Use of Tabletop Simulation and Gamification to Enhance Understanding of Systems-Based Practice in Medical Education

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Objectives

1. Define Systems-Based Practice (SBP)
2. Identify challenges of incorporating SBP into didactic curriculum
3. Examine the effect of tabletop simulation via gamification delivery method on medical learner’s understanding of SBP principles.
4. Outline next steps for interprofessional educational experience
Why Focus on Systems-Based Practice?

• “An awareness of and responsiveness to the larger context and system of health care and the ability to call effectively on other resources in the system to provide optimal health care”

• **Core Competency** in Graduate Medical Education (ACGME).

• Essential to **safe, high-value, patient-centered care**.

• Promotion of **health literacy and equity**
A Quick Experiment…
The SBP Challenge…

Abstract Concepts

‘Dry’ Traditional Lectures

Difficult to Assess

https://fridaynightattheer.com/
Methods

Pre-Simulation Questionnaire (86 PA students) → Simulation & Debrief → Post-Simulation Questionnaire
Results

**SYSTEMS THINKING**

- I seek everyone's view of the situation: Pre 4.06, Post 4.44
- I look beyond a specific event to determine the cause of a problem: Pre 4.07, Post 4.42
- I keep in mind that proposed changes can affect the whole system: Pre 4.28, Post 4.59
- I consider how multiple changes affect each other: Pre 3.95, Post 4.58
- I consider that the same action can have different effects over time, depending on the state of the system: Pre 4.02, Post 4.60
# Results

## Table 1. Key Concepts Learned

<table>
<thead>
<tr>
<th>Topic</th>
<th>% response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teamwork/Collaboration/Communication</td>
<td>41%</td>
</tr>
<tr>
<td>Innovation/&quot;Thinking Outside the Box&quot;</td>
<td>32%</td>
</tr>
<tr>
<td>Data Driven Decision Making</td>
<td>15%</td>
</tr>
<tr>
<td>Mental Models</td>
<td>14%</td>
</tr>
<tr>
<td>Awareness of Interconnectedness in Decision Making</td>
<td>12%</td>
</tr>
<tr>
<td>Ask Questions</td>
<td>10%</td>
</tr>
<tr>
<td>Awareness of System Complexity and Structure</td>
<td>9%</td>
</tr>
<tr>
<td>Flexibility/Tolerance of Ambiguity</td>
<td>2%</td>
</tr>
</tbody>
</table>

## Table 2. Influential Mental Models Identified

<table>
<thead>
<tr>
<th>Topic</th>
<th>% response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Constraints / “Rules”</td>
<td>61%</td>
</tr>
<tr>
<td>Lack of Innovation</td>
<td>24%</td>
</tr>
<tr>
<td>Lack of Inquiry and Data Gathering</td>
<td>20%</td>
</tr>
<tr>
<td>Perceived Cost and Impact of Decisions</td>
<td>11%</td>
</tr>
<tr>
<td>Lack of Collaboration / “Not My Job”</td>
<td>5%</td>
</tr>
</tbody>
</table>
Lessons Learned

• Tabletop Simulation…
  • allows learners to *experience* various SBP principles and examine the impact on patient care
  • increases awareness and understanding of SBP principles
  • illustrates the importance of collaboration, innovation, and data-driven decision making as it relates to delivering patient care in a complex system

• Challenges
  • Gameboard resources and optimal curricular timing

• Next Steps
  • Redesign event for an interprofessional education activity
  • Address pitfalls of health care centric thinking associated with SBP
Questions?
Resources


