Writing Scenarios and Learning Outcomes for Simulation-based Education

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Today we will…

• Collaborate with colleagues to develop a list of common problems facing simulation educators when designing and writing scenarios

• Explore some of the underpinning theories and approaches that can inform simulation scenario design

• Develop a shared toolkit for tackling problems in simulation scenario design
Our plan...

• What issues do we face as simulation educators when working with scenarios?
  • Table groups, approximately 10 minutes
  • Reporting back to larger group, approximately 10 minutes

• Working with Learning Objectives
  • Gabe, approximately 10 minutes

• Considerations for Scenario Writing
  • Vaughn, approximately 15 minutes

• Trying it out for ourselves
  • Table groups, approximately 15 minutes

• Sharing our learning and taking it away
  • Gary, approximately 10 minutes
What are our issues with Scenario and Course Design?

- In small groups, at your table, discuss what some of the common issues are that you experience with simulation scenario design. What issues come up? How do you solve them? What would you like to know more about?
Working with Learning Outcomes in Simulation Education

• Understand the scientific principles of respiratory failure.
• Demonstrate and perform safe routine tracheostomy care.
• Establish and maintain a safe environment for patients with dementia.
• State the definition of sepsis, severe sepsis and septic shock.
• Recognise and escalate acutely unwell adults through appropriate application of local systems.
• Demonstrate components of effective communication with colleagues, such as the SBAR handover tool.
Working with Learning Outcomes (Objectives)

• Lots of perspectives on learning outcomes, but they all basically boil down to…

* A statement of what the student will be able to do as a result of an educational intervention*

• LOs are traditionally more about what students can **DO** rather than what they **ARE** or **KNOW**

• Use action verb to describe behavior
Writing Outcomes

Traditionally, there are three components of outcomes/objectives:

- **Behavior** that student will exhibit
- **Conditions** under which students will perform
- Criterion or **standard** used to judge behavior

Ideally, you don’t want them to describe *content*

Think about the level of the course and the learner

Integrate aims (overarching goals) and outcomes (specifics)
Gagne’s Domains of Learning Outcomes

- Verbal Information—specific knowledge
- Intellectual skills—using information in higher-order processing
  - Learn concepts —groups of related things or ideas
  - Use rules —combinations of concepts
  - Solve problems —choose and correctly use rules to solve problems
- Cognitive strategy—learning skills
- Motor skills—physical activity
- Attitudes—personal feelings or beliefs that influence behavior
BLOOM’S TAXONOMY

EVALUATION
To judge the quality of something based on its adequacy, value, logic or use.

SYNTHESIS
To create something, to integrate ideas into a solution, to propose an action plan, to formulate a new classification scheme.

ANALYSIS
To identify the organization structure; to pull meaning from parts, relations and organizing principles.

APPLICATION
To apply knowledge to new situations, to solve problems.

COMPREHENSION
To understand, interpret, compare, contrast or explain.

KNOWLEDGE
To know specific facts, terms, concepts, principles or theories.

https://www.uaa.alaska.edu/studentaffairs/assessment/images/Bloom-s-Taxonomy.jpg
Simpson’s (1972) Hierarchy of Psychomotor Skills

- Origination
- Adaptation
- Complex Performance
- Mechanism
- Guided Response
- Mindset
- Perception

arranges, builds, combines, creates
alters, changes, revises
(adverbs for advanced performance)
assembles, builds, displays
copies, traces, reacts, responds
displays, explains, moves, shows
chooses, describes, detects

Simpson’s (1972) Hierarchy of Psychomotor Skills
More about Objectives

• Consider appropriate objectives in each domain
• Avoid trivial objectives—make sure they’re meaningful
• Consider learner characteristics; prereq. skills
• Use all three components (behavior, condition, standard) for planning
Considerations in Writing Scenarios
The Learners / Participants

• Who are the learner group.
• What is their level of training?
• What is their motivation?
• Learner Group mix (Inter-professional / Uni-professional)
The Event.

- Replication of real life?
- Specific Lessons learnt?
- Specific skill / Knowledge acquisition?
- Evidenced based?
Things to consider…
Instructional Design

- Where are we going? (What are the goals)
- How are we going to get there? (What type of exercise / equipment do we need to achieve this?)
- How will we know when we have arrived? (How will we evaluate this / what instructional / guidance materials should we use?)

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Teaching/Learning Activities</th>
<th>Assessment tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do people need to know (knowledge), need to demonstrate (skills, behaviours)</td>
<td>What will faculty do? What will learners do?</td>
<td>How do we know if LO has been reached? Identify tools for feedback. Observer sheets</td>
</tr>
</tbody>
</table>

Briggs (1977)
The Patient

- What is the ‘story’ or background of the situation to meet your objectives
- Could use a “real life” case if possible
- It must elicit the performance objectives
- Consider the setting - it must be appropriate to the participants
- It should have a discernible outcome or it might have multiple
- Remember the adjuncts – How to keep everyone engaged?
- Use a template or guide
What should be part of the Template?

- Objectives
- Debrief Notes
- Patient’s History & Physiology
- The Script and instructor or facilitator notes
- The Environment
  - Supplies
  - Equipment
  - Moulage
  - Props
- Patient Results – what ever the participants in a real situation would expect to see
  - Labs
  - X-Rays
  - Radiology Reports
  - Progress Notes
  - Nursing Notes
- Programming details
Things to consider for the Template

Choose a design that works for you!
- Laerdal and METI (CAE)
- Other

The Scenario Flow
- Describe the initial presentation - specify what is given & what the participant must ask for.
- This might also have a time guidance (ABCDE Assessment completed within 5mins).
  Consider how you can ‘trigger’ this if not being completed to ensure attainment of learning outcomes.
- Define transitions & how long each should take

Prepare your technician!
- Make monitoring realistic & tailored to what learner would be expected to use

Instructor / Facilitator Notes should include:
- Ideal management path (National Guidance)
- Potential complications path
- Potential errors path
Patient Name: Barbara Patel
Patient Age: 65 years old female on a general ward

Main Problem:
Medical: Difficulty in breathing, shortness of breath, and need for frequent suctioning.

Learning Goal:
1. Identify and assess factors contributing to respiratory distress and potential reversible causes.
2. Develop skills in ensuring the patient's airway is secure.
3. Prepare for spontaneous ventilation.
4. Perform suctioning techniques.

Narrative Description:
Barbara Patel, a 65-year-old female, was admitted to ICU following a CVA and aspiration pneumonia. She was transferred to ICU 5 days ago. She has been experiencing difficulty in breathing, shortness of breath, and frequent need for suctioning. The tube is secured with a securement device and the suction catheter is in place. The patient is on oxygen therapy and the ICU team is monitoring her condition closely.

Patient Development Form

Patient Name: Barbara Patel

Desired care: You are the nurse caring for this patient.

Name, age, and gender:

Chief complaint:

Medical history:

Past medical history:

Past surgical history:

Allergies:

Current medications:

Patient Development Form

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Current medications:
Trying it for yourself…

• In small groups, at your table, propose a new course (perhaps one that someone in the group is already planning…). What kinds of things might you want to consider? Who are your learners? What kind of learning outcomes might you want to propose? What scenarios might you write, and how would you go about writing them?
‘Take-Away’

• Think of it like a cooking recipe!
• Know your target learners/participants
• Understand what you want to achieve
• Outcomes to be set according to level
• Full story – all details/step by step
• Replication & Consistency
• Resources – Human & Material
• Technical support
• Orientation, Brief & Debrief