Visual Thinking Strategies
using art to support the development of critical thinking in pharmacy technicians

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Pharmacy

Our Mission

Supporting the patient medication pathway to deliver the best outcomes.
Background

• Training technicians for extended roles
  – Near patient supply
  – Required more autonomous problem solving, prioritisation and decision making
• Identified gaps in critical thinking
  – Investigating learning strategies to address this
• Auckland SoP planned to utilise VTS within new curriculum
• Trained as facilitator with Lynne and Trudi
What is Visual Thinking Strategies?

- Arts based method of group discussion
- Helps people look at art and make sense of it
- Neutral, safe, low stakes environment
- Benefits in development of critical thinking, confidence and team working
Aim

- To evaluate changes in the observational and critical thinking competencies of pharmacy technicians participating in a series of VTS sessions and their ability to apply these skills to key daily work tasks.
Method

• Pilot prospective non-randomised exploratory study
• Pre and post intervention assessment
• All pharmacy technicians working at Auckland Hospital (New Zealand) invited to participate
  – Tertiary teaching hospital of 1000 beds
  – Approximately 30 technicians
VTS intervention

• Structured facilitation technique
  – uses paraphrasing, pointing and specific questions
  1. What is going on in this image?
  2. What do you see that makes you say that?
  3. What more can we find?
Writing assessments

Liberation
Ben Shahn, 1945

1. What is going on in this image?
2. What do you see that makes you say that?
3. What more can we find?
Transference of learning?

- 12 x monthly sessions
- 3 art images per session
Method

- Technicians surveyed on views on VTS
- Writing samples coded
  - Coding discussed and agreed
  - Codes cleaned
  - Entered into nVivo
Results

• 13 participant with pre and post intervention writing samples
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Change in frequency of coding nodes

<table>
<thead>
<tr>
<th>Coding nodes</th>
<th>Art</th>
<th>Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple observation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detailed observation</td>
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<tr>
<td>Supported inference</td>
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<tr>
<td>Unsupported inference</td>
<td>-2</td>
<td></td>
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<tr>
<td>Action</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Critical analysis</td>
<td></td>
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</tbody>
</table>

Critical analysis
Change in the frequency of coding

Simple observation
Detailed observation
Supported inference
Unsupported inference
Action
Critical analysis
Participant x – pre-intervention

• ‘the sky appears dark on right hand side. Lots of different colours + patterns on building. Reminds me of an earthquake or after a storm’

• Chart has been screened by Phcist + allergies filled out. Patient suffers from skin condition (eczema) + infection. New admission or recharting. Phenytoin 50mg is needed to be dispensed -> tabs.
Participant x – post-intervention

• ‘There are lot of different colours + designs on the wall of the house. Cannot explain to what that means. Maybe just to make the picture more interesting’

• The chart has not been seen by the wd phcist as it has not been signed. There are several request stickers on the chart 3 of them dated as 24th which might have already been dispensed – should check in history
Feedback from technicians

- Generally positive
- Challenges with attending sessions
- Uncertainty over relevance to practice

- I do check scripts better
- Looking at prescriptions in more detail, therefore not missing important information
- Listening to others opinion, widening my views
Discussion

• Trend in development of observation and critical thinking

• Similar patterns see in art and Rx
  – indicating a transference of skills into workplace relevant activities

• Feedback indicates value but need to link more explicitly with workplace activities
Limitations

**Intervention and study design**
- Small exploratory group
- Challenges of operational rostering

**Coding and analysis**
- English not first language for most of participants
- Inferring critical thinking from writing
- Does writing reflect real life practice?
Conclusion

- VTS can support the development of observational and critical thinking competencies in hospital pharmacy technicians
Next steps

• Inclusion of prescriptions in oral discussion sessions

• Larger study with wider range of staff and locations
Acknowledgements
If you are interested in experiencing VTS for yourself and thinking more about its uses, please come to our workshop:

Enhancing patient-centred competencies in pharmacy professionals using Visual Thinking Strategies (VTS)

This room
Pharmacy

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Change in number of coding points by participant

Change in the number of coding points for all writing samples

Participant

Art  Prescription  Overall
Pharmacy

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Writing assessment image
Feedback from managers

- Mixed response with some seeing changes and benefit in their staff and others not
- Managing rosters to release techs to attend the main issues raised

Learning a new way of learning. Has increased confidence to speak up and give their own opinions

My techs are a lot less shy - more willing to share with colleagues
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Method

Pre intervention assessment
- Asked to write about art image and prescription

Intervention
- 12 x monthly VTS image discussion sessions at regular CE from 2016-17

Post intervention assessment
- Repeat writing samples
- Online survey - techs and managers

Data analysis
- Qualitative analysis of writing samples and surveys
Change in frequency of coding nodes

- Conditional language
- Simple observation
- Detailed observation
- Supported inference
- Unsupported inference
- Action
- Critical analysis

Coding nodes

Art
Prescription

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Benefits of VTS

• Develops range of skills
  – critical thinking
  – observation
  – flexible and rigorous thinking
  – collaborative teamworking
  – willingness to participate in group discussion
  – communication
  – language
  – listening skills

• Develops confidence, self respect

• Supports a multiplicity of views (flexible thinking)

• Encourages empathy and respect for views of others

• Increases tolerance of ambiguity

• Encourages the drawing of informed conclusions and inferences

• Applicable across many disciplines
Observations

- ‘There’s a building in the picture which is leaning towards the left’
- ‘The signature for the phenytoin is different to previous doctor’
Unsupported inference

• ‘It seems to me that children are **playing late afternoon**’

• ‘That patient is having **issues in gastrointestinal areas** or I’ll say that is the part of his body they are treating’
Supported inference

• ‘It have the impression that possibly the taller one of the blond girls is pushing them around, the way the legs are positioned’

• ‘The nurse as requested tab. I say this because I can see the another sticker that’s states 50mg’