Testing Knowledge Assimilation, Accommodation, and Anticipation in Simulation with DML© Debriefing

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Background

- Assimilation—when knowledge fits previous schema.
- Accommodation—when knowledge opposes previous schema.
- Debriefing for Meaningful Learning© (DML)
  - Reflection-in-Action
  - Reflection-on-Action
  - Reflection-beyond-Action
- Assimilation and accommodation are the ultimate goals in a practice profession and the essence of reflection” (Dreifuerst, 2009, p. 111)

Purpose

- The purpose of this study is to investigate the stability of the psychometric properties of the Knowledge Assessment Scale (KAS) and Knowledge Application Scale (KAPS); objective instruments which measure student’s ability to assimilate, accommodate and anticipate following simulation with DML Debriefing.

Sample Test Item

<table>
<thead>
<tr>
<th>Scenario: Opioid Induced Respiratory Depression</th>
<th>Reflection-Beyond-Action: Anaphylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Assessment Scale (KAS)</td>
<td>Knowledge Application Scale (KAPS)</td>
</tr>
<tr>
<td>Which of the following medications should the nurse prepare to administer?</td>
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</tr>
<tr>
<td>a. Naloxone—CORRECT</td>
<td>a. Naloxone</td>
</tr>
<tr>
<td>b. Flumazenil</td>
<td>b. Flumazenil</td>
</tr>
<tr>
<td>c. Dantrolene</td>
<td>c. Dantrolene</td>
</tr>
<tr>
<td>d. Epinephrine—CORRECT</td>
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Blueprinted for General Use

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<td>Priority medication for administration (Accommodation)</td>
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Methods

- Initial Development and Testing:
  - KAS and KAPS developed for respiratory depression and anaphylaxis (Johnson, 2018, 2019).
  - 119 students, 1 Southwestern multi-campus university
  - Advanced Medical/Surgical Course
  - Demonstrated norm referenced and criterion referenced validity and moderate item stability reliability.
- Research Study 2: KAS and KAPS developed for Type 1 Diabetes Mellitus and Type 2 Diabetes Mellitus.
  - Ongoing—400+ students, 5 universities
  - Medical/Surgical Course
  - Data collection in progress
  - Item/Instrument sensitivity and mismatch
- Research Study 3: KAS and KAPS developed for sepsis and anaphylaxis.
  - Ongoing—40 students, 1 Midwestern university
  - Transitions course
  - Data collection in progress

Implications

- Assimilation and accommodation are linked to anticipation of future situations where similarities and differences exist
- DML facilitates assimilation, accommodation, anticipation
- Blueprint development makes this applicable to numerous simulations and populations of students
- Assists with curriculum sequencing within and between courses and semesters

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