

Prompts

This structured reflection is meant to get all co-authors thinking in ways that are both evaluative and generative. It will likely take 3 - 5 hours. Please complete it by Nov 20.

EK and MM will review all responses. They will be used to set a course for finishing this work and to set a new goal for submitting the paper to TVCG. Responses may also be included as supplemental material for our paper, to show how our ideas evolved through collective reflection.

Part 1:

Closely read the [current draft](#) of the paper. Think deeply about the content of what you're reading. Try to ignore grammar, wording, or other low-level details right now.

Part 2

We want you to think about what this paper *is currently* about compared to what *it should* be about.

Please respond to these questions in your doc that I put in this [folder](#):

1. **How would you summarize *our current paper* in one sentence?**
2. **How would you summarize *our ideal paper* in one sentence?**
3. **What do you think we have done well?** Identify 3 - 5 strong ideas in the paper.
4. **What do you think we need to do better?** Identify 3 - 5 ideas that need to be improved and show us how to improve them, e.g., instead of saying "*idea X needs more detail*" show us how to fix it: "*idea X needs to be supported with Y and Z*"
5. **What is missing?** Propose 3 - 5 ideas that we need to add to the paper.
6. **What parts of the paper would you be willing to help write or revise?**

For each question, order your ideas by importance. The first ideas should be the more important ones.

Use complete sentences as articulating ideas is an important part of reflection.

It may be useful to look at the reflection section of our [pre-writing document](#), our [project and workshop details](#), or our [timeline of collaboration](#).

response

1. **How would you summarize *our current paper* in one sentence?**

Having reflected on our experience of series of creativity workshops we suggest some ways in which they might be used effectively to inform and influence the early stages of visualization design.

2. **How would you summarize *our ideal paper* in one sentence?**

Having reflected on our experience of series of creativity workshops we suggest some ways in which they might be used effectively to inform and influence visualization design.

3. What do you think we have done well? Identify 3 - 5 strong ideas in the paper.

- a. I like figure 2 a lot, particularly if you drop this into section 7.
- b. I like figure 3 a lot too, but it looks too much like lecturing!
- c. You describe the methods very well in section 5.

4. What do you think we need to do better? Identify 3 - 5 ideas that need to be improved and show us how to improve them, e.g., writing this "idea X needs more detail" is less effective than this "idea X needs to be supported with details Y and Z"

- a. section 6.4 - How do we go from the deluge to useful artefacts
- b. "the nuances of visualization design" in the introduction - are we focussed on these throughout?
- c. relate to DSM / process models. I think we need to be a little more explicit here.

5. What is missing? Propose 3 - 5 ideas that we need to add to the paper.

- a. There is lots to do in section 8. I really don't know what to do about 8.3 as this could be a whole paper in itself. Omitting it is risky, but equally doing it poorly is risky. To decide.
- b. I think that the example workshops are a great idea, particularly if they have alternative pathways that depend on the way that previous activities have gone. E.g. if storyboarding doesn't work, or if something overruns. I'd like to see a mini decision-tree here. Only a few branches, but important to show the flexibility.
- c. I think we need to make some specific statements about things that we find surprising or things that work differently in different situations. The examples are good, but it's a bit anecdotal. They are all individual. Can we pull examples together.
- d. We are a little short on provenance. In T3 I'd like to see columns for each of the workshops and then some encoding to show how much they contributed to the finding.
- e. It may be tough to do this, but I think we need to show the methods that were used in 2 or 3 of the workshops and their in figure 2. I think that passive / pause is one of these and I would add it to 'intent'. Other triggers may involve 'transfer' and 'combination.'
- f. I use prioritization techniques quite a lot and I am not sure that these are 'converge'. Or are they?

6. What parts of the paper would you be willing to help write or revise?

I'm finding it tough to be specific here. Realistically it's difficult to find the time and head space to get into effective writing mode.

BUT - now I know the structure, and I like this, I think I will find it easier to get into sections - so try me with sections. I could edit and add, or comment on these.

Maybe we need a little group time on the sections - 7 & 8.

response

1. How would you summarize *our current paper* in one sentence?

This paper presents a theoretical and practical framework for designing, running, and making use of creativity workshops for applied visualization design research.

2. How would you summarize *our ideal paper* in one sentence?

Basically the sentence above, but with more context that is currently missing in the paper.

3. What do you think we have done well? Identify 3 - 5 strong ideas in the paper.

1. Establishing credibility for providing guidance throughout: the intro does a great job setting this up, and the continued reference back to the workshops we ran is great. Section 4.1 is fantastic for this.
2. Providing practical guidance for the process of designing and running workshops: section 6 is chock-full of good tips and advice that seems essential for running these things effectively the first (second, third, ...) time.
3. I don't think I realized it until reading through, but I think there is an opportunity to say something authoritatively about "critically reflective practice" as a methodology for qual analysis in vis. Between what you will have in 4.2 as an example of good practice, and some reflection on this in 8.1, this could be a citation for others to do this sort of analysis. I don't think you would need to do too much more in 8.1, but we should talk about it. This is perhaps a secondary contribution?

4. What do you think we need to do better? Identify 3 - 5 ideas that need to be improved and show us how to improve them, e.g., writing this "idea X needs more detail" is less effective than this "idea X needs to be supported with details Y and Z"

1. Right now there is a muddled mixture of "things to do" and "decisions to make" in section 6, in particular in 6.2. I was confused about this. Related is that section 5, despite the title, doesn't read like it is about methods. And then, I also felt that I never really read what a CW actually is like! I think all these things are related and can be addressed with some reorganization and contextualizing.

My suggestion is separate out the "design decision model" pieces from the "process model" pieces" -- you have both here. (Reminder, the nested model is a design decision model, and the DAF is a process model).

I'd recommend starting with the decision model part, which is basically how to go about making decisions of which methods to choose. You get part of the way there in 5, but currently this is only about a framing for thinking about methods. You then have, in section 6.2, a number of insights that are really about choosing methods: D5-D7, and possibly also D3 and D4. And then there are the example workshops, which I'm guessing are really about the design decisions, not the process bits. I can imagine this section is something like: here is roughly the flow of a workshop; here are some insights for choosing methods; here are the characteristics we strive to consider; and here are two examples to exemplify what in the world the workshops look like, and how to think about decisions in these.

Then, section 6 is really focused on the process bits of designing and running a workshop. All the insights (besides the ones above) are really about doing this effectively; things to consider along the way; tips and tricks. You can beef this "process model" bit up with a diagram that shows the stages with definitions, then the subsections are the practical things to consider.

2. The related work section should include a short discussion of the existing vis literature that describes CW. I do this briefly in the intro, I think we should have something a bit more explicit in the related work. Not the details like those included in section 4, but more of a, here is the kind of thing previous described, and here are all the things that are missing (or that we can't do) from those descriptions. Also, I'd recommend moving related work to right after the intro -- there is nothing there that requires the background section first, and the background would be nicer right before the meat of the paper (it feels broken up now).
3. The intro promises guidance on "how to report on them", which sounds lovely and important. But the paper doesn't deliver. Is this what you are hoping to have more about in the reflection? I'm not sure yet what to do about this....

5. What is missing? Propose 3 - 5 ideas that we need to add to the paper.

As I said above, one big missing thing is a very clear and concise description/diagram/example of what a CW looks like. I think this can be incorporated into 5.

I don't think it is as clear and descriptive yet about how I (as a random vis person) makes a decision to use a CW in the first place. I think we need a bit more about what they are good for, what they buy you, and why you would choose to do one of these (they save so much time!!!!). In looking back through the paper I'm not totally sure yet where this goes: could be a few sentences in the intro, or ??? But for me, something is missing to help contextualize the idea for other people who are doing design studies and the like.

Detailed discussion of the CW work in the vis literature in the related work section.

Description about how to "report on" CW.

6. What parts of the paper would you be willing to help write or revise?

Whatever I can be helpful in doing.

response

1. How would you summarize *our current paper* in one sentence?

A paper based on a long term collaboration and reflection, which grounds creativity workshops within visualisation design methodology and describes the benefits of using creativity workshops within applied visualisation design research projects, including a number of key recommendations based on our combined experiences.

2. How would you summarize *our ideal paper* in one sentence?

Not much different from above and I found it hard to write this in one sentence but...:

A reflective paper based on long term collaboration, which:

- grounds creativity workshops in visualisation design methodology,
- evaluates the pros and cons of using the method in applied visualisation design research projects,
- provides key recommendations (and pitfalls) based on our combined experiences,
- introduces examples, terminology and literature to allow readers to design, describe, and justify their own creativity workshop methods.

3. What do you think we have done well? Identify 3 - 5 strong ideas in the paper.

3.1 Vis Creativity methods (Section 5) - overall this section is really nicely explained. It is a thorough and quick overview of the relevant information needed when describing and evaluating creativity methods for visualisation projects. It could possibly do with some more citations and referencing of the workshops perhaps. This section also seems like it would flow very well into a detailed explanation or

evaluation of our own methods. I think we could add in the example workshop information here, link to the full workshops in supp material, and then remove Section 7 completely ... see 4.1 below for more details.

3.2 Workshop Process (Section 6) - is now really nicely structured and reads well (in the most part). The analysis and overview of the 8 workshops, our experiences, recommendations and the referencing of all of these items flows well. Just perhaps we could use a more informative title here in this section e.g. "The Workshop Process: A Reflection", or "Our Reflection on the Workshop Process" - just to emphasise this is really the main comparative reflective piece of work in the paper.

3.3. Literature (Section 2) - good combination and pairing of the creativity and vis literature. Section 2 reads really well. As does 3 mostly, although not sure why they are separate. I think these two can be quite easily combined into one really solid background and terminology section.

3.4. Experience (Section 4) - I think this explains really well how much experience we have had in the area summarises the projects in enough detail.

3.5. Recommendations (Table 3) - these are really getting good now. They still could perhaps do with being a bit more punchy - I am not sure how we can improve that though, but I do like the fact they are all in a table and are all recommendations now rather than insights, recommendations and considerations. It is much simpler and clearer. Perhaps these will naturally become more obvious as we add more detail to the table.

4. What do you think we need to do better? Identify 3 - 5 ideas that need to be improved and show us how to improve them, e.g., writing this "idea X needs more detail" is less effective than this "idea X needs to be supported with details Y and Z"

4.1 Workshop Templates (Section 7) - Currently not enough here at all for the final contribution. The final image (Fig 3) does a lot more in explaining the detail within these methods than was in any of our literature before (I believe) but for this paper I expect it would probably be more useful to delve deeper into the details of just one or two specific visualisation creativity methods, rather than giving an overview of two full workshops. As we want to emphasise the decision making in deciding on these methods, having flexibility in the plan, ensuing the understanding of the intent of each method, also the need for flow between and within methods to produce a full creativity workshop plan.

So a proposal for an improvement to Section 7 would be to introduce the icons used in Fig 2 and Fig 3 in Section 5 (e.g. add relevant coloured boxes around prompt, materials, tools, artifacts and add icons to trust, diverging, converging etc.. create a few more icons for some of those that still need them). Then add another sub section 5.6 'Example Creativity Methods' here we add in a description of some we have used in detail. Referring back to the creativity literature and using a small subset of the Fig 3 diagram just for that method e.g.

- *Wishful thinking* as it is a data and visualisation specific method, diverging, etc with bending and breaking. Explain what it is and what it means in reference to the new terminology explained in 5.1-5.5;
- Then compare and contrast with a second exercise - e.g. *visualisation awareness* (visual analogies I called it in the Fig 3 for space and because I saw that in Jason's suggestions - a clear punchy name to the method!);
- Then describe the rest of our example workshop but just briefly to emphasize the flows, and the flexibility, the incorporation of triggers, building trust / vulnerability, incubation periods etc with reference to Fig 2 and then refer to supp material for full details of two workshops which incorporate these above 2 methods (that would be nice, but not needed if not possible) - 1 full day, 1 half day (we probably should then add some more icons to the Fig 3 for the creativity triggers, trust etc).

The advantage of this is we can remove section 7 and then after the very reflective reflection section we move straight into the discussion. Should help the flow of the paper.

4.2 Reflection (Stage of the Process) (Section 6.5) - this is very vague at the moment. I think it is an important part of the workshop process. Well it certainly was for me as I was: trying to learn from my experiences - improve my own ability to run workshops, and also reflect on how the methods went for write up in papers (including this one). As this paper is all about visualisation in research then I think it should remain an important phase of the workshop process. Perhaps without the applied research emphasis then it would be less important. I can try to help re-write this with you (see point 6 below).

4.3. Overview of the Framework - actually it is really nicely described in the initial contributions, but I got lost when reading the paper itself and had to look back to see what the contributions said. It would be really great to have some kind of overview visual diagram which tries to explain the framework as a whole. Is this possible? If we think about how other people will refer to the paper, I do think an overview diagram would really help to visualise and explain what the framework actually consists of.

4.4. Discussion - this needs some work. What is there is fine, but I think there needs to be something perhaps more personal in there. I don't think it needs to be a long discussion, but I think we should reflect on our reflections. Not sure, but this section's content seems far too 'formal' (of want of a better word) at the moment. Also the limitations of are missing or hidden in the method section - Do we ever describe the limitations of creativity methods themselves?

4.5 Analysis Section (6.4) - this seems a little unfinished at the moment and also needs some positivity - it is rather negative at the moment I think. I personally think the analysis process can also be quite creative. Whilst all analysis of artifacts is of course difficult and rather messy. I also found it rather enjoyable at times. Of course the more formal process of writing out the text for structuring the analysis and formalising your process for presenting to other people was a little tedious, but far easier than listening and transcribing interviews. Also looking back at all the artifacts was quite fun. I saw important things I'd missed or skipped over during the workshop (as there is so much going on). This was really quite reassuring and even enlightening to see how ideas had developed throughout the day. Many more themes appeared than were not previously identified during the workshops.

5. What is missing? Propose 3 - 5 ideas that we need to add to the paper.

Discussion - same as 4.4. above. Okay there is a short discussion but I find there is little personal discussion here at all. There are 5 of us reflecting on our experiences. I think we could perhaps reflect on our reflections here e.g. did we find out unexpected things, why did we feel this was so important to publish, what do we think hinders our approach, what do we like about these workshops - what is it really that makes us want to do them again and again? We influenced many people in the process - many commented since (particularly of the one here at Monash) that they really enjoyed the style - I can seek them out see if I have any quotes (or can ask for their reflection) - perhaps Tim had something to say about this?.

6. What parts of the paper would you be willing to help write or revise?

I think I could certainly help with finishing up on section 6 - particularly on 6.4 and 6.5. Also can work on the example workshops for 7, particularly if you like the idea about adding it to section 5 - I'll wait to hear what you think about that.

Also happy to think and try to write the discussion with others. In fact happy to help on anywhere I am needed...

There are a few areas I will need to add some comments in for it to be edited slightly re: my workshops.

