

*The Use of Concept Maps to Illustrate  
Understanding in a Standard Reading Exercise*

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**Abstract**

The benefits of a standard reading exercise (SRE), in which students regularly answer the same set of questions by applying them to a variety of different texts, were first explored by Scott et al. (1984). The Foundational Literacies Advanced Stream curriculum design project at Kanda University decided to experiment with such an exercise, as it is felt that introducing students to a range of different texts can be a useful method of learner empowerment. In particular, the second section of the SRE is of interest. This section allows students the freedom to create a 'concept map' that demonstrates their understanding of the organisation of ideas, the author's purpose in writing, and the tone of the text. An example framework is given, but learners have total freedom (e.g. digital or paper-based, use of written language or pictures) to write or draw whatever they wish to demonstrate their understanding of the text. This paper looks at the semiotic work conducted by students in creating these maps in relation to the 'affordances' idea: what does the use of non-linear text afford the student that linear text does not, and vice-versa? The paper hopes to be of benefit to anyone teaching reading classes, particularly those who have an interest in Multiliteracies pedagogy.

Keywords: multiliteracies, standard exercise, semiotics, multimodality

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## 1. Introduction

At Kanda University, students in the advanced stream of a Foundational Literacies class regularly complete a standard reading exercise (SRE) with a variety of different texts. A previous paper (Owens, 2014) looked at the effectiveness of the exercise. This paper will summarise the idea of the SRE, before focusing on one particular section of the exercise. Section 2 asks students to represent their understanding of a text using concept maps, and students came up with various ways of answering this section, including some use of imagery and ‘mind-mapping’. The paper seeks to examine the ‘semiotic work’ conducted by learners in the process of completing this exercise, and to consider what the utilisation of non-linear text affords the author that linear text does not (and vice-versa). It also looks at what form of concept map or image proved most effective in representing their understandings.

## 2. Background / Literature Review

At Kanda University, a new curriculum is underway that employs a ‘Multiliteracies’-led pedagogy, as advocated by the ‘New London’ group (Cazden et al., 1996). A previous paper by the author (Owens, 2013) explains this in detail and justifies its practice. In summary, and relevant to this paper, ‘Multiliteracies’ suggests a move away from the old-fashioned concept of literacy as involving merely the reading and writing of linear text that defines the “traditional language-based approaches” (Cazden et al., 1996: 60) towards a “broader view” that considers the “multiplicity of communications channels” and “diversity in the world today”. Hence ‘literacies’ becomes plural, and ‘multi’ refers to both “social diversity” and “multimodality”. In practice, this involves the greater inclusion of multimodal resources and non-linear text in the classroom and a greater consideration of the process of meaning-making. Educators should aim to enable students to consider all representations of meaning (i.e. not only linguistic, but also, for example, visual, auditory, and gestural). Learners are encouraged to make use of their own experiential knowledge to create their own meanings. A course employing such pedagogy, then, should focus on “reconciling” the unrestricted “tools of authorship” with an “increasing diversity and complexity of meaning-making resources” (Nelson, 2008: 66).

The old, segregated skills (‘Basic Reading’ and ‘Basic Writing’) classes are replaced by a new ‘Foundational Literacies’ course. This course is genre-based, again for reasons that are explained in more detail in Owens (2013), but can be summarised thus: facilitating “genre awareness” (Johns, 2008: 238) in students empowers them to the extent that it enables them to function effectively in the world outside the classroom; as educators we can “ground ... courses in the texts that students will have to write in their target contexts” (Hyland, 2007: 148). Some of the genres that the learners encounter in the course include Narrative, Email, Essay and Information Report.

A separate ‘standard reading exercise’ (SRE), effectively functioning as weekly homework for students in the advanced stream, complements this genre-based course. It comprises the same list of questions that students answer with a variety of different texts from a range of genres, as inspired by Scott, Carioni, Zanatta, Bayer & Quintanilha (1984), asking students to identify such aspects as key vocabulary, the authorial purpose, intended audience, language choices, and their own level of interest

in the text. The SRE can be seen in Appendix 1. Another paper by the author (Owens, 2014) examines the effectiveness of the exercise, in the way, for example, that it compliments the course, contributes to 'genre-awareness' on the part of the students, and how it encourages them to read and think about texts differently.

This paper however chooses to focus instead on the use of 'concept maps' in Part 2 of the exercise. In this section students are asked to "create a 'concept map' showing 1) the organization of ideas within the text... 2) what you think the author's purpose is; and 3) the tone of the text." The students are shown "an example framework" (Appendix 2) but it is emphasised that they have complete "freedom to draw in any way that helps you to understand." Students are reassured by their teachers that they can draw pictures, use 'mind maps' or make use of any form they wish to represent their understanding of the text. They also have the freedom to use their iPads (which all students in the advanced stream have) to create digital maps (there are many apps that are suited for this purpose, most of them free) or to use a simple pen and paper.

The inclusion of this question is relevant to the 'Multiliteracies' pedagogy, and relates to the work done by Kress & Van Leeuwen (2001) among others, on the usefulness of non-linear text and the "affordances" idea. They claim that "language" is not necessarily the "most effective mode in all circumstances" (p29). Linear text arguably restricts both the author and the reader in terms of their interpretation of a text. In English, the written sentence evolves from spoken language, which, divorced from image and other modes, encourages a dependency on conceptualising in terms of time, sequence and causation.

...ideas encoded in imagery may be said to offer a different, more spatial and simultaneously apprehended kind of meaning than the same ideas encoded in oral language, which presents ideas in a sequentially and temporally organized way (Nelson, 2006: 58).

Many recent studies wish to challenge the "assumption that language is paradigmatic for meaning" (Mitchell, 1994: 12). The use of image, drawing...etc can afford the learner something that written language cannot. This seems to be especially relevant where second language learners are concerned. Nelson (2008) points out that "students using a language other than their primary one would have a more authentic need to explore and tap into the communicative potential of nonlinguistic resources" (p69). Using non-linear text, for example an illustration or a chart, can allow the author, especially if they are a non-native language user, to 'plug the gaps' in their linguistic ability. It creates a more 'even playing field', where people are able to express their ability to make meaning without being restricted by their ability with regard to traditional literacy 'skills'.

This paper, then, seeks to focus on two main research questions: 1) What does the use of non-linear text afford the author in representing understanding that linear text does not (and vice-versa)? 2) What mode of non-linear text (e.g. illustration, 'mind map'...etc) proves most effective in demonstrating this understanding?

### **3. Methodology**

The process involved is more fully explained in Owens (2014). Three students from an advanced stream class (from hereon referred to as Students A, B and C), all of whom were female and in their first year of study at the university, were chosen at random. Each was interviewed for approximately an hour after the academic year had ended. The interviews focused on the students' answers in their SRE responses to just five of the twenty texts that they encountered that year: an email from a mother to her son's fiancé, a 'spam' email asking for bank details, a recipe, a poem ("Thanksgiving Day Prayer" by William S. Burroughs) and a research article from the BBC website entitled "Kinder Children are More Popular." It would have been arduous and counter-productive to have looked at the responses to all twenty texts, and it was felt this sample of five provided a sufficient variety to reflect the broad range of texts that the SRE was applied to. More importantly, these five generated the most interesting responses, especially with regard to the concept maps in Part 2.

The interviews took the form of 'grand tour' questions. The three students were asked to provide general, informal comment on their answers and the SRE in general. Several inter-related themes emerged from the comment the students offered. Most of these themes, centring principally on the effectiveness of the exercise and suggested improvements that could be made to it, were tackled in a previous paper (Owens, 2014). This paper focuses on the concept maps, and any student commentary that relates to the two research questions listed above. In doing so, it examines any interesting or enlightening remarks they made regarding their use of concept maps and the reasons they offered in doing so.

### **4. Results**

As stated earlier, students were shown a model framework (Appendix 2) but given the option to use different forms of concept map. The word 'map' here is possibly misleading, as it perhaps encourages students not to draw or be more creative in their responses. While the model itself is not strictly speaking linear text, it does not afford much in the way of visual creativity. It does not make use of illustrations or images. The interviewed students predominantly selected pen and paper to create their concept maps, and only one student (C) deviated from the model in her answers (see Appendix 3).

This was a 'lazy' choice' rather than a deliberate strategy. Student A "just imitated" the model and then "got used to it". Similarly, student B "didn't think to change" the habit she had got into. However, given the chance to comment on this without being 'nudged' in any way, students A and B saw instances where deviating from the model would have offered benefits in hindsight. In summary, all three students believe that both using the model and using imagery/different maps had limitations depending on the context.

Interestingly, without any pressure or 'leading questions' from the interviewer, all three students, independently and without discussing the point with one another, identified types of text the model was useful and not useful for. Student A made a distinction between what she termed "logical" or "information" texts (exemplified by research papers and essays) and "emotional" or "deep" texts (such as the poem). She

considered the model useful for “style to do logically” such as a research paper because the model frameworks can make such texts “more simple and easy to understand”. However, she believed the model was “not useful” with “deep” texts such as the poem. In this case, “drawing pictures, picking up important key words, using imagination would have been more helpful” because the standard model is “too logical... too simple to imagine and think deeply”. Interestingly, she put the email in the “deep” category, possibly because of its emotional content. For her, “drawing” would have been useful for representing her understanding of the email because “drawing makes us easier to imagine... I can feel or remember more emotionally...”. In addition to drawing pictures, she also demonstrated another form of representation that she believed would have been useful for explaining her understanding: “One word and then expanding...one word or key word”; she then drew a web of interlinked words and ideas. This drawing more closely resembles a traditional ‘mind map’, without the restrictions presented in the model.

This distinction the student makes between the different type of text, and her word choice in doing so, is interesting in light of the following observation:

When the diverse elements of a multimodal text dovetail in such ways that certain meanings are particularly foregrounded, if one likes, ‘intermodally’ amplified, we get it, often on emotional and visceral, as well as intellectual, levels. (Nelson, 2008: 65)

Student A seemed able to notice texts in which the “emotional” level is more “amplified”, and others where the “intellectual” (or as she terms it, “logical”) level is “foregrounded”, and she seemed to suggest that more creative, less constrained ‘concept maps’ than the model that make more use of visuals are more useful for representing her understanding of the former.

Student B made a very similar distinction, although she used different words to do so. Roughly corresponding to A’s “logical” and “emotional” texts, she labels the two groups “formal” and “casual” respectively. She places the recipe and poem in the “casual” group, and the research paper (and interestingly the email) in “formal”. Her thinking on this point uncannily echoes A’s comments. She thinks that the model framework is “maybe ... helpful” for the “formal texts” but not “casual”. B says it helps with the former because it helps make all the details and long explanations “clear”, thus she “...can write summary easily. I know the form”. For her, the standard model framework is useful for any text that has clear, identifiable “paragraphs” and/or is describing a “process”.

However, she found that with the poem, “It doesn’t have {many} paragraphs, so I need to find many main ideas from one paragraph”. Like A, she suggests a diagram “like spider” would be more useful to “explain my ideas... sometimes help to expand my imagination or my thinking” especially when she wants to link to “the writer’s feeling”. Like A, she identified that a ‘freer’ model is more useful when ‘emotion’ is more amplified than logic or a descriptive process, although she did not mention the use of imagery or illustration. The ‘spider’s web’ map she suggested retrospectively is, in her opinion, useful with “casual” texts as it acts like a kind of filter in helping her identify the key points: It “...links to main idea and deletes not helpful words, find clear information or my opinion.” Essentially, she explained that “casual” texts have

“many different ideas” that “don’t relate to main ideas but I can expand and make it familiar” so the web would have worked better. That is, it is hard for her to locate the formal structure in informal texts, so using the ‘web of ideas’ is easier with what she calls “casual” texts. This would seem to relate to the point made earlier that linear texts, as with oral language, are constrained by the fact they best represent concepts “in a sequentially and temporally organized way” (Nelson, 2006: 58). When sequence and time are not foregrounded, less linear, structured forms of expression seem more suitable to effective representation.

Student C’s answers are especially interesting in that she actually departed from the model in her representations. She used drawings to make sense of the poem, a web of ideas for the recipe (see Appendix C) and a slightly differently ordered version of the model for the research paper. She might be considered better qualified to talk about the effectiveness of imagery and non-linear text, then, as she actually made use of the forms the other two students retrospectively wished they had used.

Arguably her most interesting comment in the context of this research is her complaint that “sometimes I feel it’s difficult to write model”, especially with the “recipe... I think if I wrote like this style, it’s only words”. Whether she consciously meant to make such a profound statement or not, the phrase “only words” seems to suggest language is limited to some degree when representing ideas. She went on to explain that even when she reads recipes online, she dislikes the use of prose: “I always think this is not good for me... so I think simple is easy to understand when I cook, so I just wrote words and what is the connection... it’s like picture but this is just text but I feel it’s like picture”. Intriguingly, she imagines the cooking process (and thus the recipe ‘text’) as a visual scene in order to make sense of it. When representing her understanding of certain texts, she believes pictures are easier to understand because “we can image easily”.

Similarly, student C believes “picture is better” with the poem too. The poem in question (“Thanksgiving Day Prayer” by William S. Burroughs) is an interesting example because it appears to be a letter, rather than a poem, and is heavily ironic. Of the three interviewees, only C picked up on this irony, so it is interesting that she used an illustration to represent this (Appendix C). Understanding this text would prove especially difficult for non-native users of English, given its ambiguity and the fact that the genre is disguised to some degree. It is a poem that may appear to be in the form of a letter (with an addressee) or a prayer (as suggested in the title). That it is a poem may counter the expectations of the reader, as “we instinctively feel that a text that recognizably bears even some of the hallmarks of a genre should conform to basic expectations set up by that genre” (Nelson, 2006: 67).

However, C has found a way to express herself when these expectations are contradicted. She concedes that using the model or more ‘traditional’ forms of linear text can be useful: “I think write down many sentence like this is good for me”. Nevertheless, in cases such as this, where a poem (which she initially thought was a letter) runs counter to her assumptions of the genre, she needed to use a different form of representation to express her understanding of the irony and the expectation-defying nature of the text: “...because often when we write letter it’s, it’s not including like bad things so it’s rare if I see the genre, I think it’s not including bad thing but actually it’s including bad thing”. Using only linear text or a concept map

based on the model framework seemed to be insufficient to allow student C to be able to do this.

C also makes a very valuable point when asked what her main reason for using illustrations rather than the model was. The SRE was time-consuming and arduous, and drawing a picture was a good way for her to “save time” when answering Part 2. This efficiency of expression is another simple, but very significant benefit that non-linear text offers the author.

As with the other interviewees, nonetheless, C feels using only images or pictures has its limitations in this exercise:

Sometimes it is easy to write the pictures, but it's difficult to understand the contents in detail. If I write down the standard style I have to write down many sentences so I can understand more and more.

In other words, relying on linear text and writing sentences ‘forces’ her to focus on details and therefore come to a more complete understanding of a text.

## **5. Conclusion**

The student interviews seem to confirm what many researchers and educators currently believe: that the use of non-linear text (such as imagery) affords the author advantages that linear text cannot. It can save the author time and provide a more efficient form of expression, it can enable students to show they understand a text on a deep level (that they ‘get it’ somehow) that logical expression might not be conducive for, it allows the author to explain concepts or understandings without being restrained by time or sequence, and it fills in gaps in a language-learner’s lexicon:

Multimodal communication offers a potential levelling effect, an alternative route whereby new understandings can be reached that are ultimately supportive of authorial expression in the L2 (Nelson, 2006: 70).

Nevertheless, the student interviews also suggest that, just as linear text without the use of imagery or other modes can be restrained in the meanings it allows the author/reader to construct, there are limits to how useful image without the use of language can be. In fact, as is evidenced by Student C’s combination of both illustration and written text (Appendix C), often the most effective (in terms of the depth of understanding it was able to communicate) ‘concept map’ made use of both language and imagery. This combination of “the visual/pictorial and oral/linguistic” is often able to create “...new forms of meaning, in the (loosely) *gestalt* sense of a whole that is irreducible to and represents more than the sum of its parts” (Nelson, 2006:56).

Arguably the most interesting outcome of the interviews was the fact that all the participants independently came to some very similar conclusions: that there were distinct types of texts, and that different types of concept maps were useful with different types of text. The former conclusion is one that suggests the exercise and interview process have been useful in satisfying one of the stated aims of the course,

as the observation would seem to indicate that students have become ‘genre-aware’ to some extent. They are able to, independently, notice different types of discourse and the salient features of each one.

The second conclusion comes some way towards answering one of the stated research questions. Rather than there being any one ‘superior’ form of representation of understanding, the most effective form of concept map is context-dependent. Generally speaking, according to the students themselves, restricted, ‘linear’ maps are more useful with “logical”/ “information” / “formal” texts. More creative maps, those that, for example, make use of illustration and less spatially confined ‘webs’, seem better suited to representing understanding of “deep” / “emotional” / “casual” texts.

The results of these three interviews are to some extent limited in what they can conclude, but they do function well as a pilot study that can lead to interesting future research, and changes to the form the standard exercise takes. Students taking the same course in the 2014-2015 academic year do the same exercise with some minor alterations. Rather than showing the students one ‘linear’ model framework for the concept map in Part 2 of the exercise, they were shown a greater variety of examples, including some of the more creative attempts from Student C, in order to encourage current freshman students to make freer use of the concept maps. The results are that students’ ‘maps’ are much more varied and creative, with some students opting with ‘linear’ approaches, others making greater use of illustration and imagery, some combining the two, and others opting for different forms depending on the type of text. Most students decided to use digital maps rather than pen and paper, too.

This new selection of maps offers a richer source from which to further investigate the affordances idea. Ideas for future research include analysing these maps in light of work done in the field of semiotics and visual design, such as Van Leeuwen (2005). This might include, for example, paying greater attention to the way in which the students decide to frame or segregate different sections of their maps, and if certain patterns can be observed in the work that sheds light on the methods students use in their creation of different meanings from the same resources.

The research conducted in this paper and any future work is potentially of interest to anyone interested in the idea of experimenting with the use of non-linear text as a tool to allow students to express their understandings and create new meanings out of texts. As such, it hopes to contribute to a growing field of research in semiotics and Multiliteracies-pedagogy.



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## **Appendix 1**

### **Standard Reading Exercise Used in the Foundational Literacies Advanced Stream Course**

#### **Part 1 – Predicting**

1. Skim through the text. Do you notice any key words or phrases? Write them down.
2. What do you think is the main idea (topic) in this text?
3. What do you think the genre of the text will be?
4. What do you think the tone of this text is generally:

Academic

Formal

Argumentative

Informal

Literary

Mixed

Other:

**NOW, READ CLOSELY THROUGH THE TEXT**

Then answer the following questions.

5. Were your predictions in Questions 2 to 4 correct?

1 2 3 4 5

(1 = No - I got everything wrong; 5 = Yes - completely correct!)

#### **Part 2 – Reading for content**

Read the text in more detail, and create a “concept map” showing 1) the organization of ideas within the text (e.g. give each paragraph a sub-heading); 2) what you think the author’s purpose is; and 3) the tone of the text. Your teacher will show you an example framework for this, but you have freedom to draw this map in any way that helps you to understand. Try to include reasons or examples in your notes.

### **Part 3 – Text in context**

1a. What kind of text MIGHT this be? \*Choose only one.

- .. Business letter
- .. Diary
- .. Email
- .. Newspaper feature article
- .. Science magazine feature article
- .. Personal letter
- .. Work of fiction (e.g. novel, short-story, etc.)
- .. Academic textbook
- .. Research paper
- .. Other:

1b. Why do you think it could be one of these texts?

2. Who do you think the intended audience of the text is? What clues are there in the text that show this?

3. All language use (e.g., vocabulary, tone, sentence length) reflects a choice. Why does the writer choose to write in this style?

### **Part 4 – Reflection**

1. How interesting was the text?

1 2 3 4 5

(1 = very boring; 5 = very interesting)

2. As a very rough approximate, how much of the text do you think that you understood? (e.g.10%, 50%, 90%)

3. If you found the text difficult to understand, what was the main reason? \*Choose one:

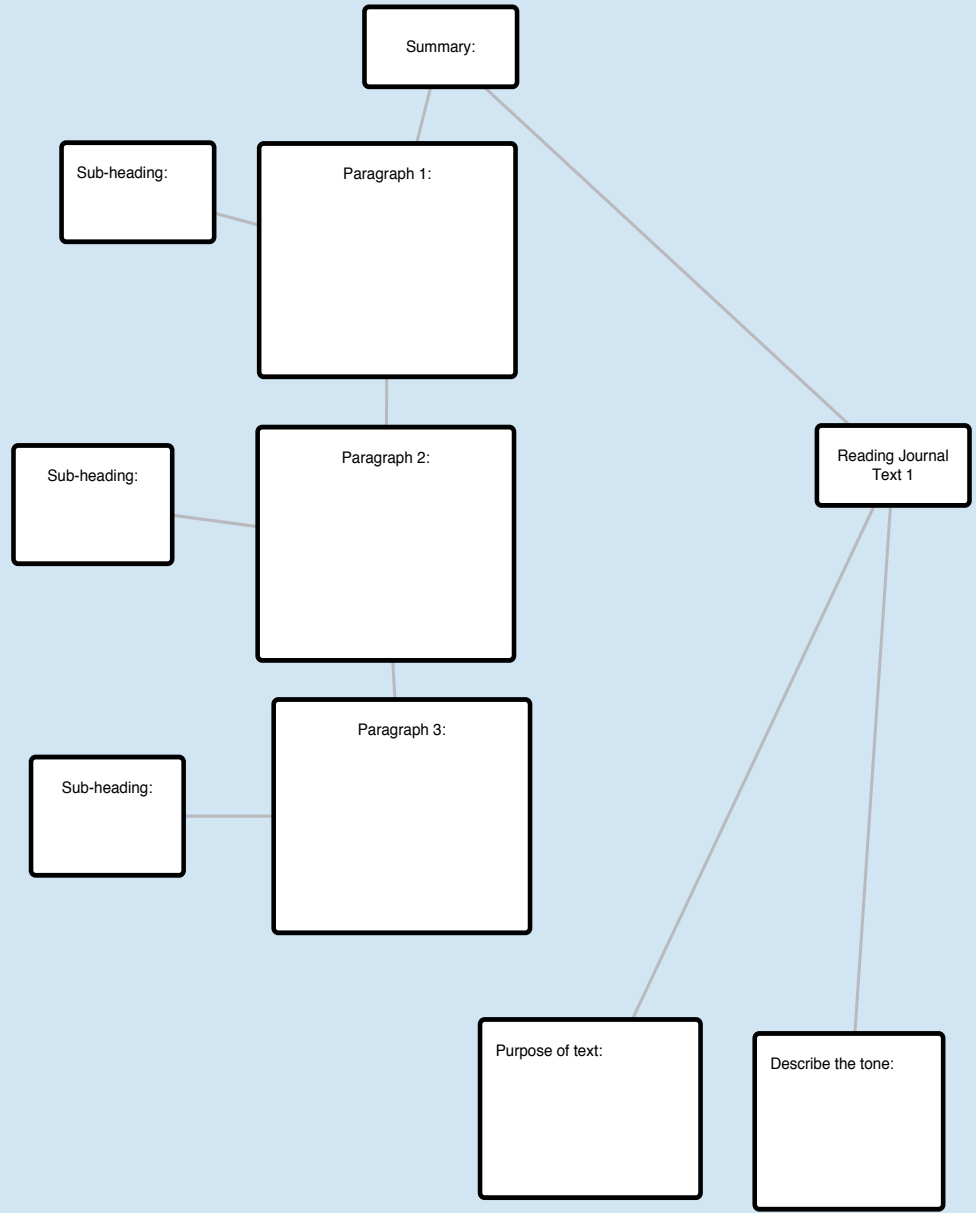
- .. It wasn't difficult
- .. Lack of previous knowledge of the topic

- “ A grammar problem
- “ Too many new words
- “ Inefficient reading strategies
- “ Difficulty in separating main points from details
- “ Difficulty in identifying the introduction or conclusion
- “ Other:

4a. If you answered “A grammar problem” in Q4, AND you think you know what grammar point is that made it difficult to understand the text, please elaborate here. *Note (1) If you didn't have a grammatical problem, write n/a. Note (2) If you answered “A grammar problem” in Q4, BUT you're unsure what the grammar problem is, please write “unsure” below.*

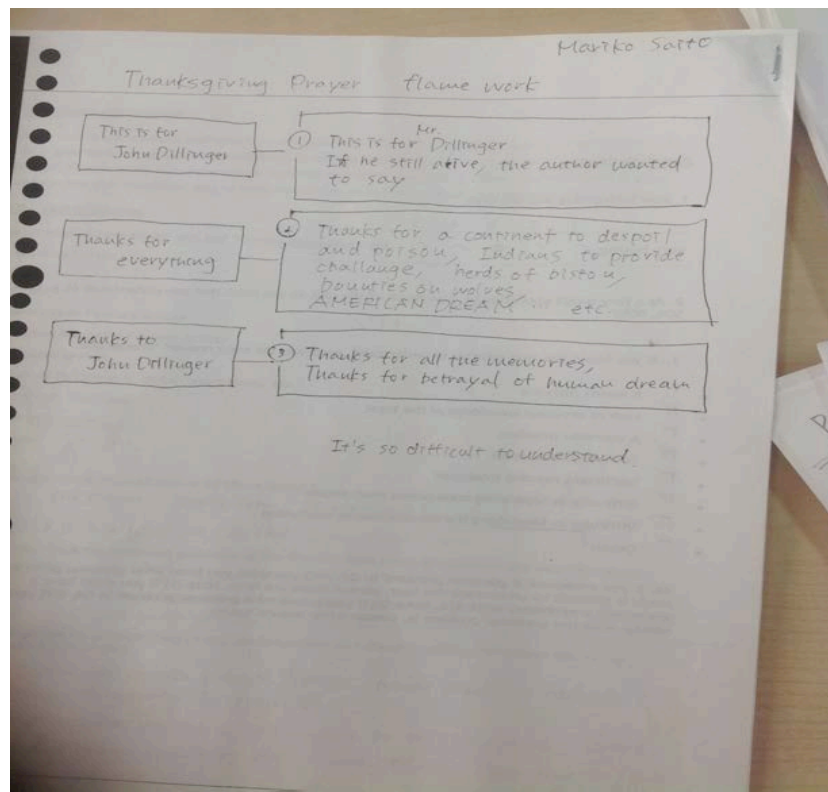
**Appendix 2: Model framework for the concept maps**

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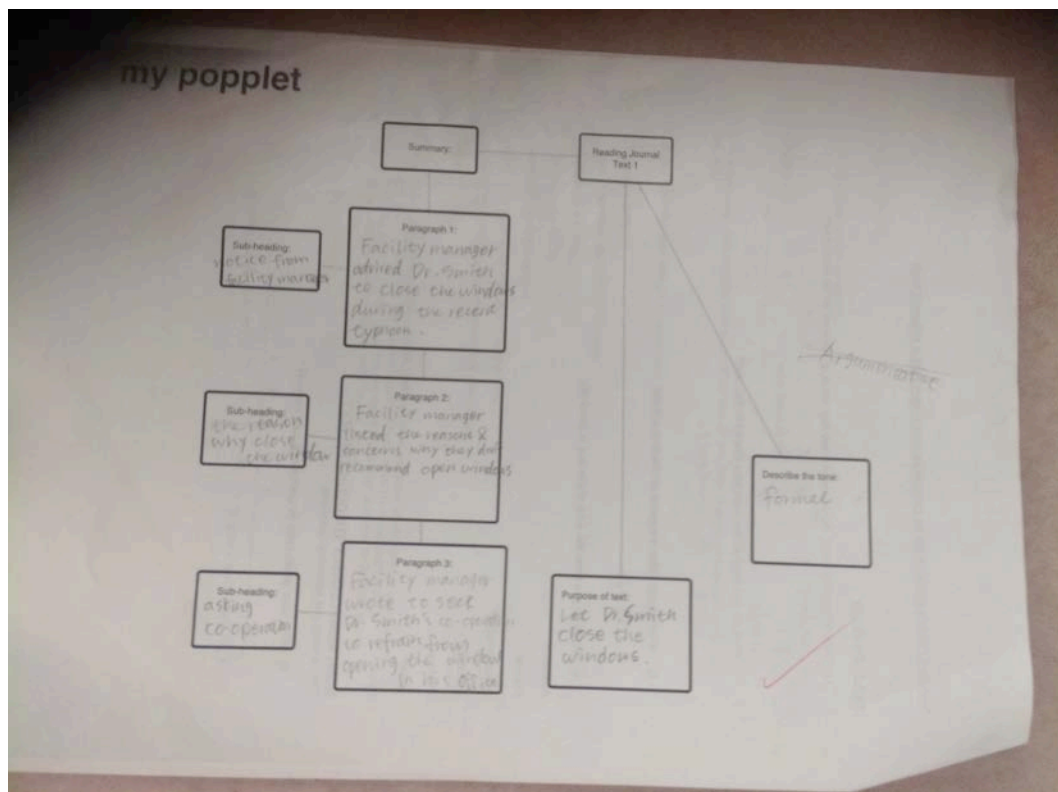


### Appendix 3: Students' concept maps

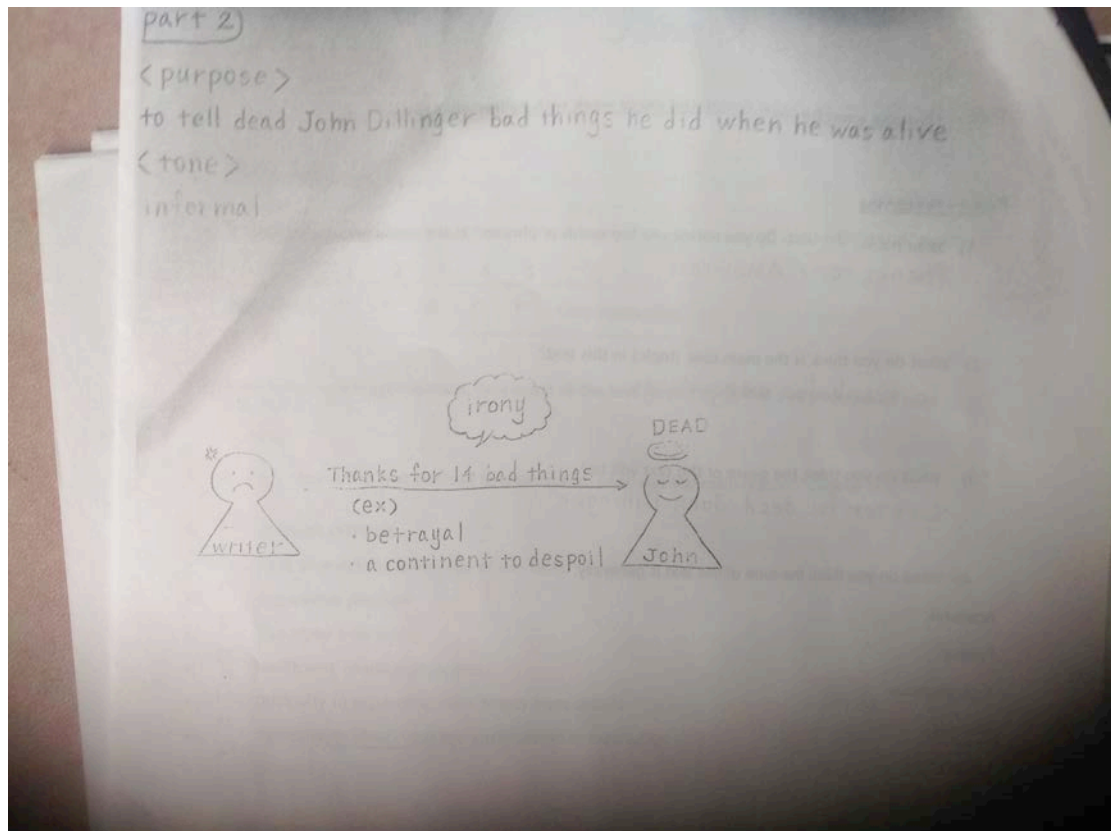
#### Example: Student A



#### Example: Student B



**Example: Student C (poem)**



**Example: Student C (recipe)**

