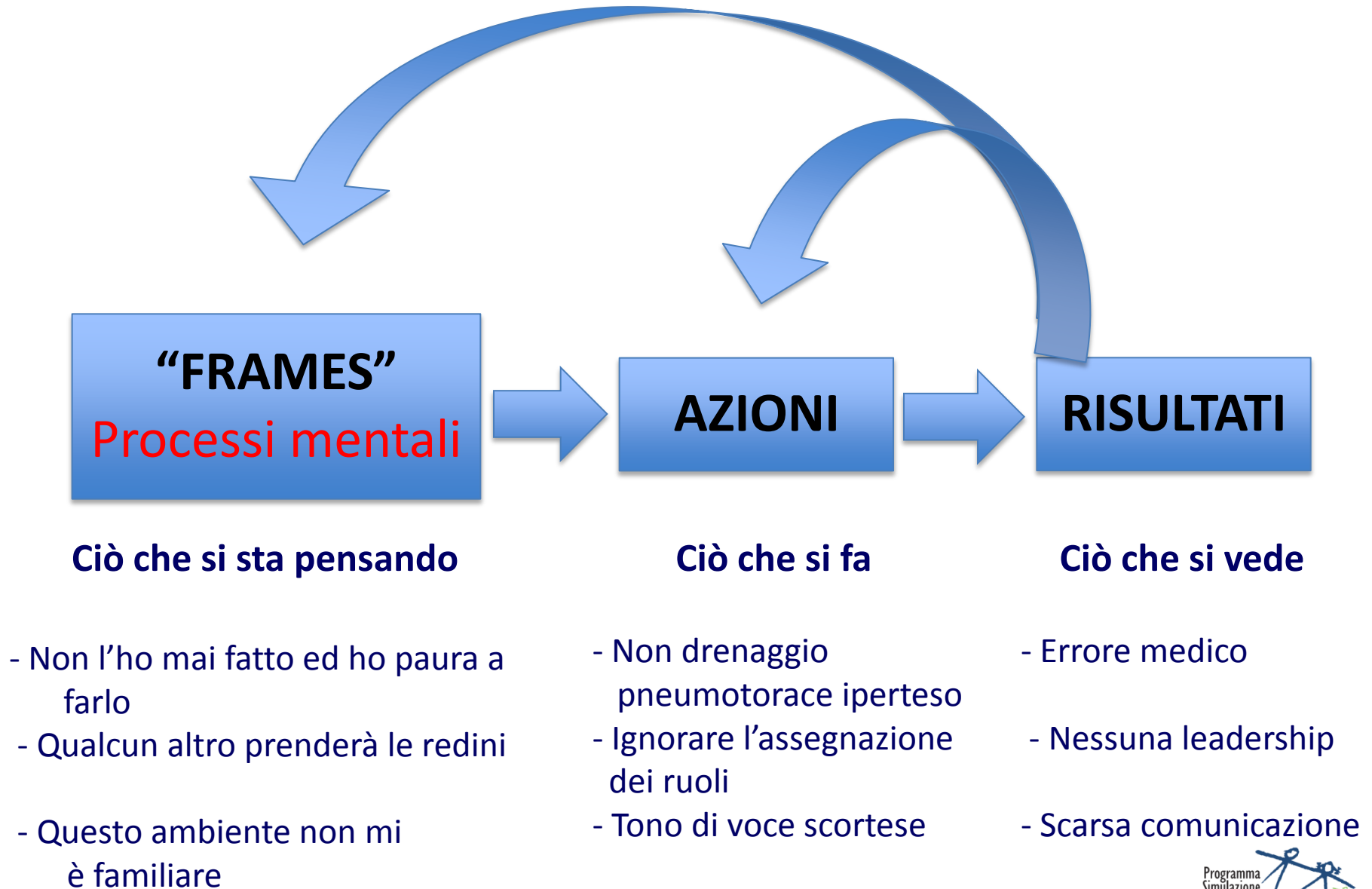
Cos'è il Debriefing ?

Una conversazione tra due o più persone per riesaminare un evento reale o simulato, nella quale i partecipanti analizzano le loro azioni e riflettono sui ruoli dei propri processi mentali, skills psicomotori e stati emozionali per aumentare o sostenere la performance nel futuro.

E' necessario il Debriefing?

- **Savoldelli, et al, Anesthesiology, 2006:** “...exposure to a simulation crisis without debriefing seems to offer little benefit to learners.”
- **Kriz, Simulation and Gaming, 2010 :** “...ineffective and even unethical” ... to conduct a simulation without debriefing.
- **Heukelom, et al, Simulation in Healthcare, 2010:** “Studies have indicated...in the absence of structured feedback, no learning of clinically relevant parameters occurs.”
- **Issenberg, et al. a BEME systematic review, 2005 :** “Feedback is the most important feature of simulation-based medical education”

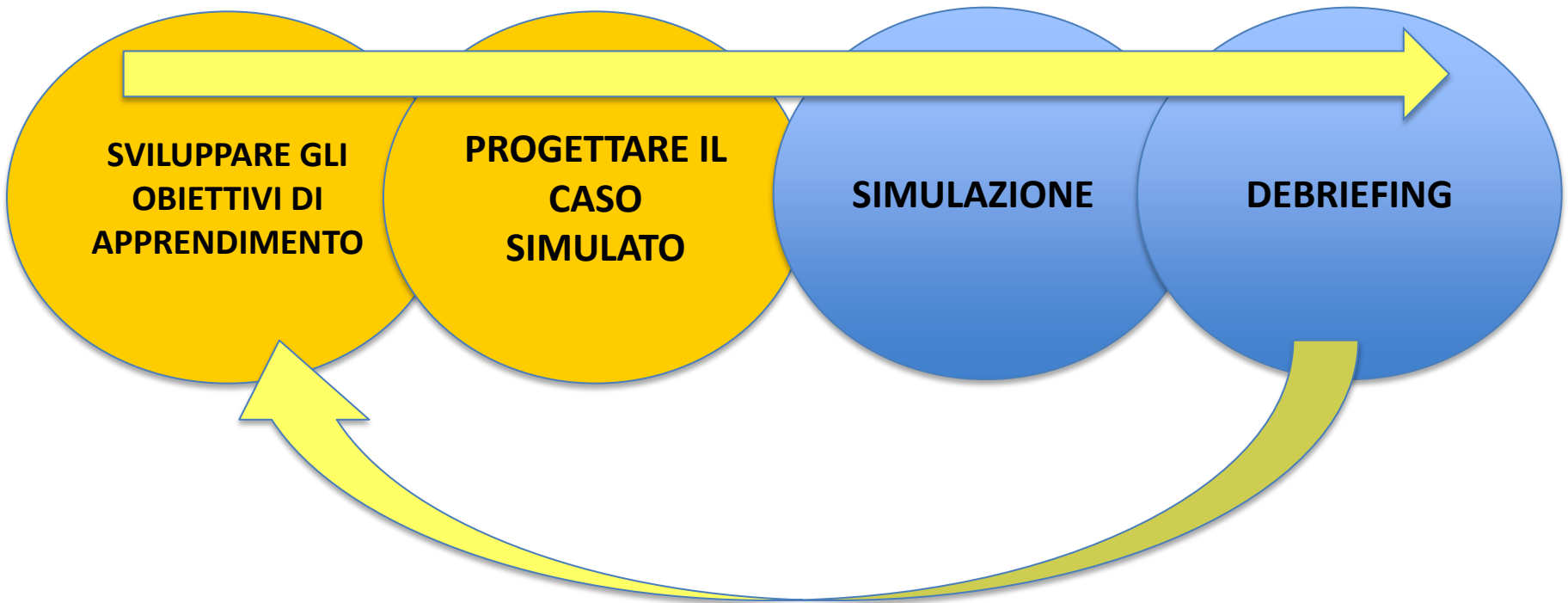
il debriefing



Debriefing orientato sugli obiettivi



Debriefing orientato sugli obiettivi



Rudolph JW, Simon R, Raemer DB, Eppich W. Debriefing as formative assessment: closing performance gaps in medical education. *Academic Emergency medicine*. 2008;15(11):1110-1116

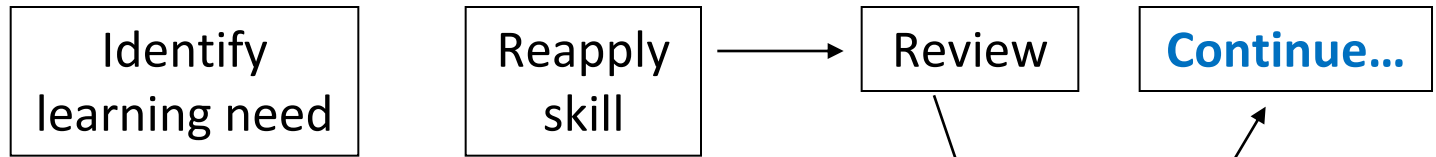
Simulation and clinical practice: strengthening the relationship

R L KNEEBONE,¹ W SCOTT,² A DARZI¹ & M HORROCKS³

CLINICAL ENVIRONMENT

Patients

Clinical supervision



Tutor support

Simulators

Simulator based practice

Further practice as needed

SIMULATED ENVIRONMENT

I limiti della formazione tramite Simulazione ad alta fedeltà nella Pediatria d'Urgenza

- Costi per i simulatori, per gli spazi, equipaggiamenti ...
- Tempo da dedicare a questo tipo di formazione
- Formazione della faculty dei docenti (debriefing)

**“Nessun simulatore potrà mai sostituire
un buon docente”**

I vantaggi della formazione tramite Simulazione ad alta fedeltà in Pediatria d'Urgenza

Messaggi da portare a casa

- Formazione su eventi rari ad alto rischio
- Formazione del Team
- Etico addestrarsi sul manichino e non sul bambino
- Si basa sull'apprendimento dell'adulto (debriefing)

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Grazie!



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