



Development and Implementation of an Escape Room in Health Sciences Education

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Presentation Description and Objectives

This presentation will describe the development and implementation of an escape room utilized as a learning strategy in health science education. Escape rooms use a collaborative approach as teams engage in critical thinking to solve puzzles and find clues to escape a room based on course content.

1. Develop an escape room as an active learning strategy.
2. Discuss the steps to implement an escape room within the curriculum.
3. Describe debriefing as an evaluation method.



We won't meet the needs for more and improved higher education until professors become designers of learning experiences and not just teachers.

Spence, L. In Fink, L.D. (2003). *Creating significant learning experiences : An integrated approach to designing college courses*. San Francisco, CA: Jossey-Bass

What is an Escape Room?

- ❖ Escape Rooms use an entertainment approach as teams engage in critical thinking to solve puzzles and find clues to escape a room.
- ❖ Pre-arranged scenario
- ❖ In the classroom setting this concept may be to solve a mystery by finding various objects through a series of puzzles to locate clues.

Hermanns, M., Deal, B., Campbell, A., Hillhouse, S., Opella, B, Faigle, C., & Campbell, R. (2018). Using an "Escape Room" toolbox approach to enhance pharmacology education. *Journal of Nursing Education*, 8(4) 89-95.

Where has it
gained
momentum?

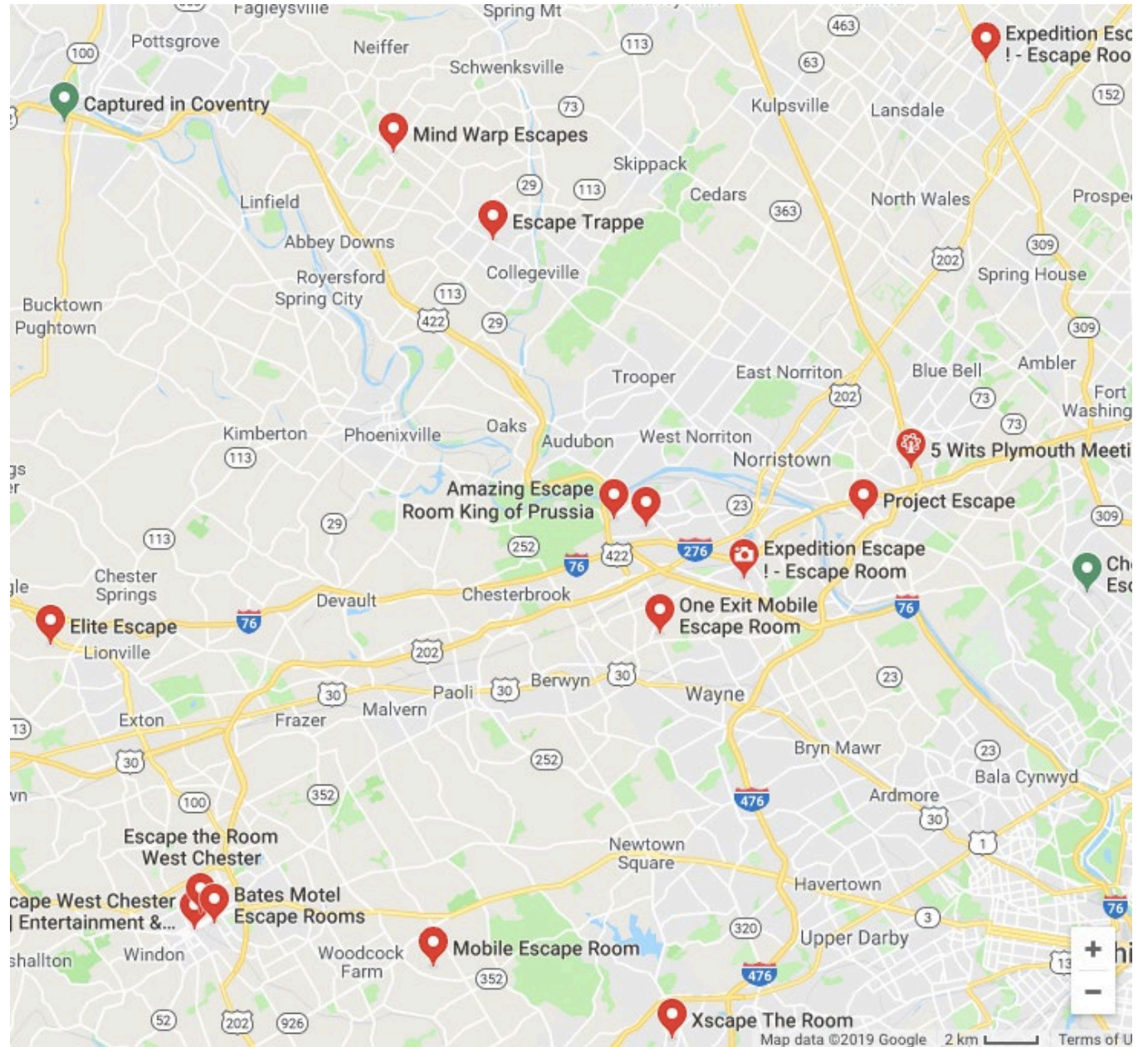


Live Action Escape Games

Led by trained facilitators, you and your teammates get "locked" into a room and have one hour to escape. Collect the clues and solve puzzles, problems, and riddles that lead to your escape. No special skills or knowledge required, just the desire to have fun!



Where has it
gained
momentum?



Where has it gained momentum in healthcare and healthcare education?

HEALTH & FITNESS

Penn Presbyterian creates 'escape room' for training staff to treat sepsis



UMN Nursing School escapes traditional teaching methods

University at Buffalo Builds Escape Room to Teach Teamwork to Nursing and Pharmacy Students

Oct 12, 2018 | [News](#), [Nursing Students](#)

UB builds escape room to teach nursing, pharmacy students teamwork



ACCELERATING CHANGE IN MEDICAL EDUCATION

3 ways medical schools are embracing gamification

MEDICINE . NURSING . STUDENTS

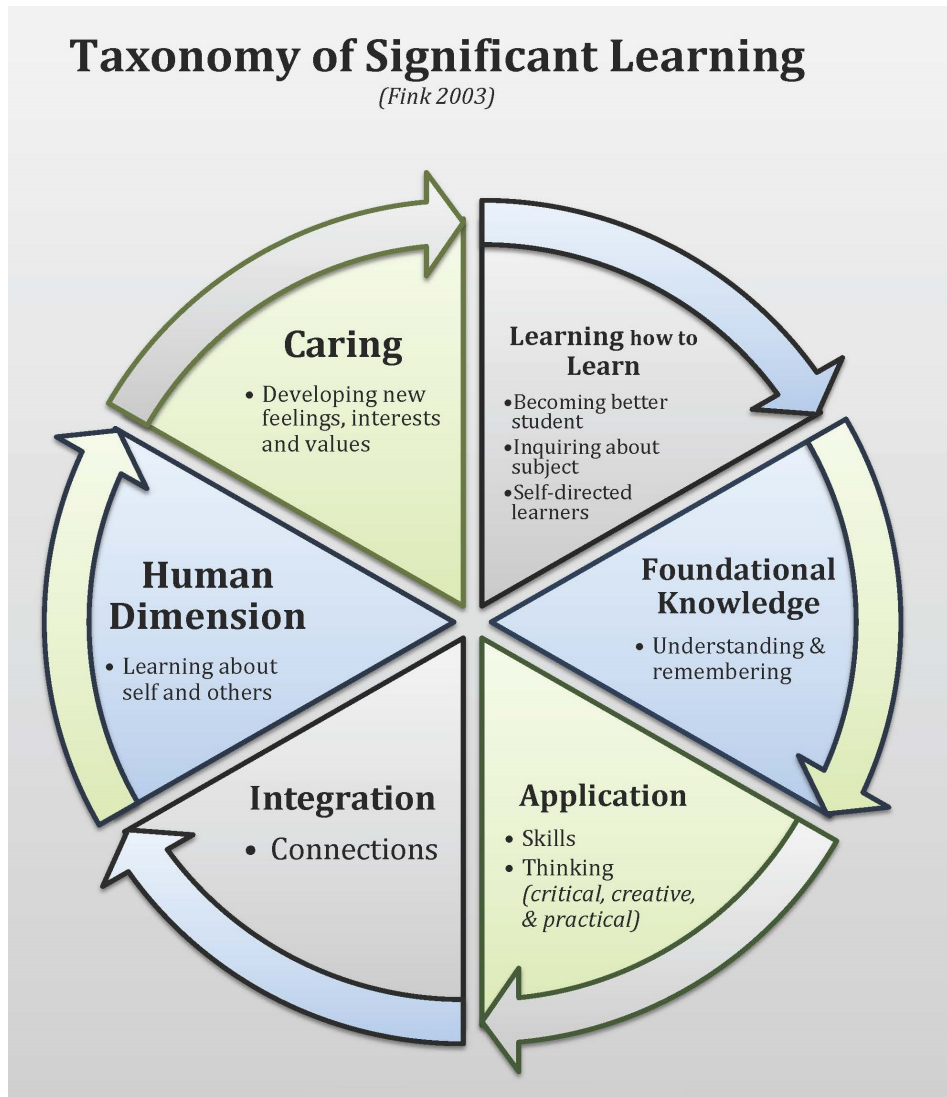
A great escape is a perfect learning tool

March 07, 2019

Why has
it gained
momentum?

- Millennials (28.7%)
- An Interactive Adventure
- Flipping the Classroom
- Teaching and Learning Strategy
- Hands on Team Approach
- Collaboration with Interdisciplinary and Intradisciplinary Professionals
- Communication
- Problem Solving
- Critical Thinking
- Fun!

Framework: Dee Fink's (2003) Taxonomy of Significant Learning



Fink, L.D. (2003). *Creating significant learning experiences: an integrated approach to designing college courses*. San Francisco, CA: Jossey-Bass.

Escape Room Development

- Faculty brainstorming related content that would be suitable for students
- Developed objectives for the activity
- Developed an "escape route" in a grid format (see next slide)
- Purchased locks and boxes (less than \$20)
- Developed power point
- Did a "dry run" with student participants and obtained feedback
- Implemented any modifications
- Obtained video consent from all students
- Set the stage in the classroom

Outline of Escape Room

+ Timer set for 15 minutes- countdown clock.

Client Status	Escape Room sequence	3. Pulse ox will have note that states : LABS- we will have a lock that students need to enter in word LABS (or numbers that coincide with labs) to open lock box	6. Student gives appropriate SBAR report and client's VSS return to normal and patient states "I feel so much better"
60 year old female with PMH CAD, CHF, CRI, and HTN	1. Step One NSS bolus 250 mL over 1-hour x 2 then 1000 mL over 8 hours. What is the rate * Select bag	Inside box is EKG with depressed T waves & PVC's (students should check K+ level)	CONGRATS you have saved your patient!
Admitted Nausea, vomiting, diarrhea for last 72 hours	Answer 125 mL/hour	4. Lab results will have BUN, Creat, K+ 2.7 in the EHR	Supplies: Various IV bags, Question on poster board, Pulse ox, Lock box with lock combination, EKG strip, K-rider and an EHR Standardized patient
Pt states "I am having issues and I feel dizzy when sitting up"	2. Note attached to NSS bag (have several different IVF's to choose from.	Contact HCP or will order K-Rider 20 mEq in 100 cc NSS over one hour. What is the rate?	
Vital signs: 90/55, HR 110 BPM, RR 22, Temp 101.2	Note will state: the nurses priority action is to a. administer IVF, Elevate HOB, apply oxygen or assess pulse ox	5. Once K-Rider is obtained Back of K rider should say your shift is over so please give report (SBAR) Congrats you have escaped your shift.	

The Great Escape Rules for Students

- ▶ Work as a team
- ▶ You can ask for peer help three times during the experience as needed; you can call the healthcare provider
- ▶ No electronic resources permitted
- ▶ Most important: Think like a nurse

Your Patient



60-year old female with a Past Medical History of CAD, CHF, CRI, and HTN

Complains of nausea, vomiting, and diarrhea for last 72 hours after eating at a restaurant

Vital Signs: 90/55mm Hg, 110bpm, 28 breaths/min, 101.2 °F

Patient states...

Define at least 3-5 symptoms your patient may present



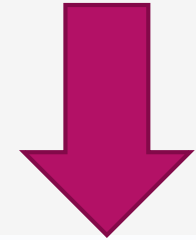
This was used to gain access to the room



Calculate the Rate

- ▶ **Normal Saline 1000 mL over 8 hours**
- ▶ **What is the rate (mL per hour)?**

There were four different types in the lock box to select the correct one after entering the rate into the lock and back of Normal Saline had a clue



Look at the vital signs, what is priority intervention at this time?

▶ 0800 vitals: 90/55 mmHg, 110 bpm, 28 breaths per min, 101.2 °F

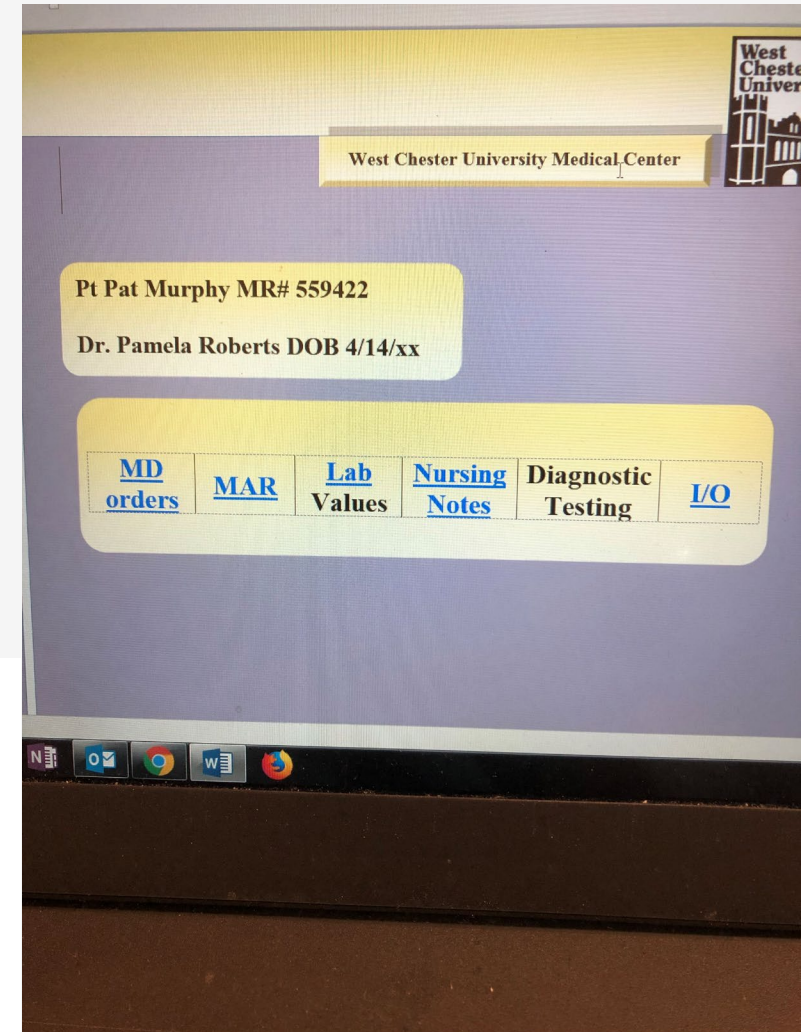
- A. Stop IV fluids
- B. Elevate the head of the bed
- C. Apply oxygen
- D. Assess pulse oximetry



Back of the pulse ox
had a clue "LABSK"

Lab Values from the Electronic Health Record

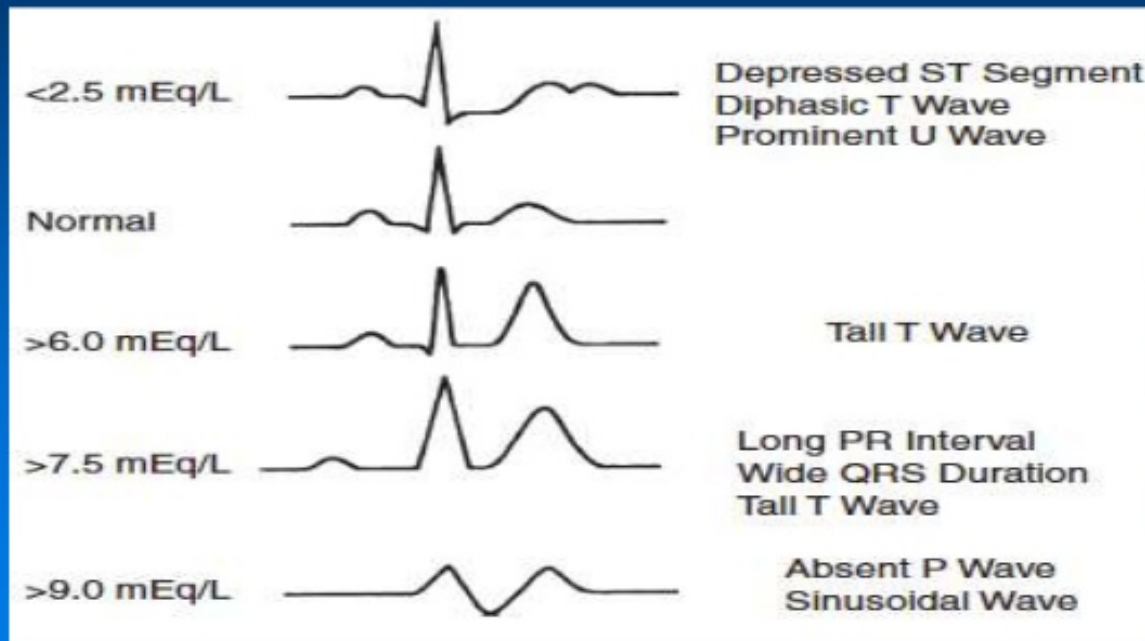
- ▶ BUN
- ▶ Creatinine
- ▶ K+



I think we have a problem.....

Potassium

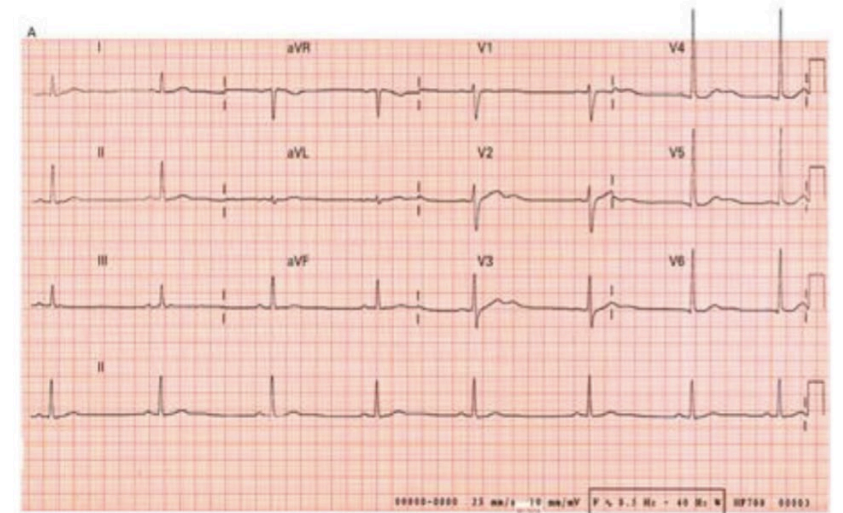
- Potassium levels and changes in ECG:



This was in the locked box
but needed the word "LABK"

Patient: M.P.
Allergies: NKA
AGE: 60 Years old
PMH: CAD, CHF, CRI, HTN

Interpretation: Normal Sinus Rhythm with U-wave noted in lead V2, V3, V4
Dr. Larry Golden



Low K+---WHAT SHOULD THE NURSE DO?

Potassium (Serum)

More Or Less Can Be Life Threatening!

Warning: Watch Potassium Levels in Clients with:

- Renal failure,
- Hydration imbalances
- Acid-base imbalances
- Cellular damage
burns
accidents
surgery
- Diabetes

Potassium at 6.5 or 2.5 can be life threatening. The safest place is 3.5-5.0mEq/L.

Watch K levels with Digitalis, Diuretics and IV fluids.

↑K - slow pulse, oliguria, muscle flaccidity, alkalosis.

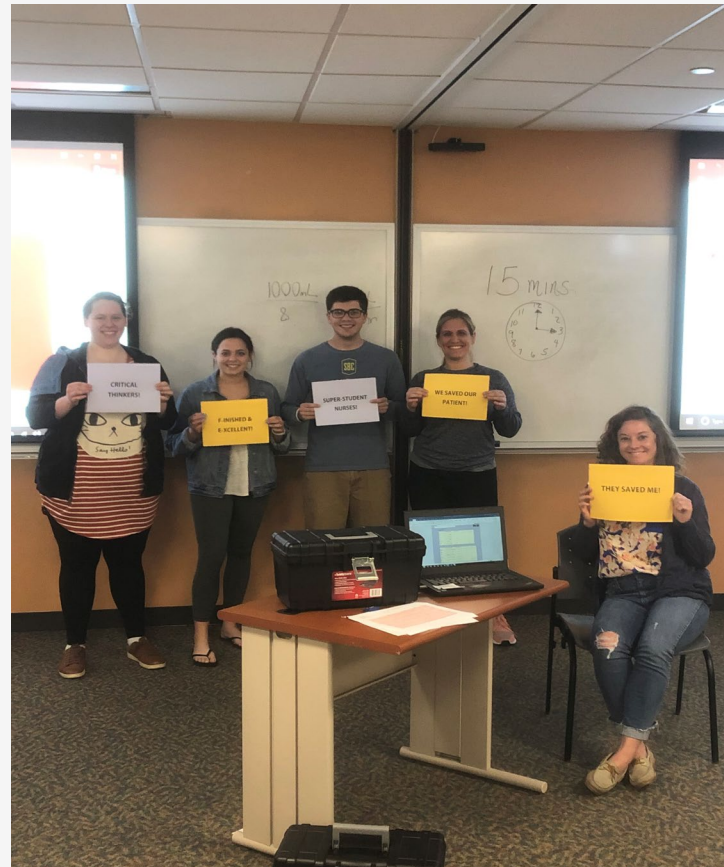
↓K - tachycardia, fatigue, hypotension, acidosis.

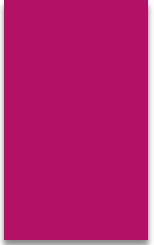
This was available to the students to select appropriate intervention



Congratulations! You have saved your patient!

- ▶ Vital Signs: 110/70 mm Hg, 88 bpm, 22 breaths/min, 99 °F
- ▶ Patient states...



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- ▶ Led by a facilitator, allows dissemination of active learning to every member of the group in a safe environment.
 - ▶ Enables participants to more fully think through and discuss what has transpired, gain a more in-depth understanding and appreciation of knowledge, and retain knowledge and skills for future application.
 - ▶ Participants do most of the talking.



Debriefing
Wickers (2010)

I saw.....I think.....I wonder....

What is guiding the student's actions?

Discussion allows for participants to determine different or better decisions.

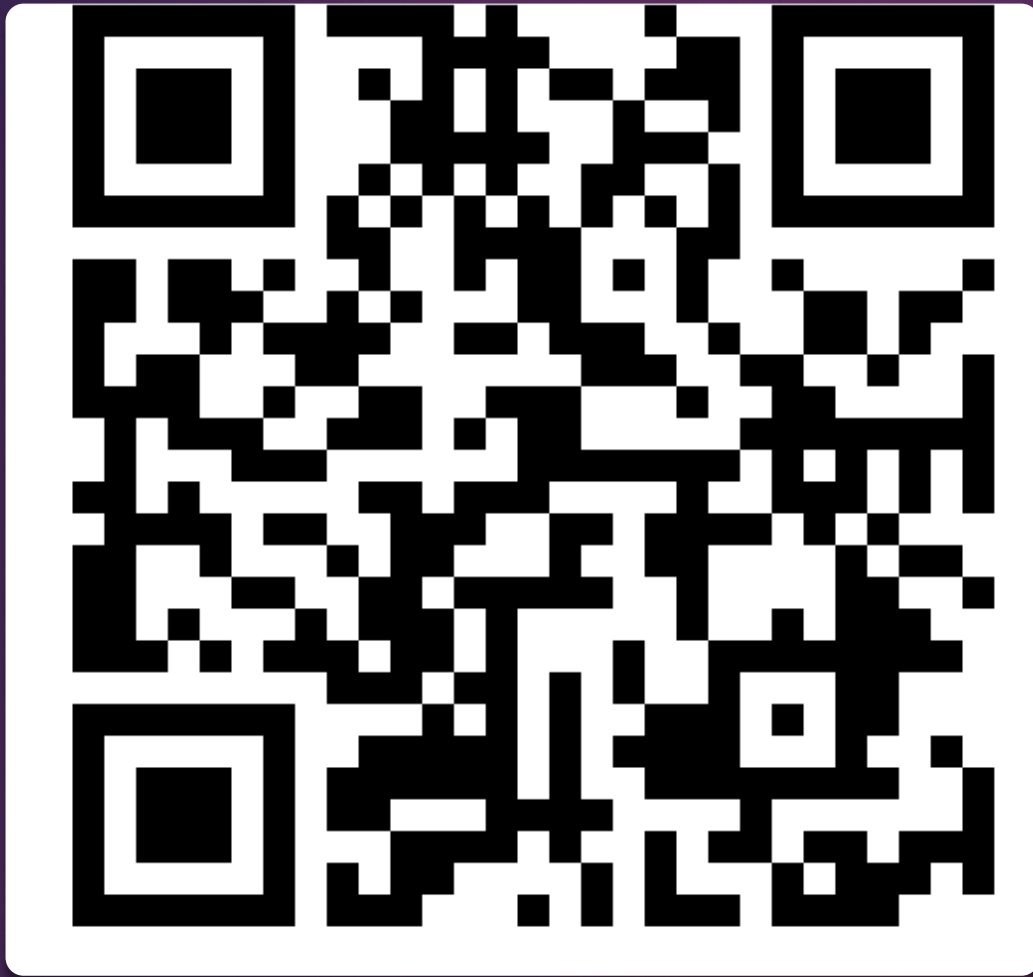


**Debriefing with Good Judgement
Rudolph et al. (2007)**

Now it's your turn
to participate!

- ▶ Need two
volunteers
- ▶ Help save
the WCU
mascot





1. Go to padlet.com
2. Take a picture of the QR code
2. Post a topic that you may want to develop an escape room
3. What are potential barriers to development?

<https://padlet.com/kmkk/z09vxt1r0pjf>

References

- Fink, L.D. (2003). *Creating significant learning experiences: an integrated approach to designing college courses*. San Francisco, CA: Jossey-Bass.
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- Wickers, M. P. (2010). Establishing the climate for a successful debriefing. *Clinical Simulation in Nursing*, 6(3), e83-e86.