Data Commentary in Science Writing: A Discourse Model for Multimodal Result Presentation in Science Publication

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Our aim

To develop discipline-specific rhetorical models of data commentary practice and to use these models to annotate a small, disciplinary corpus of master's theses and research articles that can be used for both pedagogical and research purposes in ESP contexts.

Why data commentary?

Data commentary, the written comment on visual material, is central to many science and engineering fields (see e.g. Poe et al 2010). For students, data commentary can represent a problem also at advanced levels, with issues concerning language proficiency as an added difficulty for L2 users writing in English. For science teachers, it might be problematic to articulate knowledge about data commentary since they are so deeply entrenched in disciplinary practice (see e.g. Wharton 2012; Blåsjö 2011).

In our own contexts at universities of technology, where English is a foreign language, but also the language of instruction at the master's level, we meet accounts of such difficulties from students and teachers:

"I often have to present many different curves from my simulation work and I find it hard to do this in a fluent way without too much repetition and to do it in an understandable way without explaining everything from the start."
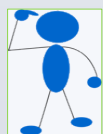
PhD student

"Students put too much trust in the figure, and you get comments like:
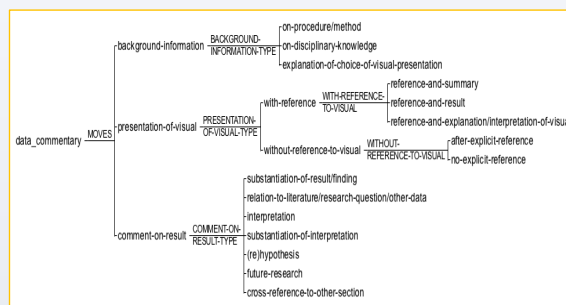
'The results are shown in Figure 5.'"

Science Teacher

Yet…

- very few studies and academic text books focus on data commentary practices (see e.g. Guinda, 2011), and
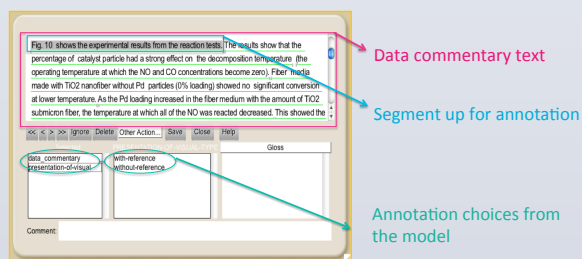- those that do are too general to be of real use.

A rhetorical model for commenting on result-presenting visuals in chemical engineering papers

Corpus material and annotation method

- Data commentary sections from the result or result and discussion section of master's theses (approx. 30,000 words) and research articles in chemical engineering (approx. 23,000 words).
- The Biber-Connor-Upton top-down approach to discourse analysis (The BCU approach) (Biber et al 2007), which involves manual analysis of discourse segments (moves).
- Annotation of discourse moves in the UAM corpus tool, developed by Michael O'Donnell (freely downloadable from http://www.wagsoft.com/CorpusTool/).

Annotating in the UAM corpus tool

Data commentary text

Segment up for annotation

Annotation choices from the model

What can students do?

Students can explore the corpus for:

- patterns of rhetorical moves related to data commentary in discipline-specific texts and specific genres (master's theses and research articles);
- differences in the use and patterning of discourse moves between master's theses and research articles;
- phraseology associated with specific moves.

Students can use this exploration to:

- assess the effectiveness and quality of their own data commentaries;
- develop their thinking about the role of data commentary in their discipline and potential genre differences between master's theses and research articles.

Our next step is to test the corpus tool in the classroom in order to evaluate its value and efficiency in terms of student learning. If we achieve good results, we will develop discourse annotation models for further disciplines and add these to the corpus.

References

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