Learning to Reflect on Challenging Experiences: An AI Mirroring Approach

Simon Buckingham Shum[1] & Cherie Lucas[2]

[1] Connected Intelligence Centre
[2] School of Pharmacy, Graduate School of Health
   University of Technology Sydney
   @sbuckshum @LucasReflection

Proposition:

a distinctive role that analytics and AI can play is to hold up a 'mirror' to online writers, to make them more aware of, and reflective about, their reactions to challenging people and experiences.

On the one hand, we have text analytics to detect the presence (absence!) of **factual claims** and **reasoning/ argumentation**

See research on
- *automated writing evaluation*
- *argument mining*

On the one hand, we have text analytics to detect the presence (absence!) of **factual claims** and **reasoning/ argumentation**

See research on

- *automated writing evaluation*
- *argument mining*

Analytical Report | **Feedback** | **Examples**

The analytical report highlights salient rhetorical moves AcaWriter identified in your essay for reflection. For more specific feedback, go to the Feedback tab.

Rhetorical Moves

...ed finding
...to ideas

Great if you want to improve the analytical clarity of your writing
(or give that impression…)

...odernity. It has
...a new world of
innovation and deviation. In the legal world, the growing area of cyber-crime, metadata and privacy laws all affirm the idea that technological change is inescapable. C Q However, little research has been conducted to assess the benefits and risks of these innovations as they would apply to civil practice. S
This essay will review the implementation of video conferencing technologies in courts. N
C It will argue that this innovation reflects an attempt by the judiciary to give effect to case-

UTS

On the one hand, we have text analytics to detect the presence (absence!) of **factual claims** and **reasoning/ argumentation**

See research on

- *automated writing evaluation*
- *argument mining*

Analytical Report | Feedback | Examples

The analytical report highlights salient rhetorical moves AcaWriter identified in your essay for reflection. For more specific feedback, go to the Feedback tab.

Rhetorical Moves

However, in polarized debates, few people are going to shift their view by **mere force of argument**

...ed finding
...to ideas

...odernity. It has been a formidable vessel in transporting old world values and traditions into a new world of innovation and deviation. In the legal world, the growing area of cyber-crime, metadata and privacy laws all affirm the idea that technological change is inescapable. **C Q** However, little research has been conducted to assess the benefits and risks of these innovations as they would apply to civil practice. **S**

This essay will review the implementation of video conferencing technologies in courts. **N**

C It will argue that this innovation reflects an attempt by the judiciary to give effect to case-

UTS

From argumentation to **reflection**…

Re-humanization of 'the other' is central
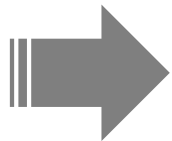
Build common ground through shared experience, rather than try to resolve differences head-on?

Argument:
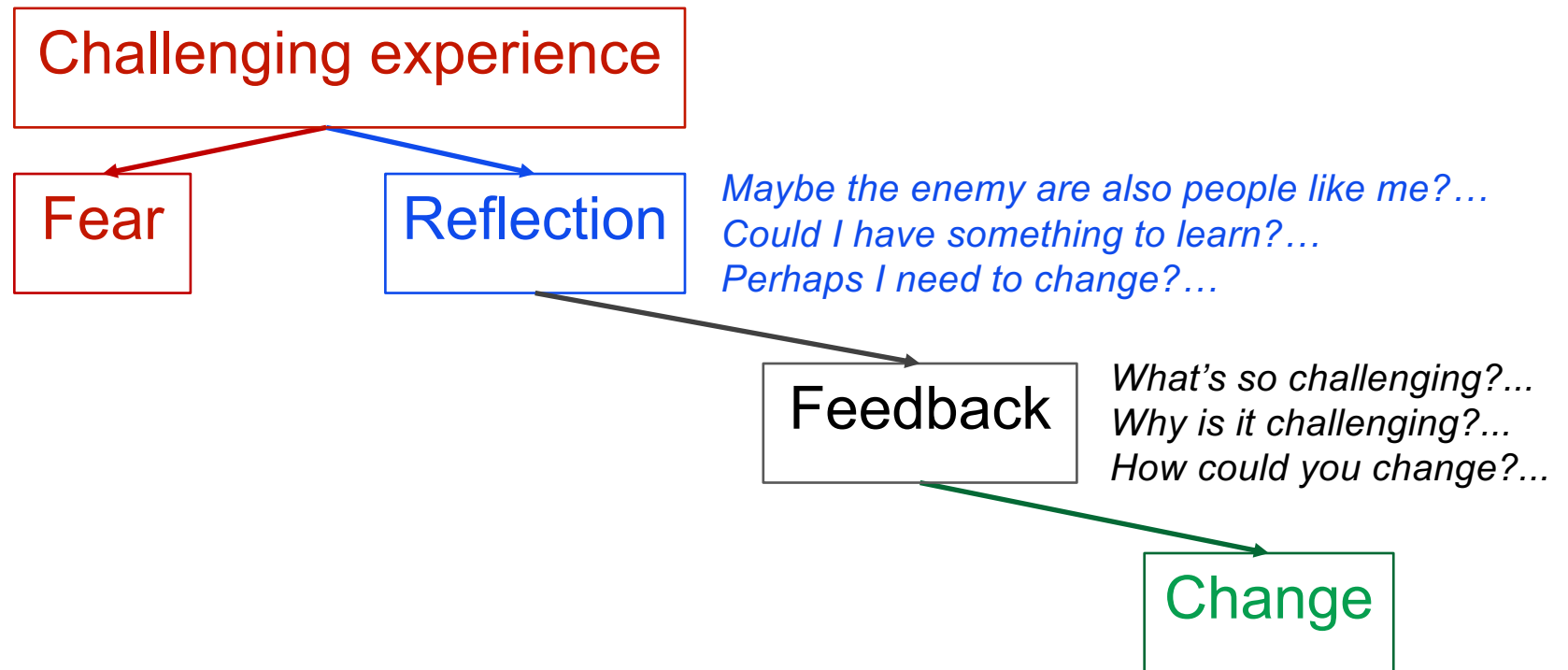
Challenging experience

Fear

Reflection

Maybe the enemy are also people like me?…
Could I have something to learn?…
Perhaps I need to change?…

Feedback

What's so challenging?...
Why is it challenging?...
How could you change?...

Change

Underlying model of reflection
distilled from the literature on teaching and learning reflective writing

Thoughts	Feelings	Challenge	Self critique	Potential solution	Learning opportunity
CONTEXT		CHALLENGE		CHANGE	
Narrative					

Underlying model of reflection
distilled from the literature on teaching and learning reflective writing

Underlying model of reflection
distilled from the literature on teaching and learning reflective writing

Depth		Thoughts	Feelings	Challenge	Self critique	Potential solution	Learning opportunity
	Intention						What change is likely to lead to future benefits?
	Integration			What impact on my goals/aspirations?	What other ideas could I use to change myself?	How do others address these challenges?	How can I learn from other perspectives?
	Internalisation		What do these feeling say about me?	How is this a problem that challenges me?	Why do I need to change?	How can I change?	
	Interpretation	What does it mean for me?	Why do I feel this way?				
	Impression	What do I notice about my situation?					
		CONTEXT		CHALLENGE		CHANGE	
		Narrative					

AcaWriter automated annotation

Pharmacy Masters students reflecting on work placements

| Reflective Report | Feedback | Resources |

☑ 🟦 Initial thoughts and feelings about a significant experience.
☑ 🟣 The challenge of new surprising or unfamiliar ideas, problems or learning experiences.
☑ **Deeper reflection, personally applied.**
☑ ▶ How new knowledge can lead to a change

☑ <u>Expressions indicating belief, learning, or knowledge.</u>
☑ *Expressions indicating self critique*
☑ *Words associated with strong feelings*

☑ ⚡ Sentence too long, might disengage the reader. Try breaking it into smaller sentences

AcaWriter automated annotation

Pharmacy Masters students reflecting on work placements

UTS

AcaWriter feedback

Pharmacy Masters students reflecting on work placements

Computers don't read writing like humans. So, if you're sure your writing's good, it's fine to disagree with AcaWriter's feedback, just like you'd ignore a poor grammar suggestion.

Reflective Report	Feedback	Resources

❗ Perhaps consider introducing your first thoughts, feelings and/or reactions to an incident, or learning task, within the first paragraph. AcaWriter couldn't spot this within first paragraph

✅ You have reflected on your beliefs/learning/knowledge.

✅ You seem to have incorporated a deeper reflection indicating self-critique.

✅ It appears that you have reflected in a deeper way about how your experiences connect with your professional development.

✅ It appears that you've reported on something you found challenging.

❗ It appears that you haven't commented on what you would do differently should the same event occur in the future. Perhaps think about changes in perspectives/strategies/tools/ideas/behaviour and/or approach.

✅ It appears that you may have expanded the detail on the challenge you faced. (1)

AcaWriter automated annotation

Spaceship Media's *Alabama-California Conversation Project*

After participating in this group, it's not hard to figure out why this country is so partisan and divided. Because listening to each other, truly listening to different perspectives and having productive respectful dialogue, is damn hard.

When I'm responding to a question, my process is to usually yell at my computer, furiously type, stop, erase, furiously type, stop, yell, calm down and then think more deeply about my words.

🟦🟣 **As difficult as this is to do, when I take the time to think more deeply about the words I write, I tend to also think more deeply about the words I hear.** And that is always worthwhile.

🟣 Don't misunderstand, I'm not running out and voting Republican next time around, nor am I less concerned with a Trump presidency, but that was never the point. I believe what I believe and I believe that I am right, but so does everyone. So for me, moving forward means more listening, more conversations and more women in Alabama.

🟦 Initial thoughts and feelings about a significant experience.

🟣 The challenge of new surprising or unfamiliar ideas, problems or learning experiences.

▶ How new knowledge can lead to a change

Expressions indicating belief, learning, or knowledge learning, or knowledge

Expressions indicating self critique

Deeper reflection, personally applied

Summary

Designing AI mirrors to provoke deeper human reflection could be an important form of machine augmentation for human sensemaking

Such tools could make citizens more self-aware of their biases, making them less reactive, and more open to new perspectives when their assumptions are challenged

You can't force introspection, but if someone is disposed to, AI can provide personalised coaching on written reflection, at scale

Reflective writing analytics could also enable content analysis for media analysts, educators, citizens, forum moderators, etc.