Visual Thinking Strategies: A Mixed Method Study in Bachelor of Science Nursing Students

Meg Moorman, PhD, RN, WHNP-BC
Desiree Hensel, PhD, RN, PCNS-BC, CNE
IU School of Nursing

mmmoorman@iu.edu & dehensel@iu.edu
Objectives and Disclosures

• The learner will:
  • become familiar with the use of VTS in nursing education.
  • be able to discuss the outcomes of this mixed methods VTS study.

• Presenters Meg Moorman & Desiree Hensel from Indiana University School of Nursing have no conflicts of interest to declare.

• This study was supported by the IU School of Nursing Diane and Richard Billings Award.
What is Visual Thinking Strategies?

- Visual Thinking Strategies (VTS) is a teaching method that uses art to engage participants in conversations using visual evidence for what they see.
- Created by Housen and Yenawine (2002).
- Facilitators trained through VTS organization
- Studied in primary education
Questions Used in VTS

1. What is going on in this picture?
2. What are you seeing that makes you say that?
3. What more can you find?

Creation of Adam by Michelangelo

Public domain
Improves Observational Skills

- Must provide visual evidence for observations
- Requires details; No assumptions
- Scaffold off of others’ comments
- Helps students
  - Notice more
  - Consider multiple contexts and meanings
- Ultimately leads to new way of thinking
Studies in Health Sciences

• Teach observational and diagnostic skills (Jasani & Saks, 2013; Klugman et al., 2011; Naghshineh et al., 2008).

• Teach teamwork and interprofessional communication (Klugman et al., 2011; Reilly, Ring, & Duke, 2005).

• Helps students feel safe to engage in classroom discussions and teaches them to see subject matters differently (Moorman, 2015).
Purpose

• The purpose of this pilot project was to explore learning outcomes from the use of VTS with entry-level BSN students.


• Research Questions:
  • “What transferable skills do students gain from VTS?”
  • “Does VTS affect observational skills?”
Method

• Pilot study with a mixed-method, quasi-experimental design.
• Conducted on two campuses of large, public university in the Midwestern United States.
• The convenience sample consisted of 153 BSN students enrolled in an entry level healthy population course.
Intervention

• VTS Group (n=55)
  • 1 hour VTS session with trained VTS facilitator in classroom at both sites
  • Same 3 pieces of art shown on screen to participants

• Control Group (n=93)
  • given the opportunity to learn VTS in a web course (http://qsen.org/courses/learning-modules/module-eleven/#part4)
Quantitative Data

• Given a class assignment 2 to 5 weeks after VTS session
• Asked to describe 5 normal newborn conditions being as descriptive as they could:
  • Mongolian spots
  • Epstein pearls
  • Milia
  • Newborn rash
  • Facial bruising (not used for analysis)
• Word count obtained with Microsoft word
• Data analyzed with SPSS
### Campus 1 (2 weeks)

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>word1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>30</td>
<td>61.1</td>
<td>28.02</td>
<td>0.057*</td>
</tr>
<tr>
<td>Experiment</td>
<td>30</td>
<td>80.13</td>
<td>45.82</td>
<td></td>
</tr>
<tr>
<td>word2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>30</td>
<td>59.2</td>
<td>25.32</td>
<td>0.057*</td>
</tr>
<tr>
<td>Experiment</td>
<td>30</td>
<td>76.5</td>
<td>41.76</td>
<td></td>
</tr>
<tr>
<td>word4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>30</td>
<td>48.43</td>
<td>22.11</td>
<td>0.059*</td>
</tr>
<tr>
<td>Experiment</td>
<td>30</td>
<td>64.03</td>
<td>38.36</td>
<td></td>
</tr>
<tr>
<td>word5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>30</td>
<td>46.23</td>
<td>22.42</td>
<td>0.299</td>
</tr>
<tr>
<td>Experiment</td>
<td>30</td>
<td>54.4</td>
<td>36.27</td>
<td></td>
</tr>
</tbody>
</table>
## Campus 2 (5 weeks)

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>63</td>
<td>73.20</td>
<td>32.86</td>
<td>0.911</td>
</tr>
<tr>
<td>Experiment</td>
<td>25</td>
<td>72.36</td>
<td>29.05</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>63</td>
<td>67.66</td>
<td>33.35</td>
<td>0.563</td>
</tr>
<tr>
<td>Experiment</td>
<td>25</td>
<td>63.24</td>
<td>29.22</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>63</td>
<td>68.26</td>
<td>38.48</td>
<td>0.423</td>
</tr>
<tr>
<td>Experiment</td>
<td>25</td>
<td>60.56</td>
<td>45.20</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>63</td>
<td>56.31</td>
<td>29.49</td>
<td>0.263</td>
</tr>
<tr>
<td>Experiment</td>
<td>25</td>
<td>49.12</td>
<td>19.31</td>
<td></td>
</tr>
</tbody>
</table>
Qualitative Data

- Experimental group answered question:
  - “How might you use Visual Thinking Strategies in nursing and caring for patients?”
- Data analyzed using a qualitative descriptive approach and Dedoose Version 6.2.17 software.
- Used National Research Council (2012) transferable knowledge and skill as framework.
<table>
<thead>
<tr>
<th>Skill</th>
<th>Count</th>
<th>Supporting Participant Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical thinking</td>
<td>16</td>
<td>It allows you to think critically and look at the patient as a whole.</td>
</tr>
<tr>
<td>Interpretation</td>
<td>10</td>
<td>Do not assume things about your patient by what you see. Look at whole picture, whole story of the patient.</td>
</tr>
<tr>
<td>Analysis</td>
<td>6</td>
<td>It can also help analyze every aspect of the situation, just as nurses analyze every aspect of a patient during assessments.</td>
</tr>
<tr>
<td>Using evidence</td>
<td>12</td>
<td>I can use it when presenting a finding a providing detailed evidence to support my findings.</td>
</tr>
<tr>
<td>Oral and written</td>
<td>14</td>
<td>You have to be very descriptive when doing report. This helps you do that.</td>
</tr>
<tr>
<td>communication</td>
<td></td>
<td>Active listening is important for meaningful conversation with the patient (being present). Restating observations of another affirms that you understand what they are saying and want to make sure you're correct in your rephrasing.</td>
</tr>
</tbody>
</table>
Other Transferable Skills

<table>
<thead>
<tr>
<th>Skill</th>
<th>Count</th>
<th>Supporting Participant Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observational</td>
<td>19</td>
<td>We can use this to assess our patients more thoroughly in order to see things about our patients that we might have missed.</td>
</tr>
<tr>
<td>Intrapersonal (Openness)</td>
<td>14</td>
<td>I could use this in nursing when exploring every option and understanding that there may be more than one right answer. Others may look at somethings from a different point of view.</td>
</tr>
<tr>
<td>Interpersonal (Teamwork and collaboration)</td>
<td>29</td>
<td>being able to consider all sides and hear others opinions/ideas and work as a team... able to learn a lot by hearing others thought processes and how they come to same conclusion.</td>
</tr>
</tbody>
</table>
Using Expanded Definition of Critical Thinking

Critical Thinking

Analysis
Observational
Using Evidence
Active Listening

Teamwork and Collaboration
Openness

Oral and Written Communication
Conclusions

- VTS is a unique teaching strategy that holds the potential to help nursing students develop a broad range of skills.
- Studies are needed on optimal exposure needed to develop observational, communication, and critical thinking skills.
- Research is also needed on how skills gained in VTS translate to practice.
References


• Jasani, S. K., & Saks, N. S. (2013). Utilizing visual art to enhance the clinical observation skills of medical students. *Medical Teacher, 35*(7), e1327-1331.11.


References

