Collaborative Colour-coding for Academic Paragraph Writing

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Abstract

We report on collaborative action-research at an English programme at International Christian University in Japan. Specifically, the study aims to help Japanese learners of English write a unified and coherent academic paragraph for a research essay by developing materials aligned to a pedagogical design. We have identified a persistent problem in students' writing, i.e. a lack of the essential elements within a body paragraph. In order to create a more effective bridge between students' knowledge of how to write a paragraph and their performance, material has been developed that highlights eight essential elements of an academic paragraph. In an attempt to assess the effectiveness of different uses of the material, various types of data were collected which include self and peer paragraphs, their interaction during the peer review activity, and teacher observations. The main preliminary findings are that the material provides a platform for an effective peer review as well as for teacher-student conferences, and it encourages students to write independently.

Since it was first proposed in 1972 by Murray, the process writing approach has been widely advocated as an effective way to develop students' writing skills both by ESL/EFL educators and researchers (Flower & Hayes, 1981; Nation, 2009; Raimes, 1998; Reid, 2001). Its central tenet is that students' writing and thinking skills develop as they go through the cycle of receiving feedback from peer writers, as well as teachers, and revising their drafts. Arndt (1992) emphasizes the significance of feedback as a "central and critical contribution to the evolution of a piece of writing" (p.91). One of the main contributions of the approach is that it brought collaborative learning in the form of peer feedback into the learning of writing which tends to be seen as a highly individualistic activity by students. Lundstrom and Baker (2009), for example, found that students who provided feedback showed more improvement in writing than students who simply received feedback. Moreover, Tsui & Ng discovered that students benefited more from reading peers' writing than receiving comments from them. In addition to these studies, numerous other studies provide empirical support and validate peer review as an effective part of the teaching and learning of writing (Diab, 2011; Mulder, et al., 2014; Rollinson, 2005; Storch, 2009).

The process writing approach, however, is not without problems in its implementation. Its emphasis on content and development of thinking, in other words, what the student has written, often gives a secondary focus to "how it is written", including the use of the rhetorical conventions and language usage. For instance, Reid (2001) argues that the lack of attention to grammar and structure does not contribute to the quality of the products. This is apparent even in the explanation of how to write a paragraph. Purdue Online Writing Lab explains a paragraph as "a collection of related sentences dealing with a single topic," which should contain the elements of unity, coherence, a topic sentence, and adequate development which are overlapping characteristics. In *The Student Guide to Writing in the ELA*, the main writing textbook for the students in this study, a model of a paragraph is shown with "topic sentence" and "conclusion" highlighted. Furthermore, it explains that the characteristics of a unified and coherent paragraph are "1) all sentences are related to the topic of a paragraph, 2) key words are repeated, 3) pronouns [often combined with a noun] are used to link sentences, and 4) transitions which show relationships between ideas are used (pp. 27-28)." As these examples show, it is common that writing textbooks clearly state the general structure of a paragraph, but the explanation of how a paragraph should be written is rather limited. The fact that there is not enough information about how to write a paragraph can be problematic, especially to novice writers.

As a result, students' drafts continuously show an array of weaknesses in terms of how they are written: mismatch between the topic sentence and the concluding sentence, lack of effective transition expressions, careless word choices, ineffective use of sources, including the lack of explanation of the source, and the lack of the writer's interpretation, evaluation, and comments on the information from the source. An attempt to help students write better paragraphs led us to the current action research[1]. The study chose paragraphs as the unit of investigation because it is expected that if students master skills for producing a paragraph, they are considered well equipped to write longer units such as essays (Hinkel, 2004).

The Study

This collaborative action research began in 2017, but the current report mainly focuses on the study that took place in the spring term of 2018. In this iteration, nineteen first-year students of a Stream 3 section (upper intermediate) taking Academic Reading and Writing (ARW) in the English program participated in the research. The students had already been introduced to how to write an academic paragraph in their writing textbook, and were able to articulate what comprises a paragraph. The following is the procedure of assisting these students to understand and write a unified and coherent academic paragraph for a research essay. Written texts, classroom observations, and video-recordings of student interaction served as a triangulated data set the researchers used to inform the inquiry.

Paragraph Evaluation

As students were about to work on an 800-word essay assignment, the teacher gave an online homework assignment which asked them to evaluate a paragraph by answering the following two questions: (a) *Is this a good paragraph? Explain your answer*, and (b) *How could this paragraph be improved? Give specific advice*. The paragraph was chosen from an essay a previous student had written, because it is a quite well written paragraph but still has areas that need to be improved. Thus, the researchers assumed that using an authentic paragraph would work effectively as a meaningful model for students to utilise. Out of the 19 students, five of them evaluated the paragraph as "good", whereas 14 students evaluated as "not good". As for the responses to the second question, the students identified various areas that needed improvement as shown in Figure 1.

Areas of Peer Feedback	Number of Comments
Topic sentence	6
Concluding sentence	3
Supporting sentences (information from the sources)	11
Supporting sentences (explanation of the information from the sources)	8
Transitions	5

Figure 1. Areas of student comments

It should be noted that apart from the five students who claimed that using more transition expressions would improve the paragraph, most students were suggesting that content should be changed in some way. The following is a typical comment.

> I think this paragraph would be better if the writer put more information about male dominance, not just ending the paragraph like below. I do not think the conclusion is strong enough comparing to all the points that the writer made in this paragraph. By adding more information about male dominance, and maybe solution for it would make a stronger conclusion, which leads the paragraph to be even better.

Although this comment may be relevant and could be used to develop the content of the paragraph, if it were given in an actual peer review activity, it may be difficult to utilize. Even if the writer agrees with the advice, it may not be possible to find further information about male dominance, or to find a solution. Therefore, the writer may end up not making any further revisions because they could not make use of the peer feedback. In other words, suggestions to change the content show what the readers want to read, but may not be the most useful advice for improvement of the draft from the writer's point of view. In fact, there are studies that investigate reasons why students do not adopt peer comments (Liou & Peng, 2009; Tsui & Ng, 2000; Zhang, 1995). Liou & Peng (2009), for example, discovered that

some student writers are not confident about providing useful feedback and feel reluctant to provide critical feedback to their peers' writing. They also found that student writers adopt teacher feedback more than feedback from their peers. These findings do not necessarily argue against the general effectiveness of peer feedback, but they question the value of peer feedback as a way to improve a particular draft.

While the majority of student comments were concerned with how to improve the content of the paragraph, from the teacher's point of view, this paragraph has more significant problems that should be brought to the writer's attention for subsequent revisions. The researchers posited that these revisions include changing the first sentence to show the writer's opinion rather than stating a summary of the research findings, and more importantly, including the writer's interpretation of the information rather than only using paraphrases or quotes. The students' performance on this homework assignment informed the researchers of the importance of helping students become aware of how a paragraph is written. To this end, the researchers developed material using the model paragraph to highlight eight elements of a unified and coherent academic paragraph in colours. These eight elements cover essential functions and types of information that a well-written body paragraph in a research essay contains. Different elements were identified for other types of paragraph, such an introductory and concluding paragraphs. The researchers decided, however, that introducing the most generic body paragraph for beginning writers would be most useful. By directing students' attention away from the content of a paragraph to the elements, it was expected that students would be engaged in a different kind of discussion during a peer review activity that might lead to more relevant and successful revisions of their drafts.

Introduction of the Colour-coded Model

In the following class, a handout with the instruction for group work was distributed (Figure 2). The main part of the handout consisted of the same paragraph that the students evaluated for homework, but the paragraph was colour-coded to serve as a model for students when writing paragraphs. In small groups, the students were asked to work out what each colour meant. With some elicitation from the teacher, they were able to name the eight elements of an academic paragraph. See Figure 3.

Colour-coding for Paragraph Writing

Elements of a Paragraph for a Research Paper

1. Identify the different elements of this paragraph.
2. Evaluate each of the elements.

Red =	**Maroon =**	**Orange =**
Purple =	**Pink =**	**Blue =**
Green =	Grey =	

Males tend to appear more in advertisements than females. Stephanie Paltzer and Adrian Furnham, a psychologist and Professor of Psychology at University College London, conducted a study in which they observed whether there is a predominance of males or females in East Asian television advertisements. They concluded that the former appear more frequently in advertisements than the latter (cited in Prieler, Hagiwara and Ivanov 29). They also found out that there are only 3 out of 70 studies that show there are advertisements with more female voiceovers. Another study in Hong Kong and Japan showed that between 60 to 70% of their advertisements used male voiceovers (Prieler et al. 30). Shel Silverstein analyzed that more males are used for voiceovers than females because "Voiceovers are interpreted as the 'voice of authority' in giving advice and recommendations, a quality that women are presumed to lack" (qtd. in Prieler, Hagiwara, and Ivanov 30). The tendency of more males appearing in advertisements than females relates to the idea of male dominance.

Figure 2. Colour-coded model paragraph handout

Red = main idea
Maroon = authority/ introduction of the source
Orange = verb showing what the source does
Purple = direct quote
Pink = transition expressions
Blue = in-text citation in MLA
Green = paraphrase of the information from the source
Grey = the writer's interpretation, comments, and evaluation of the evidence

Figure 3. The eight elements of an academic paragraph

The students were then asked to evaluate how well the writer presented the elements in the model paragraph. Based on the observations of the researchers as well as the recorded group discussions, it became clear that the students' comments about the paragraph when they were evaluating the colour-coded model were different from those when they were evaluating the non-colour-coded paragraph. Firstly, many students, upon noticing the missing colour, grey, discussed what the writer could say about the information from the sources. They also had more focused discussion on where a transition expression is necessary because the lack of pink clearly shows the necessity for one. In addition, some compared the three maroon

highlights and discussed whether the third one needed more information than the other two. From these differences it was inferred that the colours seemed to help students analyse the paragraph: looking at the paragraph element by element, looking at one element in relation to other elements, such as in-text citation (blue) follows information from the source (green or purple), and looking at the order and balance of the elements, such as too much personal opinion (grey) with little support (green or purple). In short, the students were discussing how the paragraph was written as a whole, rather than making random comments on specific points.

Collaborative Peer Review

In the following class, which took place in a computer room, the students colour-coded the paragraphs they wrote for the essay using Googledocs. This was done as a peer-review activity in pairs. They were instructed to colour-code the paragraphs together, then produce an agreed upon revision plan. The researchers had access to all of the students' Googledocs which allowed them to monitor the pair work. Further, in order to analyze peer interaction closely, one volunteer pair was video-recorded during the activity.

Figure 4 shows the comparison between student A's first draft of a paragraph which was colour-coded during the peer review and the revised paragraph after the peer review. The revision points the pair agreed upon were (a) *look for the information on the developing countries, and modify the main idea (red) to fit the evidence (green) accordingly*, and (b) *add the writer's reaction to the information from the source*. The revised paragraph shows improvement in that the writer incorporated the missing colour of grey in the paragraph. It is not clear why the student did not take up on the first revision point, but it can be surmised that adding his own interpretation was more feasible than finding new information and changing the main idea sentence.

Japanese curiosity rate is quite low among developed countries. According to PIAAC (Programme for the International Assessment of Adult Competencies) which was conducted through OECD countries such as U.S.A, Sweden, Spain and so on, it showed that Japanese curiosity level was the 23th out of 24 countries. In the survey, one of the information which we can get from the survey was asking for attitude of learning new things. It pointed out that the number of Japanese who have curiosity is less than other countries. Also, surprisingly, when it comes to comparison between Japan and Sweden, which have the highest rate of curiosity in the survey. It suggested that 20-year-old Japanese curiosity level is same as 65-year-old Swedish curiosity. Overall, it could be said that Japanese curiosity level tend to be remarkably low in developed countries. Next chapter will focus on how to break away from the current state of this.

Japanese people's curiosity is quite low among developed countries. According to PIAAC (Programme for the International Assessment of Adult Competencies) which was conducted through OECD countries such as U.S.A, Sweden, Spain and so on, it showed that Japanese curiosity level was the 23rd out of 24 countries. In the survey, one of the information which we can get from the survey was asking for the attitude of learning new things. It pointed out that the number of Japanese who have curiosity is less than in other countries. Also, there is another disappointing data when it comes to comparison between Japan and Sweden, which have the highest rate of curiosity in the survey. It suggested that 20-year-old Japanese curiosity level is same as 65-year-old Swedish curiosity. Overall, it could be said that Japanese curiosity level tends to be remarkably low in the developed world. These data seem quite shocking for Japanese people. Next chapter will focus on how to break away from the current state of this.
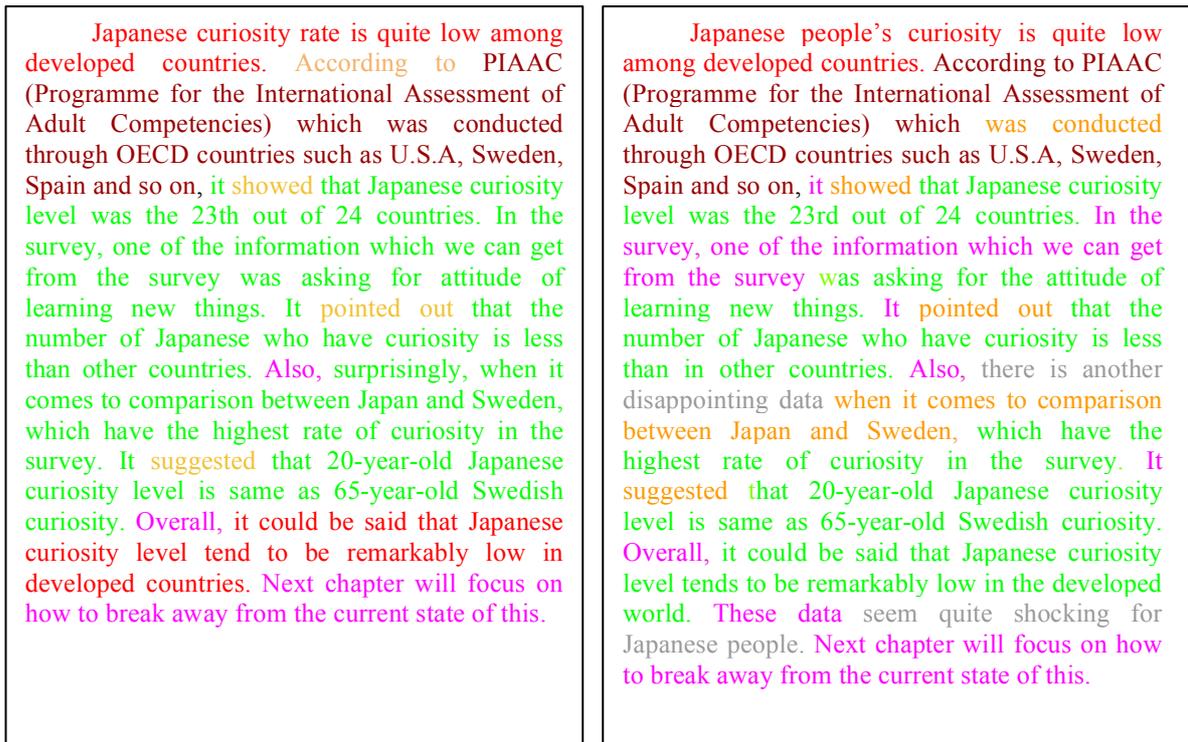
Figure 4. Comparison of the paragraphs before/after peer review written by student A[2]

Figure 5 is a comparison of the before and after paragraphs written by student B. While she was colour-coding the paragraph with her partner, she exclaimed, "Oh, my paragraph has so much grey!". This comment shows her realization that she had a lot of opinions but they would need to be supported by evidence, which naturally became the agreed upon revision point. In her subsequent draft, however, she abandoned the original paragraph, and wrote a completely new paragraph with a new topic sentence. Interestingly, when the researchers colour-coded her "revised" paragraph, the colours showed the same pattern as her first draft. The student may think that the revised paragraph is better because she made changes to the content, but the colour-coding points to the weaknesses of the paragraph. The balance among the elements in terms of their amount is a good example of a problem; the paragraph has too much of the writer's opinion in grey that is not supported by evidence in green. If the teacher had had a tutorial with the student, the teacher would have been able to discuss how to write more colour-balanced paragraphs. Such a tutorial that engages students in reflection on how they write could contribute to the long-term development of the writer.

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[2] The "before" paragraph on the left was colour-coded by the students whereas the "after" paragraph on the right was colour-coded by the researchers. Therefore, there are some areas that are coded in different colours while the content is the same.

There are several benefits for Japanese students to study abroad in a non-English country. First, they can learn something related to their future jobs. One of my friends who wanted to be a teacher studied abroad in Finland where has one of the best education in the world, so he got to experience Finnish school education and compare with Japanese one, which will help him to be a better teacher. Second, it is very meaningful to learn the third language because the more language people know, the more accurate information they will get. Maybe some people think English is enough because much information is translated into English. However, the quality of accuracy is lowered. Nowadays, people have easy access to the internet, so just having much information does not make a huge difference. What is more important is the accuracy of the information, and third language enable people to have more exact information than just translated one. These are the benefits that people can have from the experience of studying abroad in a non-English speaking country.

It is essential to know values and ways of communication in different cultures. In the today's globalized society, it is almost impossible to avoid encountering different cultures even if living in only Japan for the entire life. According to Japanese Ministry of Health, Labor and Welfare, the number of foreign workers in Japan has been rapidly increasing and in 2017, it reached 1,200,000. Therefore it is even more likely to have foreign colleagues when current high school students become working adults, and then cross-cultural understanding will be almost necessary. The experience of living in a different culture helps them to have a fundamental sense of cross-cultural understanding. Students tend to experience more different and unexpected cultures in non-English countries than in English speaking countries. Since many Japanese students know English, it happens more often for them to confront the information about English speaking countries in Japan, so it is more hard to know about non-English speaking countries, which means those countries are more likely to have unexpected cultures for Japanese people. Hence, cross-cultural understanding is very crucial for Japanese high school students and studying abroad is a good opportunity for them to build fundamental sense of it.
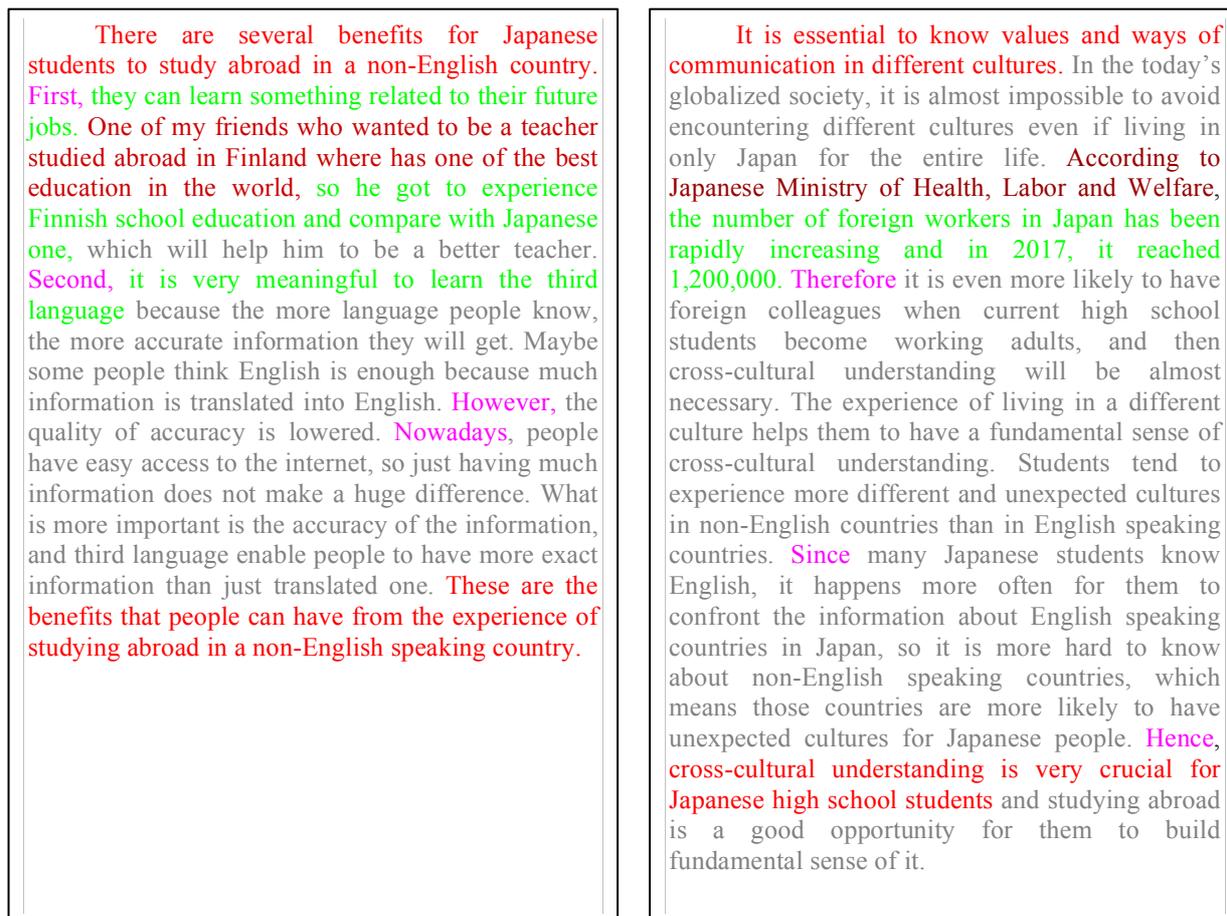
Figure 5. Comparison of the paragraphs before/after peer review written by student B[3]

Insights Gained

Different uses of the material in various class settings throughout the research confirmed multiple benefits that are offered by the use of colour-coding as part of the peer review activity. In the traditional peer review, each student plays either the role of a reader and gives feedback, or the role of a writer and receives feedback. However, colour-coding itself can be done collaboratively, and the fact that both the reader and the writer can and should agree on the colours creates a common platform on which they can again collaboratively decide how to improve the paragraph. This could help prevent a problem reported in the study of Allen and Katayama (2016) that less proficient students shy away from offering feedback. The collaboration of colour-coding could remove this obstacle to create a more fruitful peer review activity.

Another encouraging outcome is that some students reported that they started colour-coding their writing in courses outside of the English programme in which writing

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[3] The "before" paragraph on the left was colour-coded by the students whereas the "after" paragraph on the right was colour-coded by the researchers.

support is scarce. If colour-coding assists students to write and evaluate independently with more concrete awareness of how a paragraph should be written, it could be a strategy they could use for the rest of their academic life.

Other insights gained from the action research are summarized below.

1. The colour-coded model paragraph enables teachers to provide more detailed, more nuanced, and more helpful explanation as to how to write a unified and coherent academic paragraph.

2. Providing the colour-coded paragraph as a model leads to higher-quality first drafts.

3. The colour functions are easily available to students who write online, and do not require any special ICT knowledge or skill.

4. Colour-coding activity contributes to various forms of collaborative learning in which the focus is on how a paragraph is written.

5. Colours encourage students to see academic paragraphs in terms of the amount, balance, and order of the elements.

6. Colour-coding of students' own writing before tutorials creates a clear focus for student-centered discussion.

7. Colour-coding highlights not only areas to improve for a particular writing assignment but also areas that the writer needs to be aware of for long-term development as a writer.

Future Directions of the Research

There are several directions this action research could develop into. One area that deserves further inquiry is the types of peer feedback colour-coding generates, and how much of the feedback on how to write a paragraph is actually adopted by peer writers. Also, it would be interesting to investigate whether collaborative colour-coding and individual colour-coding lead to different types of feedback and outcomes.

Another direction the research could take is related to the flexible use of colour-coding in the process of writing, whether the writer is composing a first draft, giving feedback to peers, or having a tutorial with a teacher. Firstly, it seems obvious that colour-coding could be utilised to help students write better introductions and conclusions in an academic essay. Not only could it help students to write discrete introductions and conclusions, but it would also help students to create better coherence throughout the essay by connecting elements of the introduction, the conclusion, and the body paragraphs. For example, the plan of development in the introduction, the topic sentences in the body paragraph, and the summary of the essay in the conclusion are three connected elements, and therefore the assigned colours should help the students evaluate to see if they have coherent relationships.

With more teachers utilising the material with different groups of students at different stages of the writing process, their accumulated experience will shed light on the effective use of the material and the approach to teaching academic writing to the students in our programme.

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