Medical Educator as Game Master: What Dungeons & Dragons Can Teach Us About Small Group Learning

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"Roll a perception check," says the Game Master.

A 20-sided die tumbles against wood.

"That's a 17."

The Game Master smiles knowingly. "On a 17, you notice a hoard of axe-wielding dwarves charging out of the woods. They look angry. What do you do next?"

"I… cast a wall of fire between us and the dwarves!"

Tabletop role-playing games provide a form of play that is shaped by its players' imaginations. In Dungeons & Dragons, the quintessential tabletop role-playing game, a Game Master serves a facilitative role, informing the player characters about the scenarios, challenges, and other characters they encounter. TABLE 1 provides a more detailed explanation of role-playing games.[1] There are rarely winners or losers. Discovery arises instead from the process of collaborative imagination. As medical educators by day and Game Masters by night, we assert that role-playing games provide a wellspring of insight and strategies for effective small group facilitation for medical trainees.

In traditional educational approaches, teaching sessions are designed in a linear fashion, in which the educator's mind—and likely a slide deck—has predetermined how the experience will start, how it will end, and what will be accomplished in between. In contrast, role-playing games train Game Masters to embrace a democratic facilitation style. In recent years, democratic education has gained more traction in higher education.[2] These "students as partners" efforts foster a "relationship in which all involved… are actively engaged in and stand to gain from the process of learning and working together."[3] In this model, instructors are worried less about the mechanics of teaching and more about the interests of learners, adjusting discussions to allow learner voices to emerge. Though these newer frameworks embrace learners' input, educators still have an important role similar to Game Masters: they partner with learners and facilitate the overall experience.

Use of the word *facilitator* rather than *leader* or *lecturer* reframes the role of educator, who serves as guide and developer of group discussion. Instructively, in tabletop role-play it is the *expectation*, rather than the exception, that Game Masters provide outcomes that are spontaneous and customized to character free will and the rolling of dice. Democratic facilitation is such a vital part of fueling this theater of the mind that a Game Master who provides an excessively linear experience is described, often pejoratively, as "railroading." If railroading risks turning an imaginary world from concrete to cardboard, what opportunities might we be missing by railroading our trainees?

To be sure, the educator's role as expert still holds value even in a facilitator model. Tabletop Game Masters use their intimate knowledge of game rules to form the bounds of an otherwise limitless world. Similarly, even the progressive, facilitative educator must step in to address incorrect fact assertions, implausible differential diagnoses, or excess attention to irrelevant aspects of a case. In short, expertise is helpful, but not sufficient for full engagement.

Chi's Interactive-Constructive-Active-Passive framework proposes that learners benefit most from collaborative learning.[4] Participants co-construct knowledge via meaning-making with others, often in a group setting. This collaborative approach goes beyond well-established tenants of active learning (in which learners participate but may not truly contribute to meaning-making). Talented Game Masters embody the ethos of collaborative learning, in which meaning is generated through shared experiences, often associated with emotion.[5]

For more traditional medical educators to embrace this approach, collaborative teaching may require significant reframing of mindset. In such a model, an educator's efficacy may correlate not with the depth

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TABLE 1
Functions of Tabletop Role-Playing Games and GME

Tabletop Role-Playing Games	GME
Recreational activities in which people imagine scenarios through the lens of fictional characters	Residents and fellows meet in groups with a facilitator, an expert for learning
Each character may have unique attributes, and together they achieve goals and overcome obstacles	GME learning contexts commonly involve learners at diverse levels or competencies
Game events and encounters are guided and overseen by a Game Master, who must integrate player requests and actions, game rules and mechanics, and the outcome of random dice rolls, all in real time	GME teaching often occurs in group settings over time, which provides opportunities for collaborative learning and team building GME educators benefit from a facilitator role, with group interaction, rather than solely a prescriptive or expert role
The shared storytelling classically—but not necessarily—occurs in a medieval fantasy world context, with magical spells, mythical creatures, and fictional humanoid beings	As a facilitator, the GME educator is a curator of experiences, including real-world clinical experiences, simulations, role-play, and case-based discussions
Gaming sessions or campaigns conclude when players accomplish a shared goal, often defeating a high-level enemy or solving a collaborative puzzle	Teaching sessions conclude when learning objectives are met

Abbreviation: GME, graduate medical education.

of their mastery of the subject matter, but rather with their ability to guide the learners' thinking, experimentation, reflection, and opportunities for collaboration toward a shared group goal. Like the Game Master,[6] educators need to build an experiential world in which learners will play, and provide the ground rules to create a safe learning environment that supports these activities (TABLE 2).

Both Game Masters and facilitators must let go of preconceptions of how a session should be. In tabletop role-playing games, a Game Master may prepare characters, monsters, challenges, or entire cities that go unused because participants elect to walk down a different road, abandon one objective in pursuit of another, or pick a fight with a stranger in a tavern. The Game Master therefore needs to prepare just enough content to maintain the experience and keep the narrative moving in the direction of the campaign's goals, without spending unsustainable amounts of time preparing for every possible permutation.

This practice in role-playing games forced the authors to confront our own commitment to learner-centeredness in graduate medical education (GME). A patient case discussion may, for example, heed learners' desire to explore a patient's anemia at the expense of discussing the patient's hyponatremia. A laparoscopic approach for a cholecystectomy may be explored in greater detail rather than the nuances of the abdominal examination. The latest data on GLP-1 agonists may draw learners into richer discussion than would the complexities of insurance coverage of insulin. Educators cannot feasibly prepare full lectures about every possible facet of a complex case. They may be better served to identify key learning objectives, and then envision potential activities or provocative questions that guide participants toward a valuable collective learning experience.

Another attribute of effective Game Masters and medical educators alike is the active incorporation of individuals' needs into the overarching goals of the session. Experienced Game Masters deliberately cater to the unique attributes of the players' chosen characters, each with their own backstories, motives, goals, strengths, and weaknesses. At the start of a Dungeons & Dragons campaign (sometimes called a "session zero"), and intermittently between sessions, Game Masters seek goals and feedback from participants. Game Masters will also reflexively modulate the experience in real time based on observations about participant reactions during play. Furthermore, as in a medical small group teaching activity, Game Masters often conclude sessions by soliciting end-of-session reflections. This debrief is so valued in the tabletop role-playing community that televised productions of these games will even formalize this debrief process into an additional post-session discussion program.[7]

Some of the most rewarding challenges are those in which different players' strengths complement one another, such that only by joining their unique abilities can the task be accomplished. Similarly, it is commonplace for medical educators to teach groups of trainees with heterogenous learning styles, personalities, competencies, and prior experiences. Each learner can bring their perspective to solve problems, and effective facilitators should see learner diversity as an opportunity for dynamic learning activities.

Most tabletop role-players do not return to play solely for the wonders of a magical world; comradery, togetherness, and the pursuit of a common goal—even

TABLE 2
Principles From Tabletop Role-Playing Games and Their GME Correlates

Master Principle[6]	GME Small Group	Example
Know your players	Know your learners	At the start of a conference for residents and students, the facilitator budgets time for learners to introduce themselves and to share baseline attitudes, knowledge, and individual learning goals.
Be consistent and fair	Be consistent and fair	A ward attending ensures that all have an opportunity to participate by redirecting a dominating intern to allow a quieter intern a chance to speak.
Foster a positive environment	Foster a positive learning environment	The facilitator uses learners' names, respects all contributions and questions, and provides regular, expected feedback.[7]
Use the rules as a tool	Maintain reasonable bounds on learner-driven exploration	An attending welcomes contributions as the team brainstorms differential diagnoses, but respectfully questions implausible or inaccurate contributions that take the group too far from session objectives.
Know when to roll the dice	Know when to use stochastic information-sharing	During a group discussion on a patient with gram negative sepsis, the facilitator informs residents that the patient has suddenly developed hypotension and asks learners to work together to stabilize him.
Keep track of time	Keep track of time	The facilitator acknowledges that 30 minutes remain in the learning session and prompts learners to shift toward the remaining learning goals.
Be prepared … to improvise!	Involve learners in deciding the flow of discussion and direction of learning	A facilitator recognizes during a case conference that residents wish to delve deeper into the patient's hyponatremia. The facilitator decides in real time to nurture this rich discussion, while forgoing a prepared discussion of hypokalemia.
Be forthcoming with information	Serve as a content expert when needed	A chief resident recognizes when learners are stuck in generating a differential for a patient's acute abdomen. The chief sketches a framework for the main causes of acute abdomen, then allows learners to proceed from there.
Embrace player creativity	Embrace learner creativity	The facilitator steps aside for trainees to "commandeer" the whiteboard to sketch a concept map for a pathophysiology discussion.
When in doubt, add an explosion!	Explosions are best avoided …	If adverse events occur, maintain a calm, safe environment and take ownership of the facilitator role in the event.

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a fantastical one—are core to these games' appeal. Part of accomplishing this dynamic is fostering psychological safety, in which all are committed to having a fun, creative experience together and encouraged to contribute ideas without fear of judgement. Game Masters sit at eye level with their players and garner participation through open-ended questions, humor, collaborative puzzles, and the aforementioned opportunities for reflection. GME educators may benefit from doing the same, along with eliciting learners' goals and barriers and addressing learners by their names. These brief moments spent in establishing this positive learning climate allows for more effective transmission of content. As a testament to mitigating power dynamics, these games teach us that even when the facilitator is omnipotent in their control over a fantasy world, the Game Master's talent is still determined by what they made their players feel during their session together.

A final critical skill for a Game Master is the power of imagination to inspire others in a collaborative, shared purpose. The Game Master's gift is the imagination to create an exciting world of suspense and surprise that draws players back to the table for yet another session. Not every medical educator needs to be J.R.R. Tolkien or Ursula K. Le Guin, but we would do well to enliven our sessions. In a world where small group sessions are increasingly conducted on video platforms, the need to engage our imagination is more critical than ever. Medicine is rich in imaginative imagery, which we too often sterilize with our PowerPoint slides. COVID-19 is more overwhelming than any evil swarm a Game Master could conjure. Pseudomonal sepsis is every bit as terrifying as a mountain troll. Systemic lupus is as bewildering as any curse hurled by a warlock. Tabletop role-playing games remind us that adult learners have an incredible, untapped capacity to create.

Adopting Game Master strategies enlivens the pedagogic experience for everyone—trainees and educators alike. Encouraging a democratic, participatory learning culture, emphasizing psychological safety, incorporating individual needs, and encouraging imagination are key elements that have made role-playing games such as Dungeons & Dragons so enormously popular for decades. We encourage fellow clinician educators to adopt Game Master principles and even experience these games for themselves around a table with dice and friends. We are all on this quest together.

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