

# Week 2 Workshop

### Swinburne

# Workshop 2 - Learning Activities

- 1. Finding relevant articles
- 2. Identifying themes
- 3. Setting up a literature review plan
- 4. Reviewing a paper
- 5. The Affinity Process

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Finding & Reviewing Articles

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# **ACTIVITY 1 – FINDING RELEVANT ARTICLES**

### **Individual tasks:**

- 1. Select appropriate keywords related to your chosen topic
- 2. Search a scholarly database to locate relevant articles
  - Use filters and search criteria to identify appropriate articles
- 3. Read the abstracts to find connections between the papers
- 4. General discussion, plus Q&A

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#### ACTIVITY 2 – IDENTIFYING THEMES & CONNECTIONS

#### Individual tasks:

- 1. Select about 3-5 key articles to review
- 2. Identify emerging themes and connections across the sections of the papers
- 3. Examine links to topic & relevant body of knowledge
- 4. Examine the methods applied in the articles
- 5. Identify prominent authors / researchers and seminal papers

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### ACTIVITY 3 - SETTING UP A LIT REVIEW PLAN

#### Individual tasks:

- 1. Make a comparison table of articles found so far
  - Cross-check the focus, aim or objectives of papers
  - Cross-check the methods applied
  - Identify common keywords, themes and categories
- 2. Build a preliminary structure for your review paper
  - How would you present the themes, debates, etc.?
  - Which one comes first, and then next?
- 3. Explain your plan of attack (Reflection)

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### ACTIVITY 4 – REVIEWING A PAPER

### **Materials:**

- Pen, Pencil or Highlighter (Physical or Digital)
- One Journal / Conference Research paper

### Individual tasks:

- 1. Read research paper.
- 2. Highlight key aspects of the paper

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The Affinity Process

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# What do you Look for when reviewing a paper?

- 1. The problem and context studied
- 2. Research aims / questions / objectives
- 3. Assumptions
- 4. Their review how did they build on other people's ideas?
- 5. Key researchers who else has studied this problem?
- 6. Writing style how did they communicate their research?
- 7. Related articles are there other articles I can consult?

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# ACTIVITY 5 – ABSTRACTION (STAGE ONE)

#### A. Analysis of individual articles

Year of Publication:	
Title: Name of Journal/Book/Proceeding: Page numbers:	
Phenomenon/context:	
Aims/Objectives/Questions/hypotheses:	
Methodology/Methods/Techniques: (data generation, data analysis, reporting, discussion)	
Findings/Results:	
Key arguments/Challenges/Conclusions:	
Recommendations:	
Others (e.g. Literature to follow up on):	

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Abstraction —	The Affinity Process (Stage 1)	
Author(s): (ear of Publication: Title: Name of Journal/Book/Proceeding:	Coupon Corrosion Test, Salt Chemistry and Post Mortem Analysis (from Final Test and Evaluation Results from the Solar Two Project) Sandia Labs release	
Page numbers: Phenomenon/context:		
Aims/Objectives/Questions/hypotheses:	Comparison of facility material with coupon corrosion tests from test chambers in salt loop	_
Methodology/Methods/Techniques: data generation, data analysis, reporting, discussion)	Corrosion dip test 3 different types of alloys tested: carbon steels, stainless steels and molybdenum alloys Main alloys of interest: SS304, 316 & 347, and A36 2 year exposure time (> 30,000 hours) for the storage tanks, ~1500 for the reciever.	
Findings/Results:		_
Key arguments/Challenges/Conclusions:	Contains information on the design of the coupons and test tree Materials performed as expected, except the molybdenum alloys, which corrosion more than expected. \$\$304, 316 and 347 all performed well over the lifetime of the plant, no intergranular attack seen. Alloy silicone content has a large effect on corrosion rates when chloride impurities are present (see Goods) Corrosion was bu uniform surface oxidisation.	
Recommendations:	As long as carbon and stainless steels are kept within their temperature bounds, then corrosion does not reall limit part life.  Any SS alloy exposed to water requires at least 9% chromium in order to resist aqueous SCC from dissolved chloride in the water. This usually means 347SS.	/
Others (e.g. Literature to follow up on):	,	

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Abstraction — T	he Affinity Process (Stage 1)	
Author(s): Year of Publication: Title: Name of Journal/Book/Proceeding: Page numbers: Phenomenon/context:	Corrosion Behaviour of Eutectic Molten Salt solution on Stainless Steel 316L	
Aims/Objectives/Questions/hypotheses:	Corrosion rates on SS 316L of 15 different combinations of NaCl, KNO3, LiNO3 & Nat	NO <sub>3</sub>
Methodology/Methods/Techniques: (data generation, data analysis, reporting, discussion)	Corrosion dip test 24 hour total time Room temperature Nitrogen blanket	
Findings/Results:	Different salt mixtures had significantly different corrosion rates Mixtures with highest chloride ratios had worse corrosion Intergranular corrosion was the method of material attack	
Key arguments/Challenges/Conclusions:	Has a literature review	
Recommendations:	Chloride salts are bad for corrosion NaNO <sub>3</sub> & KNO <sub>3</sub> are better, resulting in less general and pitting corrosion	
Others (e.g. Literature to follow up on):		

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Abstraction –	The Affinity Process (Stage 1)	
A. Analysis of individual articles		
Author(s): Year of Publication: Title: Name of Journal/Book/Proceeding: Page numbers:	Comparison of Corrosion Performance of Grade 316 and Grade 347H Stainless Steels in Molten Nitrate Sa	alt
Phenomenon/context:		
Aims/Objectives/Questions/hypotheses:	Corrosion rates in 60/40 nitrate salt vs 316 and 347H stainless steel	
Methodology/Methods/Techniques: (data generation, data analysis, reporting, discussion)	Corrosion dip test with atmospheric air sparging Test at 600deg Sample tree in filled test vessel inside a lab furnace 3000 hour total experiment time, salt and sample tests each 1000 hours No oxygen blanket Rates determined by descaled weight loss and linear data fitting	
Findings/Results:	3000 hour metal loss: $4.4 - 4.8 \mu m$ Extrapolated annual loss: $8.4 - 8.8 \mu m$ No intergranular attack, even with sensitized structure and chloride impurities (0.1 wt%) present	
Key arguments/Challenges/Conclusions:		
Recommendations:	Both stainless steel alloys performed well under testing conditions No benefit in choosing stabilized stainless steel vs non-stabilized stainless steel	
Others (e.g. Literature to follow up on):	Follow up on references 1 to 4	
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# ACTIVITY 5 - SYNTHESIS (STAGE TWO)

### **Individual tasks:**

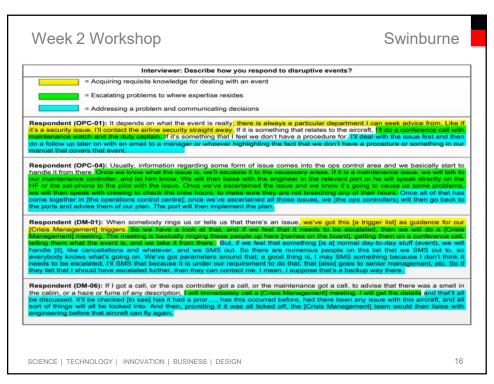
- 1. Group related ideas together
- 2. Search for themes, agreements and disagreements.
- 3. Decide which themes to explore further
- 4. Make a note of them in your workbook

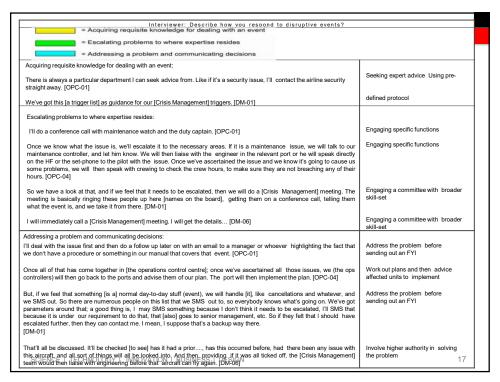
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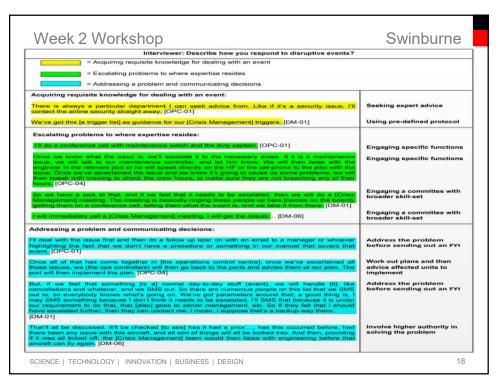
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# Swinburne Week 2 Workshop Synthesis – The Affinity Process (Stage 2) Interviewer: Describe how you respond to disruptive events? = Escalating problems to where expertise resides = Addressing a problem and communicating decisions Respondent (OPC-01): It depends on what the event is really; there is always a particular department I can seek advice from. Like if it's a security issue, I'll contact the airline security straight away. If it is something that relates to the aircraft, I'll do a conference call with maintenance watch and the duty captain. If it's something that I feel we don't have a procedure for, I'll deal with the issue first and then do a follow up later on with an email to a manager or whoever highlighting the fact that we don't have a procedure or something in our manual that Respondent (OPC-04): Usually, information regarding some form of issue comes into the ops control area and we basically start to handle it from there. Once we know what the issue is, we'll escalate it to the necessary areas. If it is a maintenance issue, we will talk to our maintenance controller, and let him know. We will then liaise with the engineer in the relevant port or he will speak directly on the HF or the setphone to the pilot with the issue. Once we've ascertained the issue and we know it's going to cause us some problems, we will then speak with crewing to check the crew hours, to make sure they are not breaching any of their hours. Once all of that has come together in [the operations control centre]; once we've ascertained all those issues, we (the ops controllers) will then go back to the ports and advise them of our plan. The port will then implement the plan. Respondent (DM-01): When somebody rings us or tells us that there's an issue, we've got this [a trigger list] as guidance for our [Crisis Respondent (bit-01): When somebody migs us or tells us that there's an issue, we've got this is digger his as guidance for our Chiss Management triggers. So we have a look at that, and if we feel that it needs to be escalated, then we will do a [Criss Management] meeting. The meeting is basically ringing these people up here [names on the board], getting them on a conference call, telling them what the event is, and we take it from there. But, if we feel that something [is a] normal day-to-day stuff (event), we will handle [ii], the cancellations and whatever, and we SMS out So there are numerous people on this list that we SMS out to, so everybody knows what's going on. We've got parameters around that; a good thing is, I may SMS something because I don't think it needs to be escalated, I'll SMS that because it is under our requirement to do that, that [also] goes to senior management, etc. So if they felt that I should have escalated further, then they can contact me. I mean, I suppose that's a backup way there. Respondent (DM-06): If I got a call, or the ops controller got a call, or the maintenance got a call, to advise that there was a smell in the cabin, or a haze or fume of any description, I will immediately call a [Crisis Management] meeting. I will get the details and that'll all be discussed. It'll be checked [to see] has it had a prior...., has this occurred before, had there been any issue with this aircraft, and all sort of things will all be looked into. And then, providing if it was all ticked off, the [Crisis Management] team would then liaise with engineering before

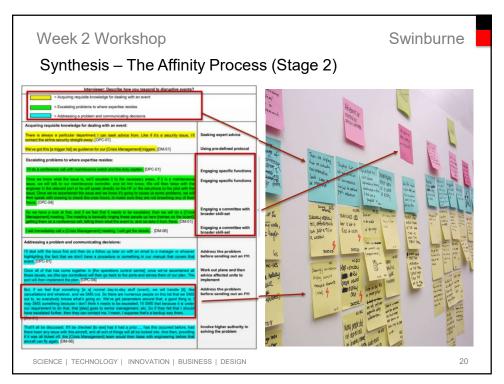
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#### WRAP-UP

By the end of this workshop:

- 1. You should have identified some good articles that relate to your topic of interest
- 2. You should have identified common themes, debates, etc., to write about
- 3. You should have started a draft structure for your paper with the themes identified in your abstract reviews
- 4. You should begin to collate and synthesize relevant information from the articles you have identified

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#### **NEXT WEEK**

In the Workshop:

- 1. We will check your progress in critiquing research articles
- 2. We will check your progress in collating and synthesizing large volume of information.
- 3. You will begin to learn how to communicate research findings through writing.

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