

✘ The image part with relationship ID rld2 was not found in the file.

# Issues of Data Reduction and Analysis in a Video-based Ethnography



Connie Cirkony, Ph.D. Candidate, Deakin University

✘ The image part with relationship ID rld2 was not found in the file.

## Research Focus:

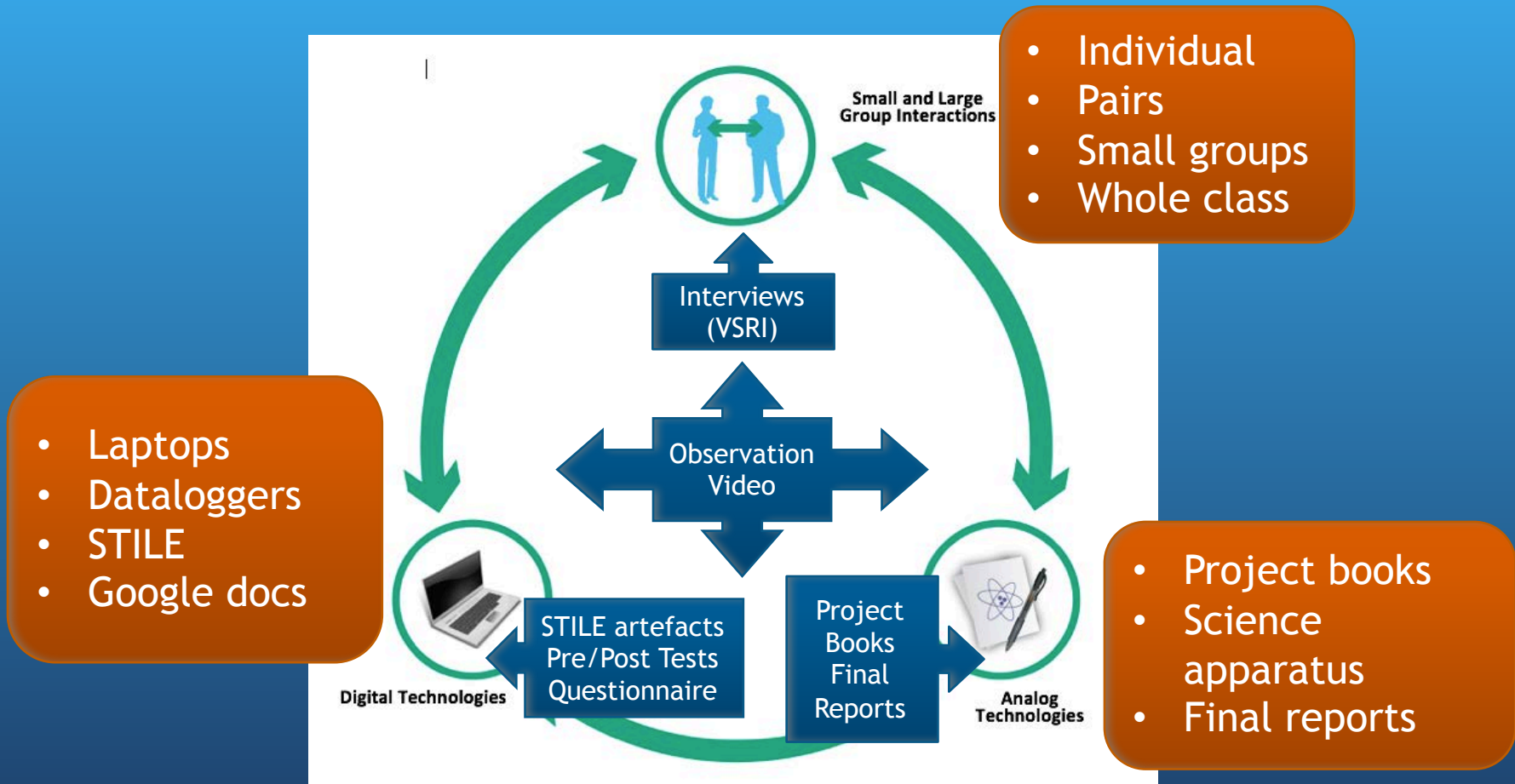
To explore student learning through inquiry-based student generated representation construction in a Blended Learning Environment

- Methodology
- Data Set & Examples
- Issues & Decisions
- Next Steps



✘ The image part with relationship ID rld2 was not found in the file.

# Methodology

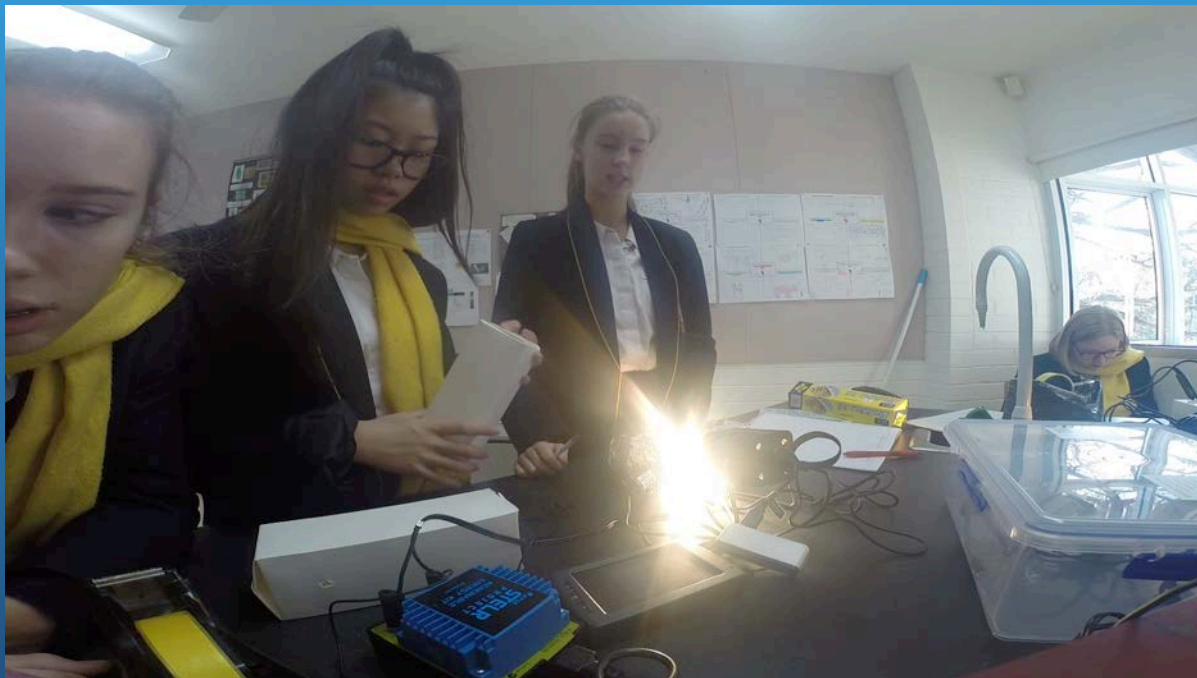


 The image part with relationship ID rld2 was not found in the file.

What does this data set *look* like?

✘ The image part with relationship ID rld2 was not found in the file.

# Video Data



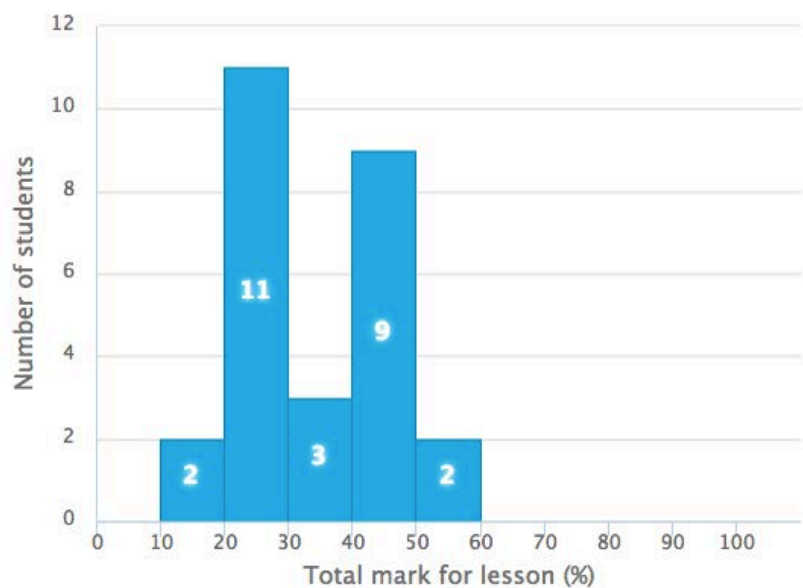
✘ The image part with relationship ID rld2 was not found in the file.

# Video-Stimulated Recall Interview

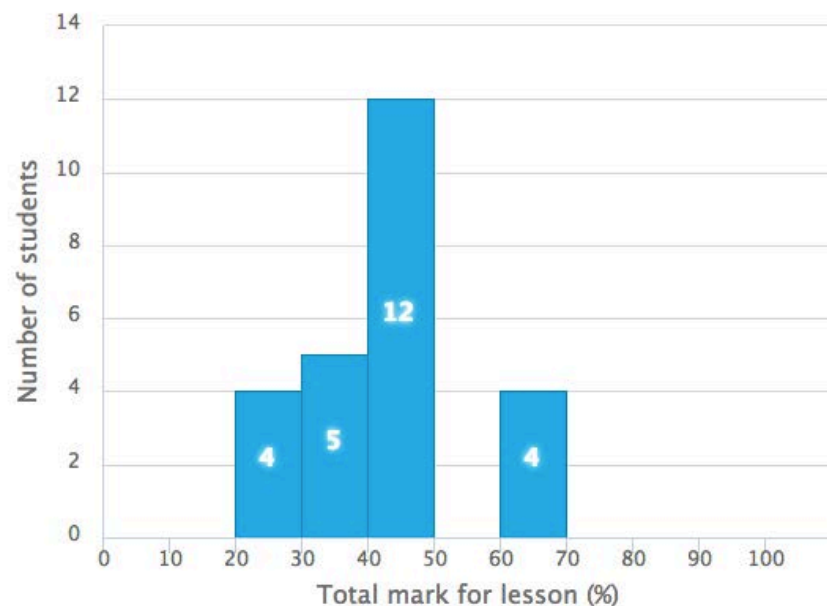


✘ The image part with relationship ID rld2 was not found in the file.

# Pre- and Post- tests: Results Distribution



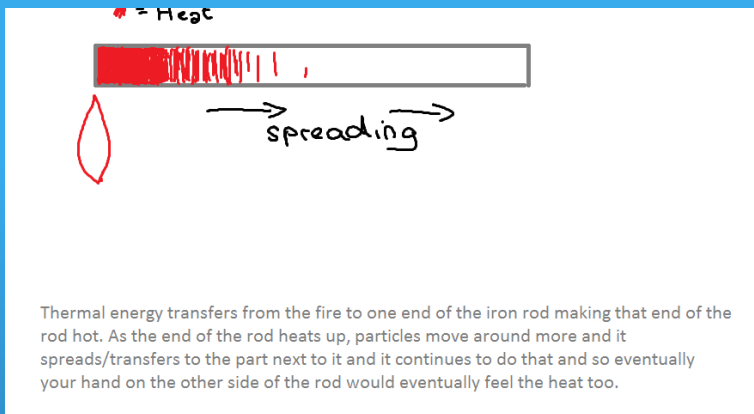
Pre-test results



Post-test results

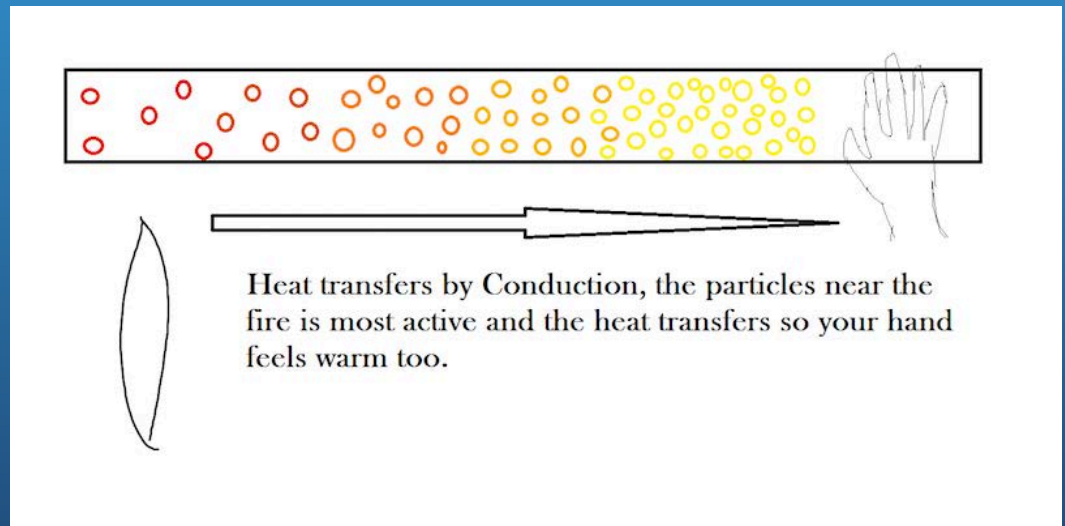


✘ The image part with relationship ID rld2 was not found in the file.



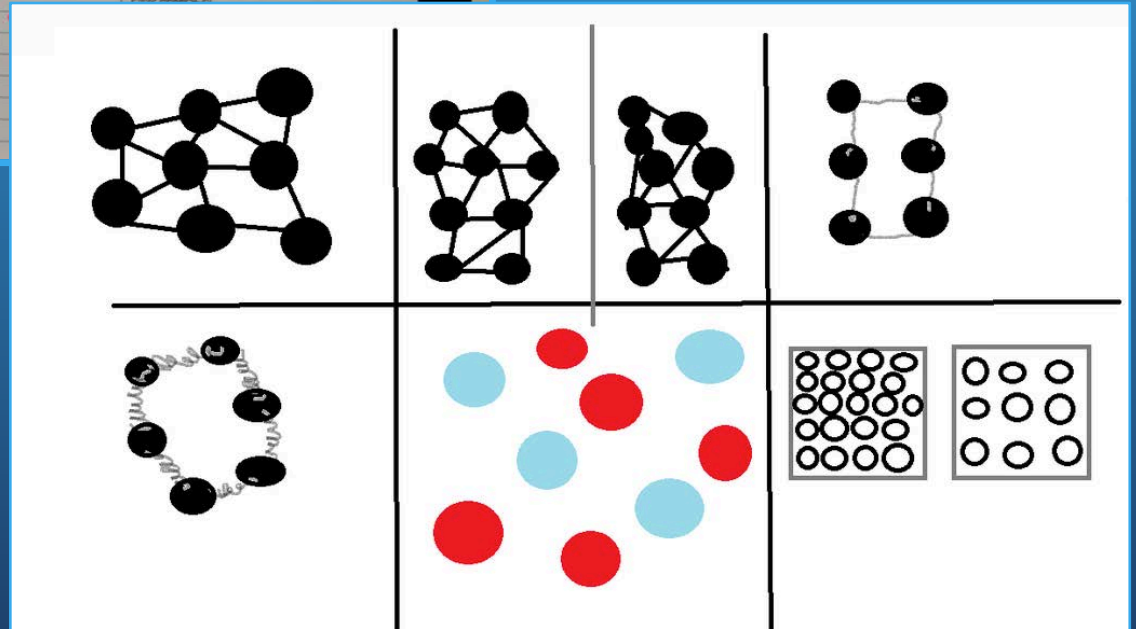
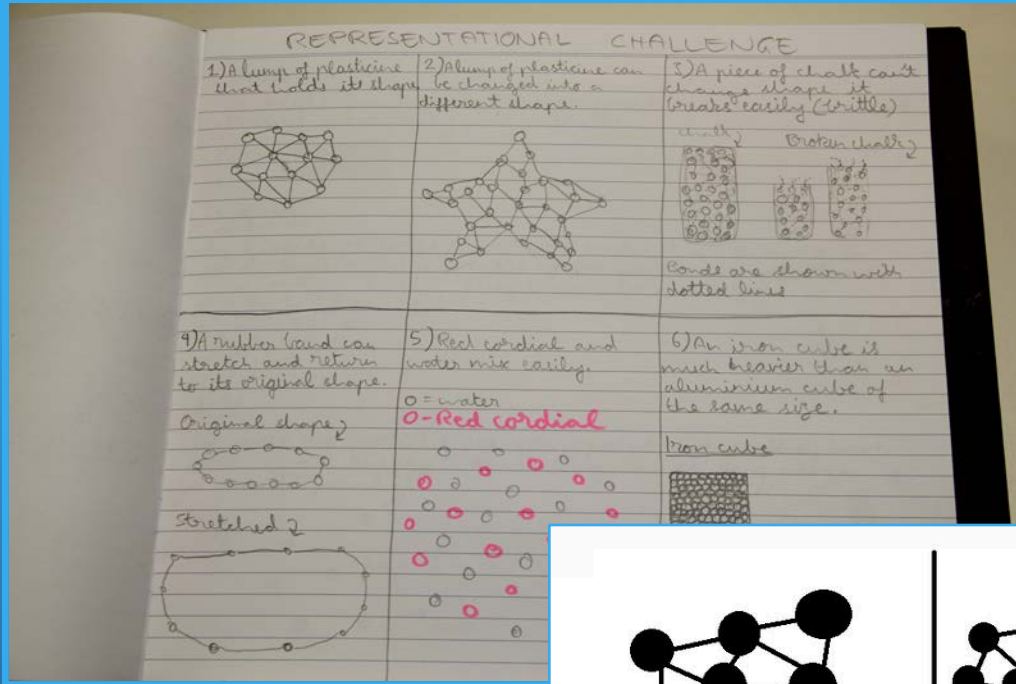
**Pre-test:** “Like the... from the fire, going to your hand, like its slowly spreading, like the fire is heating up the rod, which is slowly heating as well. And the closer part to the fire is the hottest part because that’s where the fire is.”

**Post-test:** “So like, um the particles near the fire is more active and moves faster because it is hotter and it bumps into the next particles which is also gets hotter and that is conduction. And so it continues. And when it gets to your hand it feels a bit warm because of the heat energy spreads.”





✘ The image part with relationship ID rld2 was not found in the file.



 The image part with relationship ID rld2 was not found in the file.

# Final Report

## SUSTAINABLE HOUSE INQUIRY

*Science Report*



Year 9 MYP Science



 The image part with relationship ID rld2 was not found in the file.

# Data Set

Data Instrument	Amount	Total
<b>Video Data</b>	7 lessons of 2 groups each lesson	414 GB [11 hours 30 minutes]
<b>Interviews</b>	16 student-groups, 10 individual students, and 2 teacher	132 MB [237 minutes for students, 39 minutes for the teacher]
<b>STILE (including Pre and Post Tests)</b>	Students' individual and group answers (including digital representations) from Modules 1-8, 12.	89.7 MB
<b>Project Books</b>	All 27 Project Books	1.32 GB
<b>Final Reports</b>	All 7 Group Reports	12.1 MB
<b>Online Questionnaires</b>	26 of 27 responses (15-minute survey of 15 questions)	3.4 MB
<b>TOTAL</b>		<b>415.3 GB</b>

 The image part with relationship ID rld2 was not found in the file.

# Issues: What do I have? How does the data link?

## Decisions:

- Organize my data set
- Develop a narrative of the Energy & Sustainable Housing Unit
- Draft Lesson Sequences
- Make the data visible (digital to analog)
- Construct a data book

### Lesson Sequence: Conduction (Part 2)

Wednesday, April 13, 2016  
8:55 am - 10:10 am


**Synopsis:** Students reviewed concepts on conduction and energy transfer in conductors and insulators.

1. Greetings and review of last week: conduction; how heat/energy transfers in a conductors vs. insulator (role-play)
2. Administrative Tasks: Roll call and collection of Field Trip forms.

**Summary:** Students presented their previously constructed role-play, demonstrating to the teacher and class how heat transfers in a conductor verses an insulator. As a class, they viewed the second online video on Heat Transfer and completed the online questions and drawings.. (**Researcher present, Video capture**)

#### Resources

For video see April 13 2016 Folder, total running time: 49:48 minutes; see also Group 2 Video.  
Interview: April 19 Group 1 Conduction BH BN TB  
Artifacts: Online Module 6 and Project Books

Time	Teacher Activity	Student Activity	Technology	Photographs
9:05 am	<b>Outline the lesson plan and performed administrative tasks</b>  @5:00 Teacher outlined the day's lesson plan and what will take place for the next 10 minutes: She took the roll call and collected Field Trip Forms while the students completed their diagrams in their Project Books. @5:30 Teacher began the roll call by calling out students' names, students answer	<b>Students worked on their assignment during this process.</b>  @5:00 Students have their Projects Books open and worked on them individually within their groups. They sometimes worked in silence, they sometimes talk off topic, they sometimes ask questions about their drawings. @7:42 Bella got up to ask the teacher a question, then	Learning Journal	Activity 6.1 Representing Conduction  

# Issues: What do I focus on (or begin with)?

## Decisions:

- Identify Case
- Add examples from the data set to support case
- Align Strategy with RQ (coordinating the empirical evidence from the case with the theoretical perspectives)
- Develop a strategy for constructing an argument\*

### RQ, Empirical Evidence and Analysis

RQ	Empirical/Examples	Analysis
<b>How are students learning in a BLE science classroom integrating RC pedagogy?</b>	<b>A. Learning</b> Define quality learning (formal/informal reasoning, RC perspective, MRC, transfer between modes)  Show examples of quality of learning with RC in each <u>DCog</u> System (explore/construct/justify; MRC: depiction, symbolic, syntactic, semantic, reflective)  Show examples of quality of language as a tool for reasoning ( <u>disputational</u> , cumulative, exploratory).  Compare groups, individuals  Role/design of task.	<b>Reasoning through RC framework:</b> explore, construct, justify (THPW, 2013)  <b>Reasoning through scientific process:</b> 1 Making a claim. 2 Checking the evidence. 3 Refining the claim. 4 Coordinating. 5 Publicly justifying and communicating. (THPW, 2013)  <b>MRC framework:</b> depiction, symbolic, syntactic, semantic, reflective (Kozma & Russell)  <b>Reasoning through language framework:</b> <u>disputational</u> , cumulative, exploratory (Mercer)

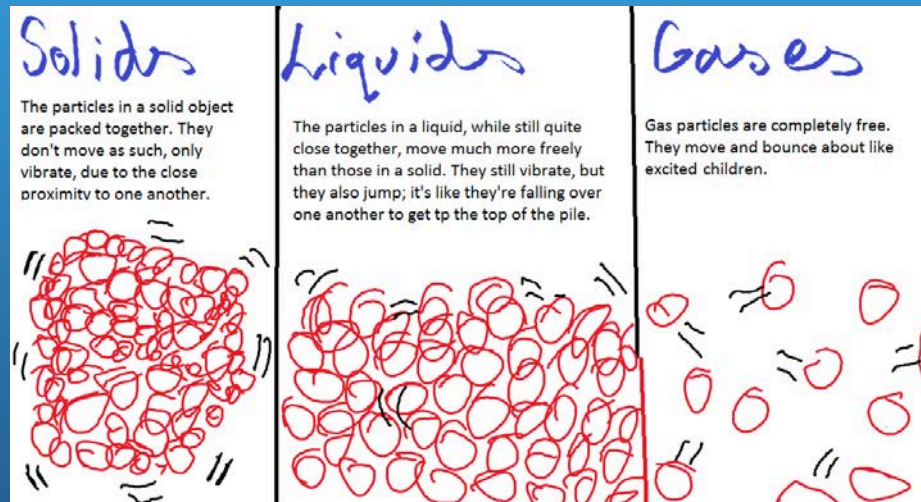
# Next Steps

- Develop Framework(s) for Coding: quality of representations, quality of dialogue, student reasoning
- Integrate with Distributed Cognition Framework
- Apply integrated framework to analysis to identify key examples in data set (iterative)
- Do a more fine-grained analysis on key examples, likely requiring revisions to or re-design of framework, while concurrently constructing possible claims. Connect to literature. Repeat!
- Take framework and test again a second case study for validation.....



✘ The image part with relationship ID rld2 was not found in the file.

# Discussion....



Connie Cirkony: [ccirkony@deakin.edu.au](mailto:ccirkony@deakin.edu.au)