Reviewer's report

Title: A multidisciplinary systematic review of the use of diagrams as means of collecting data: techniques, benefits and recommendations

Version: 1 Date: 6 October 2010

Reviewer: Gyuchan Thomas Jun

Reviewer's report:

This paper conducted a literature review to systematically collect lessons learned from previous research in various disciplines and make structured recommendations and guidance for researchers on how to use diagrams for their qualitative data collection process.

This paper was a very interesting read and overall it was well structured and easy to read. However, I would like to raise some points as inputs for clarification and additional explanation (presented in order of the paper structure).

AUDIENCE

(Discretionary Revision) First all, this paper seems to have a broad target audience, not necessarily specific to medical. Given this journal has audience mostly in the field of medical research, I wonder if there any medical-specific findings or recommendations. Are there any distinctions between healthcare and general applications?

TITLE

(Minor Essential Revision) (page 1): Title seems to be some elements of being misleading. First, limiting ‘data’ to ‘qualitative data’ would make the title much clearer. Second, I wonder what ‘techniques’ (after colon) is referring to. Before reading the paper, it seemed to be referring to diagram types. But after reading the paper, it seems to refer to guidance on how to use diagrams. Throughout this paper, the use of a word, ‘techniques’, needs to be carefully reconsidered. It sounds too specific and skill-related to describe general guidance presented in this paper.

ABSTRACT

(Discretionary Revision) Abstract. Results (page 2):

“The choice to use diagram for data collection is …such as ..”

The examples after ‘such as’ are not very helpful. ‘Understand participants’ knowledge or cognitive structure,’ ‘overcome cultural and linguistic differences,’ or ‘understand highly complex subject matter’ might be more meaningful examples.

“Diagramming data collection techniques varied by …”

Techniques are a too-specific word again. The better expression might be “How
to use diagrams for data collection varied by”

BACKGROUND

(Discretionary Revision) (page 5, 2nd paragraph)
The following two papers of mine, although I don’t want to suggest my own papers in this context, could be a counter example of lack of publication on process mapping outside of organisational literature.


METHODS

(Minor Essential Revision) I believe there are many research papers which use pre-constructed diagrams to collect additional data. For example, many diagrams have been used to identify and analyse potential system risks. In those papers, participants do not necessarily generate or edit diagrams during data collection (excluded in this review), but diagrams are used for data collection. It might be necessary to clarify what kind of diagramming (participatory diagramming?, simultaneous diagramming) this paper is limited to. Maybe need to revisit title again.

RESULTS

(Discretionary Revision) (page 9, 1st paragraph)
It would be very helpful if you provide rough figures of what percentage of the reviewed papers come from each discipline (education, healthcare, engineering, etc).

(Minor Essential Revision) (sub headings)
The subheadings (reasons for choosing, approaches for instruction and creation, etc) are too brief and do not naturally correspond to your research questions well presented at the end of Background section. It would be better to put those research questions as subheadings.

In addition, under the sub heading ‘Approaches for instruction and creation,’ each paragraph (the second onwards) is answering different questions so it might be better to add sub-sub headings to clearly show which question each paragraph is answering. For example, the sub sub heading for the second paragraph would be ‘how much instruction was given before diagramming?.’

(Minor Essential Revision) (page 10, line 2)
It would be very helpful if you provide some examples of the highly complex subject matter.

(Minor Essential Revision) (page 11, the first line of the third paragraph)
‘Used multiple diagrams’ sound like multiple types of diagrams. It would be more accurate to describe ‘used diagrams at multiple time.’

(Minor Essential Revision) (page 13, last paragraph)
Please rewrite the sentence starting with ‘Thus the diagram was more of a summary tool..’ It is hard to follow.

DISCUSSION
(Major Compulsory Revision) (page 15, first paragraph of Discussion)
I am not sure how this paper is different from Nesbit & Adesope in terms of type of diagrams. Nesbit & Adesope includes concept, knowledge and node-link maps. It is argued that this paper has much broader definition of diagrams encompassing less structured diagramming. It would be necessary to include some of these examples (structured and less structured diagrams) in the results section.

(Minor Essential Revision) (page 16, third paragraph, third line)
“We have provided an overview of the techniques for ..”
‘Techniques’ are a too specific word again, guidance seems to be more appropriate.

(Minor Essential Revision) (page 17, last paragraph, forth line)
Please rewrite the sentence starting with “If researchers require highly structured diagrams…” It is too long and hard to follow.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests.