

Gamification of Urologic Study Aid Questions to Improve Engagement and Retention of Knowledge

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2026 SAU Winter Meeting

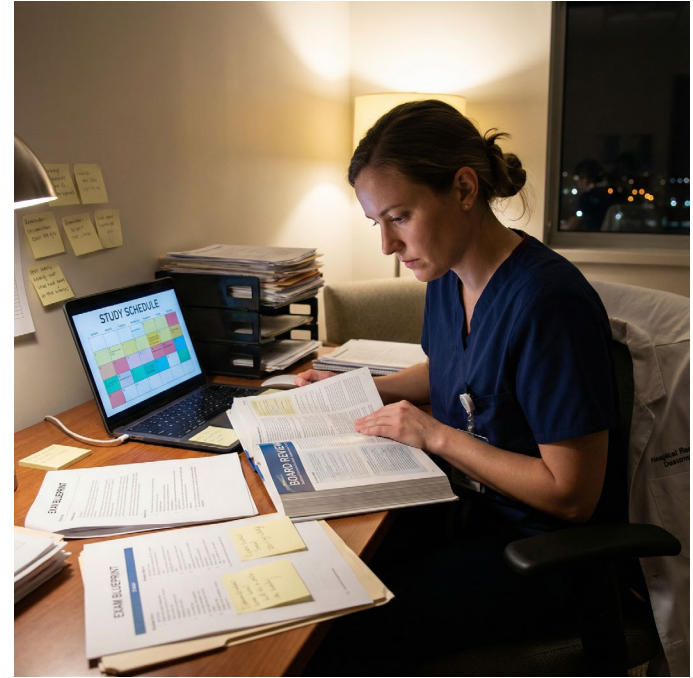
Financial Disclosure

I do not have any relationships to report with ACCME defined ineligible companies.

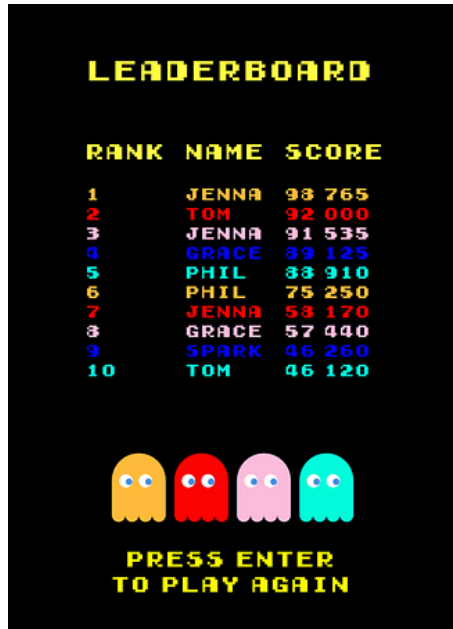
I will not be discussing unlabeled/investigational uses of medical devices or pharmaceuticals during this presentation.

Philosophy of resident education

- Urology in-service exam scores are correlated with board scores as early as PGY-3
- What contributes to success on ISE?
 - consistent daily review
 - increased studying time
 - using review questions



Gamification



- The application of the fun or addictive aspects of game design to education
- At least 3 of the following elements:
 - Question bank / gradable content
 - Immediate feedback
 - Leaderboard
 - Progress bar / levels
 - Social interaction
 - Reward incentive

Key components of gamification

Adapted from Kandamaraman 2022, Singhal 2019:

- **Fun:** promotes active participation
- **Motivation:** extrinsic & intrinsic
 - Over-justification effect vs catalyst effect
- **Rewards:** instant incentives for small, manageable goals
- **Competition & Collaboration:** balance is key to optimize positive stress
 - Social Cognitive Theory
- **Repetition:** repeated testing for active learning

Gamification in surgical resident education



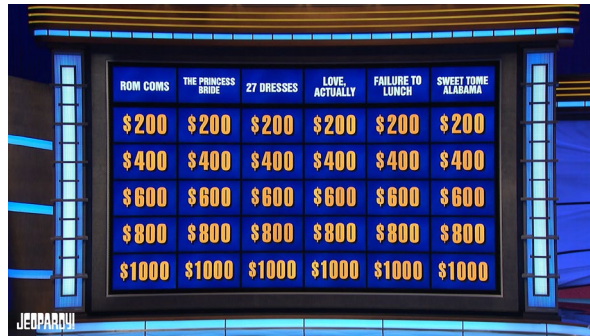
Question of the day via Twitter (Lamb 2019)



Draft into longitudinal teams throughout residency with point leaderboard and awards (McAuliffe 2019)

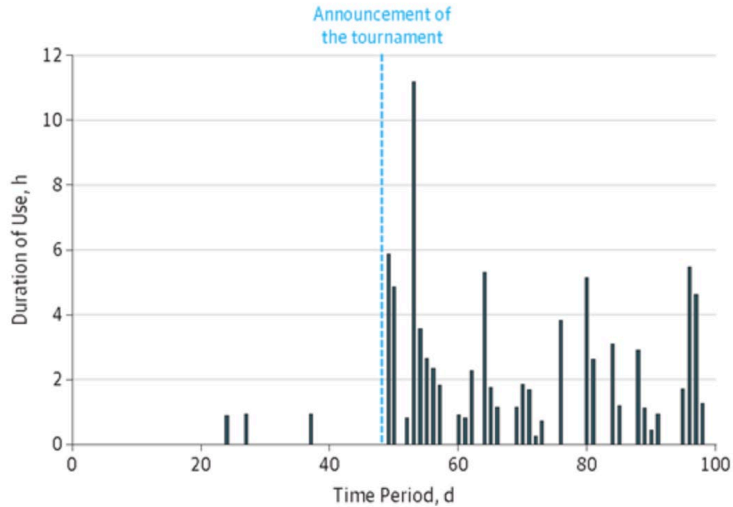


Question bank with team-based leaderboard via badges (Alexander 2019)

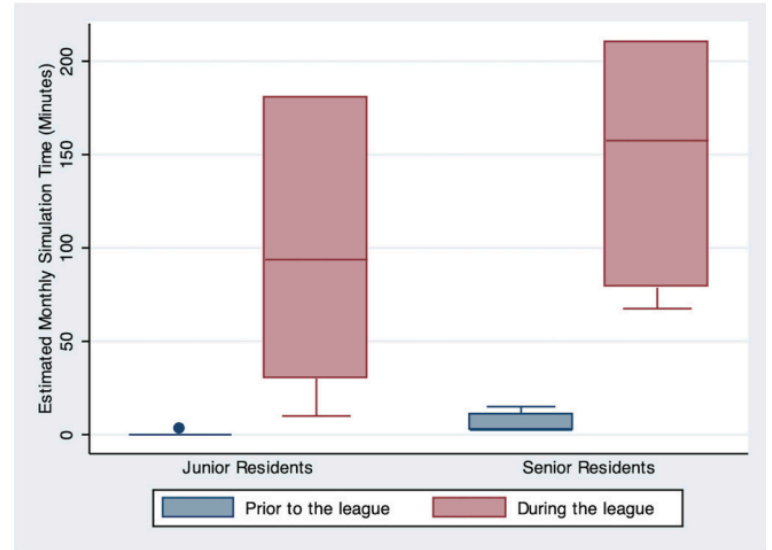


Weekly jeopardy competitions during didactics (Hancock 2021)

Gamification in urology resident education



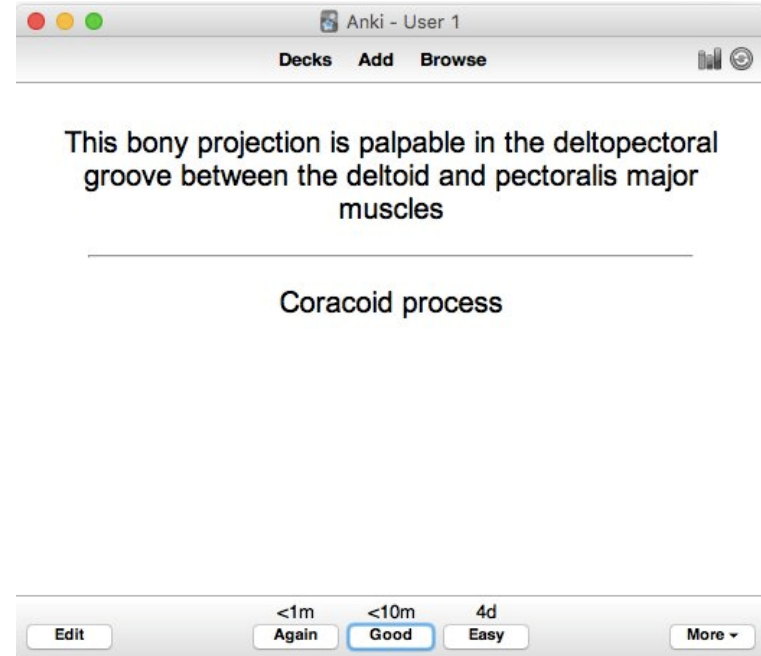
Elimination-style tournament with prizes
(Kerfoot 2014)



Team-based head-to-head matches
in round robin format
(Moran 2021)

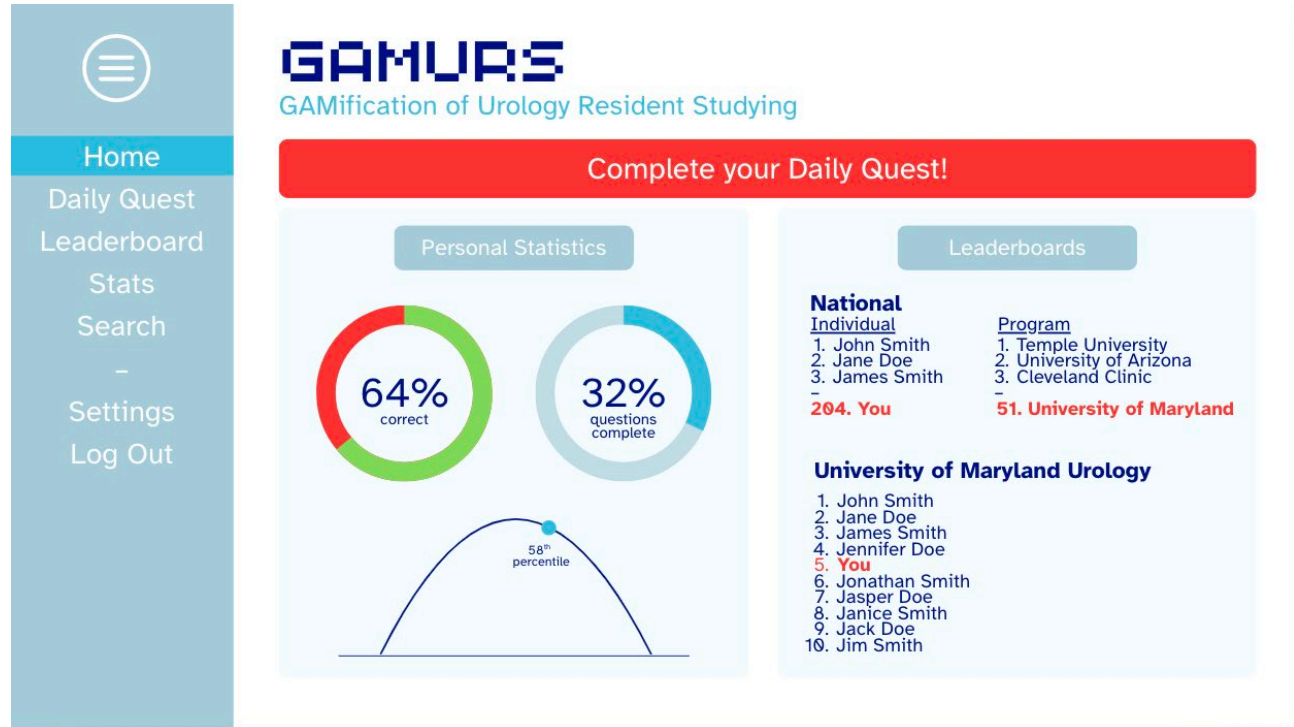
Spaced Repetition

- Repeated, longitudinal testing of the same material over time
- Improves long-term retention of new knowledge
 - Practicing FM physicians (Price 2025)
 - Urologic knowledge in 3rd year medical students (Kerfoot 2007)

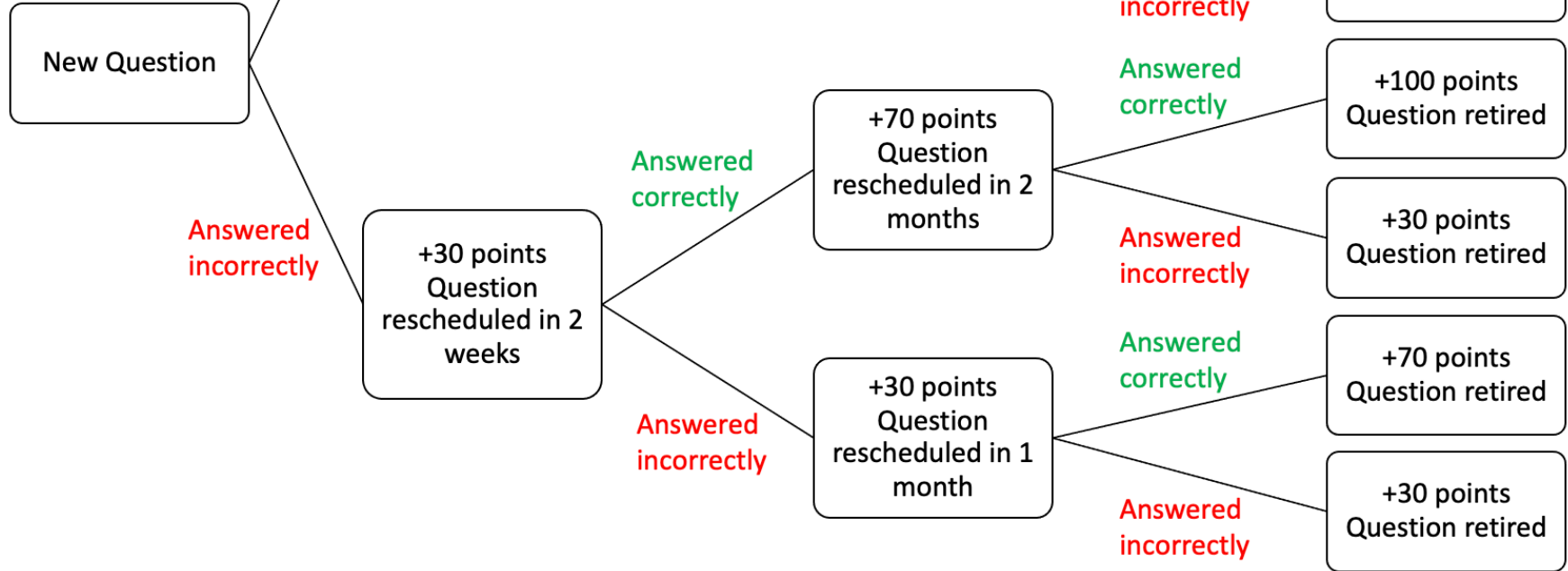


GamURS: Gamification of Urology Resident Studying

- Web and app based practice question bank
- Leaderboards for individuals and residency programs
- Progress bars for completion
- Cash prize for winners



Point and spaced repetition system





Home

Daily Quest

Leaderboard

Stats

Search

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GAMURS

GAMification of Urology Resident Studying

Question 1 of 5.

A 55 year old man with no known past medical history presents for erectile dysfunction. According to AUA guidelines, what laboratory workup should be obtained?

- A. HbA1c
- B. TSH
- C. testosterone
- D. lipid panel
- E. PSA



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GAMification of Urology Resident Studying

Question 1 of 5.

A 55 year old man with no known past medical history presents for erectile dysfunction. According to AUA guidelines, what laboratory workup should be obtained?

- A. HbA1c
- B. TSH
- C. testosterone
- D. lipid panel
- E. PSA

Correct!

Current AUA guidelines on ED recommend that early morning total testosterone should be measured in all men with ED. Other testing, including HbA1c, TSH, lipid panel, and PSA, are optional as they are unlikely to change management options but can help unmask undiagnosed conditions.

Total score: 1800

You just scored **100** points for answering correctly on your first attempt.

This question will be rescheduled in 2 months.

University of Maryland Urology

1. John Smith
2. Jane Doe
3. James Smith
4. Jennifer Doe
5. **You**
6. Jonathan Smith
7. Jasper Doe
8. Janice Smith
9. Jack Doe
10. Jim Smith

Research Directions

Impact on resident experience

- Pre- and post-intervention questionnaires
- Evaluate subjective impact of specific aspects (competition, rewards, leaderboard, immediate feedback)

Impact on resident engagement and performance

- Pre- and post-intervention ISE scores
- Time spent on gamified platform as well as total self-study

Optimization of resident self-study

- Website vs app usage
- Reminder emails or notifications
- Daily vs weekly question “quests”

Conclusion

Make education more fun, engaging, and effective!



Thank you

References

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