Paper title: The Usefulness of a Suggested Paradigm for Improving Paragraph Coherence

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Abstract
This study aims to explore the effectiveness of a paradigm to teach native Cantonese-speaking university students the hierarchical structure of expository prose to improve paragraph coherence. Most of the diagnostic argumentative essays the participants in this study wrote in the course were incoherent, failing to meet readers’ expectation of “topic maintenance” (Connor & Farmer, 1985), nor did the essays show any of the progression patterns, as identified by Lautamatti (1987). Above all, the students seemed unaware that most English expository texts are characterized by a hierarchy of ideas. Accordingly, a paradigm in which causation or aspect constitutes major text structure, was devised. Minor elaboration skills (e.g., definition) were suggested for lower-level ideas. The paradigm was first introduced in two lessons of two hours each and then reinforced through two individual teacher-student advising sessions, in which a three-layer mind map was used to demonstrate the thinking process of generating a hierarchy of ideas.

The experimental group (75 participants) scored significantly higher marks in Discourse Competence (DC) and in Task Fulfillment (TF) than did the control group (75 participants) in the end-of-course writing examination. Findings from questionnaires suggested that most participants found the paradigm conceptually useful. However, it was difficult to put it into practice for lack of adequate ideas and for unfamiliarity with writing deductively, which might arise from their “employing a rhetoric and a sequence of thoughts” (Kaplan, 1966, p.4) typical of their L1 writing.
Introduction

Many EFL students who have a lower level of English proficiency seem unable to apply to their own essays the elaboration skills they have studied, possibly because they lack knowledge of text structure in relation to the elaboration skills appropriate for different levels of ideas. This study aims to explore the effectiveness of a paradigm to teach native Cantonese-speaking university students the hierarchical structure of expository text so that they can improve paragraph coherence. Most of the diagnostic argumentative essays the participants in this study wrote in the course were incoherent, failing to meet readers’ expectation of “topic maintenance” (Connor & Farmer, 1985), nor did the essays show any of the progression patterns — that is, parallel progression, sequential progression and extended parallel progression — as identified by Lautamatti (1987). Above all, the students seemed unaware that most English expository texts are characterized by a hierarchy of ideas. Although many composition teachers stress the use of an outline to remind student writers to return to the higher levels of ideas, the making of an effective outline appears to be a very difficult task for Cantonese-speaking L2 learners of English having weaker English proficiency, especially with respect to the ability of writing a general sentence that can succinctly state the central argument point before they start reasoning. That a number of L2 learners of English have great difficulties employing the sequence of thoughts typical of English academic writing might arise from their “employing a rhetoric and sequence of thoughts” (Kaplan, 1966) that they are familiar with through their writing in Chinese. In order to attack that problem, the present researcher has devised a paradigm to help students differentiate first-, second-, and third-level ideas appearing in a paragraph.

The subsequent sections of this paper include:

- Literature Review
- Data Analysis
- the Context
- Research Questions
- Findings
- Discussion and Findings
- Methodology
- Conclusion

Literature Review

Cohesion and coherence

Although cohesion and coherence have previously been defined by researchers in various ways, in general most researchers hold the view that cohesion mainly concerns the use of explicit language devices to connect ideas in a semantically meaningful way, whereas coherence at paragraph level is mainly concerned with the connectedness of supporting sentences in relation to the development of the central idea of a paragraph for the meaningful interpretation of the text by readers. For example:

- Enkvist (1990) regards cohesion as “the term for overt links on the textual surface...” (p.14).
- Bell (1991) defines cohesion as “the mutual connection of components of surface text” (p. 165).
- Halliday and Hasan (1976) define the cohesive quality of a text as the resultant force of both lexical and grammatical links.
Five major classes of cohesive devices have been specified by Halliday and Hasan (1976):

- reference (pronominal, demonstrative, and comparative reference),
- substitution,
- ellipsis,
- conjunction, and
- lexical cohesion (reiteration, synonymy, and hyponymy [that is, showing the relationship between a generic term and a specific instance of it]).

On the other hand, Yule (1996) defines coherence as the ways to connect discourse, but the ways are less tangible and reside in how texts are interpreted by readers. Bell (1991) defines cohesion as “the mutual connection of components of surface text” (p. 165). Enkvist (1980) defines coherence as “the quality that makes a text conform to a consistent world picture and is therefore summarizable and interpretable (p. 14).

Coherence is conceptualized by Enkvist (1990) as subsuming three dimensions:

- cohesion (lexical and grammatical links),
- interpretability (semantic relationship between old and new information), and
- justifiability (logic).

As can be seen from Enkvist’s (1990) view of coherence, cohesion constitutes only a part of the broader term coherence; as such, a text could be cohesive but still not be coherent (e.g., Connor, 1984).

Different from Enkvist’s (1990) notion of three levels of coherence (i.e., cohesion, interpretability, and justifiability), Gao (2012, p. 25) constructs a model of coherence for argumentation based on his synthesis of six linguistic theories1. The model includes three facets of coherence:

- cohesion (meaning “textuality produced by lexical and grammatical ties”),
- topical structures (meaning “the semantic relationships between sequential sentences”), and
- Toulmin’s model (meaning “an anti-syllogism logical model for claim strengthening”).

Among the various definitions of what constitutes a piece of coherent writing, the present researcher adopts the definition provided by Lautamatti (1987). According to Lautamatti (1987), to form a coherent piece of discourse, sentences must be related to the main idea being discussed – that is, the discourse topic – directly and indirectly, based on the development of subordinate ideas (or sub-topics), which in turn relate to the discourse topic. The way in which written sentences in a discourse relate to the discourse

topic and its sub-topics is termed Topical development of discourse (Lautamatti, 1987, p. 87). In other words, the development of the discourse topic within a piece of discourse “may be thought of in terms of the succession of hierarchically-ordered sub-topics, each of which contributes to the discourse topic” (p.87).

Lautamatti (1987) distinguishes three types of topical progression:

- parallel progression (where “the sub-topic in a number of successive sentences is the same”, p. 88);
- sequential progression (where “the predicate or the rhematic part of one sentence provides the topic for the next [sentence], p. 88); and
- extended sequential progression (where “parallel progression does not proceed directly; rather, the parallel progression extends over a piece of text based on sequential progression”, p. 99).

In the sample texts she used to illustrate topical progression, she distinguished three types of subjects:

- the mood subject (i.e., a subject that is located in the subject position of a sentence),
- the topical subject (i.e., a mood subject that relates to the discourse topic), and
- non-topical subject (i.e., a subject that is not related to the discourse topic).

Lautamatti (1987) illustrated the three types of subjects using the following sentence:

“Biologists suggest that newborn children are...”

Lautamatti (1987) explained:

This sentence comes from a piece of text that has the discourse topic newborn children. Here the subject of the sub-clause is the topical subject of the sentence, while the subject of the main clause is non-topical. (p. 89)

The concept of topical progression seems difficult for EFL students to apply when attempting to write a piece of coherent argumentative essay probably because of the complexity that a topical subject can appear in various possible positions in a sentence. As Lautamatti (1987) pointed out,

In authentic discourse, however, matters are more complicated. First, discourse may consist of complex sentences of many types, with different subjects in different parts of the sentences. Second, the subject of the main clause need not be the topical subject (i.e., it need not represent the discourse topic) and third, the main clause may be thematically marked. (p.89)

It appears that the three types of topical progression serve as a useful tool primarily for analyzing the coherence of a text rather than for guiding a student writer’s thoughts while he or she is engaging in the actual writing process. When a student is writing, his or her primary concern is probably the generation of writing ideas, rather than the purposeful arrangement of topical subjects in successive sentences for achieving coherent development of the discourse topic. Furthermore, it is doubtful whether students who have a low level of English proficiency are capable of manipulating the subject position of a sentence to maintain the flow of the discourse topic.
In view of the possible difficulties encountered by EFL students, especially those who have a poor command of English, to use the three patterns of topical progression as a means to achieve paragraph coherence, the present study devises a paradigm that can perhaps cater to student writers who are deficient in English grammatical knowledge by focusing on the semantic relationship between higher- and lower-level ideas rather than on the types of sentence subjects from a syntactic point of view. In the writing paradigm, certain elaboration skills are designated as the main organizing principle of a paragraph, and some other elaboration skills are designated for the use of further elaboration of higher-level ideas. Similar to Lautamatti's (1987) notion of topical development, this writing paradigm also views writing ideas as being hierarchically ordered with topics and sub-topics. However, the focus of the paradigm of this present study is on how to generate sub-topics rather than on manipulating various types of sentence subjects to achieve paragraph coherence. Before student writers can manipulate sentence subjects to achieve coherence, they need to know what sub-topics can be used in their arguments in the first place.

In fact, a large number of EFL students possessing an insufficient level of English proficiency still struggle to find sub-topics to be used in their arguments after completing a topic sentence. In view of that difficulty, this paradigm intends to approach the issue of developing EFL students' writing coherence from a semantic perspective rather than from a syntactic one, like the three types of topical progression delineated by Lautamatti (1987). In essence, the present research focuses on teaching students how to generate sub-topics through the use of a paradigm that advocates the use of various elaboration skills to guide students through the idea-generating process. Specifically, this paradigm suggests that the controlling word in a topic sentence -- (i.e., the first-level idea) -- could be split into two sub-topics to form the second level of ideas. The two sub-points are related to the controlling word in one of the following three ways:

a) constituting the causes,
b) constituting effects, or
c) constituting two aspects of the controlling word appearing in the topic sentence.

The third-level ideas should provide further elaboration of the two sub-points at the second-level by making use of such additional elaboration skills as providing details, examples, research findings, and definitions. One positive benefit of this writing paradigm, as seen by the present researcher, is that it may act as a scaffold when a student writer is searching for second- and third-level ideas after writing a topic sentence.

Pedagogical studies investigating the teaching of coherence
The issue of teaching paragraph coherence seems to constitute great learning difficulty for EFL students, especially those with weak English proficiency. That difficulty might result from a lack of knowledge of text structure as well as a deficiency in the ability to organize ideas hierarchically, which in turn would require the skill of identifying the semantic relationships of ideas. Several approaches have been in use to improve students' ability to write academic essays coherently. One of the approaches is to create
Theme-Rheme progression (Danes, 1974). Theme is “the point of departure for the message...the element the speaker selects for ‘grounding’” (Halliday, 2014, p.83). Theme is followed by Rheme, which is defined as “the reminder of the message, the part in which the theme is developed” (Halliday, 2014, p.64). The concept of Theme-Rheme seems to bear a close resemblance to Lautamatti’s (1987) topical development in written discourse. A number of studies have been conducted to investigate the usefulness of developing an awareness of Theme/Rheme on paragraph coherence (e.g., Hawe & Thomas, 2012; Ho, 2009; Lee, 2002; Thompson, 2014; Rørvik, 2012; Wei, 2014). Wei (2015) experimented with an instructional package teaching Chinese EFL students the concepts of Theme and Thematic Progression (TP) to raise their awareness of how information and ideas should flow in a text for higher readability. Wei (2015) concluded that “[c]oherence is both text-based and reader-based, which could be promoted by appropriate thematic choices and TP [Thematic Progression] patterns...” (p. 185). Another approach adopted by researchers consists of improving the transition between sentences – that is, the local level of coherence. Sui and Chen (2010) believe that it is essential that L2 writers be taught cohesive devices and a clear way of thinking, which could “create a proper semantic space which makes the writing smooth and keeps the relevance to the subject” (p.10). In their study, Sui and Chen (2010) focus on three methods of transition – connectives, lexical cohesion and reference. Lee (2000) defines local level of coherence as the “interconnectedness between sentences and clause units, such as references, conjunctions, and lexical cohesion” (p. 352). Instead of limiting the teaching only to cohesive devices, Lee (2000, 2002) adopted a reading-and-writing approach to help first-year EFL students to move away from the lower level of a text and to sensitize them to how coherence is achieved in various genres. Lee (2000) concludes that coherence is a teachable topic, but for pedagogical effectiveness, reading and writings should be integrated (p.355). The participants in Lee’s (2002) study seemed to improve in coherence based on the results of topical structure analysis and independent readers (p.148).

In addition to the pedagogical research into discourse coherence, studies measuring coherence in students’ writing abound. Notwithstanding the difficulty of reaching a consensus of the overall definition of coherence (Grabe & Kaplan, 1996, p.67), measuring the coherence in a piece of writing has been a topic of interest (e.g., Connor & Farmer, 1990; Crow, 1983; Danes, 1974; Lautamatti, 1978, 1990; Redeker, 1990; Schneider & Connor, 1990; Stubbs, 1983; Todd, Thienermoolp, & Keyuravong, 2004). In Todd, et al.’s (2004) study, topic-based analysis was used as a tool to evaluate the coherence of a text rather than for other pedagogical purposes. The procedure involves identifying key concepts in a text, distinguishing the relationships between these concepts, linking the relationships into a hierarchy, and mapping the text onto the hierarchy. According to Todd, et al. (2004), there are two key relationships serving to link concepts: a. inclusion relationship, covering a range of superordinate–subordinate relationships, and b. cause–effect relationship.

The authors used a diagram to show the hierarchy of ideas in their analysis of participants’ writing samples. The use of graphic visualization was also adopted by Ummels et al. (2015) using concept mapping, in
addition to graphic visualization, to tackle problems encountered when teaching "coherent conceptual understanding" (p. 558).

Such techniques as concept-mapping and graphic visualization are used in the writing paradigm of this present study to help student writers visualize the semantic relationship between first-, second-, and third-level ideas. In this paradigm, the ideas of first and second levels are characterized by generality whereas those of the third-level are characterized by specificity. In other words, the topic sentences (first level) and mini topic sentences (second level) are general statements, while further elaborations (the third level) consist of particular details (see Appendix A). Hopefully, the ability to differentiate general statements from specific details can help student writers improve their ability to write coherently. To investigate the effectiveness of teaching the writing paradigm proposed in the present study in improving students' writing coherency, the following research questions are set:

**Research questions**

1. Will the students who have been taught the writing paradigm score significantly higher marks than those who have not in two measures -- paragraph coherence and content -- at the end-of-course writing examination?

2. What are the views of the student writers who have been taught the writing paradigm concerning the usefulness of the writing framework?

**The course "English For Academic Purposes"**

The course was divided into two parts -- EAP Part I and EAP Part II. Each part involved 60 teaching hours, spanning one 12-week semester. There were at most 25 students in each EAP Part I and Part II class. In EAP Part I, students were required to write a 500-word argumentative essay, which involved two drafts before submission of the final version. In the last lesson of EAP Part I, there was an in-class assessment, which included a reading test and a writing test. In the writing test, students were required to write a 500-word argumentative essay incorporating some of the external sources provided.

EAP Part II students were required to produce a term paper, which was also an argumentative essay, but 100 words longer than the essay in EAP Part I. The term paper also involved two drafts before the final submission. Similar to the in-class assessment in EAP Part I, the end-of-course examination of EAP Part II also included a reading test and a writing test, similar in format to those in EAP Part I, but the essay was 600 words long.

**Features of the paradigm**

Three major elaboration skills -- i.e., causes, effects, and aspects -- are suggested as the organizing pattern of a paragraph to be used at the second level, while minor elaboration skills (e.g., definitions, examples,
details, statistics, and anecdotes) are suggested at the third level. While there may be any number of levels depending on the complexity of the topic, the division into three logical levels is probably sufficient for students with limited English language proficiency. Another feature of the paradigm is that the framework incorporates in one single paragraph two or three sub-sections derived from the same category of major elaboration skills – i.e., two causes, two effects, or two aspects (e.g., mental vs. physical well-being; past vs. present situations).

The Teaching of the paradigm
The writing paradigm was introduced to the participants during two two-hour lessons. With the help of a handout showing a mind map (Appendix A) consisting of three layers of ideas as well as three sample paragraphs (Appendix B), the participants were introduced to the writing paradigm. Subsequent to the teaching of the paradigm, the participants were instructed to use the paradigm taught to make an outline for their first writing assignment, which was an argumentative essay. The participants submitted the second draft of their essays to the class teacher for comments after they had received feedback from their peers in a peer-feedback session. During the teacher-student consultation session, which lasted about fifteen minutes, incoherent paragraphs such as those full of repetitive ideas or ideas not related directly to the topic sentence were pointed out to each student for him/her to make corrections. To help a student think of the second-level ideas, the teacher (i.e., the present researcher) first drew a mind map and put the controlling word of the topic sentence provided by the student in the first-level box for students to visualize the hierarchy of ideas. Then the student was prompted to think of two causes, two consequences, or two aspects. If the student were unable to come up with two ideas, the teacher would suggest the two ideas for his/her reference. After the two ideas for the second level were agreed upon, the student was reminded that, for the third level, he or she should provide examples, details, statistics, and so on.

Scope of the present study
While Gao (2012) regards coherence as transcending paragraph-level unity and includes discourse unity (p.16), this present study will examine coherence at paragraph level only. That is, coherence of the whole essay will not be examined; neither will the linguistic devices used for building cohesion.

Methodology

Participants Involved
The participants consisted of 152 university students taking the one-year course entitled “English for Academic Purposes” (EAP) offered by the English Language Centre (ELC) at the City University of Hong Kong in 2014. Half of the participants constituted the experimental group, the other half the control group. The former were composed of three EAP Part I classes and one EAP Part II class taught by the present researcher, and the treatment was the teaching of the writing paradigm throughout the course. The latter involved students who took the end-of-course writing examination, but those students were taught by
teachers other than the present researcher.

Under the current placement system, student who score Level 3 in the subject English Language in the Hong Kong Diploma of Secondary Education (HKDSE) are required to take the one-year EAP course. Alternatively, students who score Level 4 can take the course University English, offered by the English Department. Students who do not attend the DSE, (e.g., students from Mainland China), are required to take the placement test offered by the ELC to determine whether they will have to take the one-year EAP course.

Research instruments

**Argumentative examination scripts**

The 76 argumentative essays written for the end-of-course examination by the experimental group (i.e., the four EAP classes who were taught the writing paradigm by the present researcher) were compared quantitatively with the 76 scripts written by the control to determine whether teaching the writing paradigm would improve students' scores on the end-of-course writing examination. The examination scripts of both groups were marked by the EAP teachers. A request was made to the General Office by the present researcher, with the approval of the program leader and of the Assessment Team, to retrieve from all the examination scripts the scripts written by the students in the four EAP classes taught by the present researcher in the 2014-15 term. The present researcher made another request to have access to 100 scripts from classes not taught by the present researchers. From those 100 scripts, 76 were generated by random sampling to be used as the control group.

In the end-of-course writing examination, students were required to write a 800-word argumentative essay incorporating some information from the excerpts of a few source articles. Students had the choice of either of two topics – one was to argue whether home schooling is the best option for children; the other was to argue whether using medical technology to extend human life has more advantages than disadvantages. The examination time was one hour and forty-five minutes.

**Marker training**

All the markers assigned by the department to score the examination scripts underwent a two-hour long marker-training session organized by the Assessment Team. The 76 scripts from the experimental group were scored by three markers—about one third of the scripts were marked by each marker. Similarly, for the control group, 76 scripts were scored by three markers—about one third (i.e., +/- 25) by each marker.

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2 The HKDSE examination is the only public examination in the new 3-3-4 education system introduced in Hong Kong secondary schools. Candidates’ results are labeled Levels 1, 2, 3, 4 and 5, with Level 1 being the lowest and Level 5 the highest. The candidates scoring at the highest level were awarded a score of 5**. To be eligible for admission to a government-subsidized degree program, the minimum requirement for the subject of English Language was set at Level 3.
Two of the three markers who marked the essays written by the experimental group also marked the scripts of the control group. Hence, the undesirable effect of a possibly low inter-marker reliability was minimized to a large extent, especially when considering that the formal 2-hour marker training session and the follow-up work of the marker trainer had been intended to ensure that a marker scored close to the benchmarks.

The questionnaire
To collect participants’ views of the writing paradigm, copies of the questionnaire entitled “Improving Paragraph Coherence” were distributed to the students in the experimental groups during the last lesson of the term.

Students (from the experimental groups) were told that the questionnaire was intended to collect their opinions about the effectiveness of the mind map they had been taught, in terms of improving their paragraph structure and generating more writing ideas. They were told that they could remain anonymous if they wished and that completion of the questionnaire was voluntary. A total of ten minutes was allotted for completing the questionnaire in class.

There were two foci in the questionnaire:
- The first focus concerned the participants’ views on the usefulness of the way the present researcher conducted the individual face-to-face consultation session (i.e., by using the student’s essay as the starting point to guide the student to apply the 3-layer mind map to her/his own writing).
- The second focus was concerned with eliciting the student’s views on the applicability of the writing paradigm to assignments in this course and to those in other courses.

Data Analysis

Argumentative essays

Measure 1: Mean Scores of the Measures
The raw scores of the essays from the experimental group and the control groups were analyzed using IBM SPSS Statistics 22 to compare the means of two components concerning the two groups:
- Discourse Competence (hereafter DC); and
- Task Fulfilment (hereafter TF).

The criterion of the mark for the first measure was largely based on paragraph coherence, whereas that for the second measure was primarily based on content. It was speculated that the writing paradigm would benefit students most noticeably in these two aspects, but especially in the aspect of paragraph coherence. Discourse Competence and Task Fulfilment (DC & TF), however, constituted only two of the four marking criteria. The remaining two, as previously noted, were Language Competence, which concerned grammar and vocabulary, and Source Integration, which concerned a student’s ability to cite external
sources using APA format.

**Measure 2: The Percentage of Participants Scoring Merely the Minimum Passing Mark of 2**

A mark of 2 out of 5 is the minimum passing mark for both Discourse Competence and Task Fulfillment. A quick glance at the 152 scripts collected, a score of 2 seemed to be the most commonly occurring value for both DC and TF. As such, a lower percentage of students scoring merely "2" should be a viable indicator that the teaching of the writing paradigm benefited the experimental group to some extent.

**Findings**

**a. Mean scores**

**Discourse Competence**

As can be seen in Table 1, the mean score of DC of the experimental group (M=2.99, SD=0.702) was significantly higher (t=-3.170, df=150, 2 tailed p=0.002) than that of the control group (M=2.64, SD=0.626) at the 99% confidence level.

<table>
<thead>
<tr>
<th></th>
<th>Group</th>
<th>Mean (DC)</th>
<th>SD</th>
<th>t value</th>
<th>df</th>
<th>2-tailed p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>2.99</td>
<td>0.702</td>
<td>-3.170</td>
<td>150</td>
<td></td>
<td>0.002*</td>
</tr>
<tr>
<td>Control Group</td>
<td>2.64</td>
<td>0.626</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at p<0.01

**Task Fulfillment**

As can be seen in Table 2, the mean score of TF of the experimental group (M=3.26, SD=0.772) was significantly higher (t=2.781, df=150, 2 tailed p=0.006) than that of the control group (M=2.91, SD=0.744) at the 99% confidence level.

<table>
<thead>
<tr>
<th></th>
<th>Group</th>
<th>Mean (DC)</th>
<th>SD</th>
<th>t value</th>
<th>df</th>
<th>2-tailed p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>3.26</td>
<td>0.772</td>
<td>2.781</td>
<td>150</td>
<td></td>
<td>0.006*</td>
</tr>
<tr>
<td>Control Group</td>
<td>2.92</td>
<td>0.744</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at p<0.01
a. The percentage of participants scoring merely the minimum passing mark of 2

**Discourse Competence**

As can be seen in Table 3, significantly fewer students from the experimental group (23.7%) scored merely the minimum mark of 2 than did the students from the control group (39.5%) for the measure of DC at the 95% confidence level (t=2.09).

**TABLE 3. Difference in the Percentages of Participants Scoring Merely the Minimum Passing Mark of 2 in Discourse Competency, as Shown by Proportional t test**

<table>
<thead>
<tr>
<th>Sample1</th>
<th>Sample2</th>
<th>CONFIDENCE LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1 76</td>
<td>N2 76</td>
<td>99% 95%</td>
</tr>
<tr>
<td>P1 23.7</td>
<td>P2 39.5</td>
<td>Z-VALUE 2.09 NOT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SIGNIFICANT</td>
</tr>
</tbody>
</table>

(Sample 1 = Experimental Group, Sample 2 = Control Group)

* Significant at p<0.05

**Task Fulfillment**

As can be seen in Table 4, significantly fewer students from the experimental group (14.5%) scored merely the minimum mark of 2 than did the students from the control group (26.3%) for the measure of TF at the 90% confidence level (t=1.81).

**TABLE 4. Difference in the Percentages of Participants Scoring Merely the Minimum Passing Mark of 2 in Task Fulfillment, as Shown by Proportional t test**

<table>
<thead>
<tr>
<th>Sample1</th>
<th>Sample2</th>
<th>CONFIDENCE LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1 76</td>
<td>N2 76</td>
<td>99% 95% 90%</td>
</tr>
<tr>
<td>P1 14.5</td>
<td>P2 26.3</td>
<td>Z-VALUE 2.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.96 1.64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOT SIGNIFICANT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOT SIGNIFICANT *</td>
</tr>
</tbody>
</table>

(Sample 1 = Experimental Group, Sample 2 = Control Group)

* Significant at p<0.1

**Questionnaire**

The findings below concern the respondents' views on the class teacher's use of a 3-layer mind map as a
tool to improve paragraphing in teacher-student consultations:

In the ratings reported below, "1" means "totally disagree", "3" means "neutral" and "5" means "totally agree":

*Question 1a -- During the experience of revising my essay, I became more aware of the importance of writing a coherent paragraph.*

The number of students choosing "4" accounted for 47.4% of all respondents, followed by 43.4% of respondents choosing "5".

*Question 1b -- During the experience of revising my essay, I became more aware of the importance of planning the elaboration before actually writing a paragraph.*

The number of students choosing "4" accounted for 47.4% of all respondents, followed by 43.4% of respondents choosing "5".

*Question 1c -- During the experience of revising my essay, I became more aware of the relationship between a topic sentence and the mini topic sentences (i.e., the first sentence for each sub-section).*

The number of students choosing "5" accounted for 48.7% of all respondents, followed by 39.5% of respondents choosing "4".

*Question 1d -- During the experience of revising my essay, I became more aware of the use of a mind map for generating ideas for each paragraph.*

The number of students choosing "5" and "4" are the same, each accounting for 32.9% of respondents.

*Question 1e -- During the experience of revising my essay, I became more aware of the organizing pattern(s) I can use to develop a paragraph (e.g., using causes, effects, comparison, contrast, or aspects).*

The number of students choosing "5" accounted for 46.1% of all respondents, followed by 44.7% of respondents choosing "4".

*Question 1f -- During the experience of revising my essay, I became more aware of various elaboration skills (e.g., examples, definitions) when I elaborate on a mini topic sentence.*

The number of students choosing "4" accounted for 48.7% of all respondents, followed by 42.1% of
respondents choosing “5”.

**Question 2a** — *The process of receiving my teacher’s written and oral feedback on the first draft of my essay helped me to improve the overall essay plan.*

The number of students choosing “4” accounted for 50.0% of all respondents, followed by 40.8% of respondents choosing “5”.

**Question 2b** — *The process of receiving my teacher’s written and oral feedback on the first draft of my essay helped me to improve the structure of a paragraph.*

The number of students choosing “5” accounted for 52.6% of all respondents, followed by 40.8% of respondents choosing “4”.

**Question 2c** — *The process of receiving my teacher’s written and oral feedback on the first draft of my essay helped me think of writing ideas more easily.*

The number of students choosing “4” accounted for 38.2% of all respondents, followed by 31.6% of respondents choosing “5”.

**Question 2d** — *The process of receiving my teacher’s written and oral feedback on the first draft of my essay helped me know how to write a coherent paragraph.*

The number of students choosing “4” accounted for 50.0% of all respondents, followed by 35.5% of respondents choosing “5”.

The findings reported concern the participants’ views on the applicability of the writing paradigm to the writing assignments in this course and in other courses:

**Q3a** — *Do you find the method of incorporating two sub-points of the same category (e.g., two “causes” rather than one “cause” and one “consequence”) in one paragraph easy to apply to your writing?*

The number of students choosing “yes” accounted for 80.3% of all the respondents; only 14.5% of respondents chose “no”.

**Q3b** — *Do you find the method introduced to you useful in improving the organization of your elaboration?*

The number of students choosing “yes” accounted for 90.8% of all the respondents; only 6.6% respondents
chose “no”.

Q3c—Would you consider using this method to organize a paragraph when handling writing tasks for future assignments?

The number of students choosing “yes” accounted for 92.1% of all the respondents; only 5.3% respondents chose “no”.

Q4—Do you currently still have problems elaborating an argument?

The number of students who chose “no” accounted for 61.8%, while 36.8% respondents chose “yes”.

It is, of course, possible that subjects chose their responses to make a favorable impression on the researcher rather than to reflect their actual reactions. However, the scoring was anonymous, so the individual was not associated with the responses.

The following findings are concerned with the main advantage of learning the writing paradigm as seen by the participants:

Q5—What do you think is the main advantage of the suggested method of building a coherent paragraph? (You may choose more than one response.)

The main advantage of the writing paradigm as seen by the participants was:

- The suggested pattern of organization (e.g., using “causes” as the main pattern) gives me more writing ideas (72.4%), followed by
  - The inclusion of two sub-points helps me write a longer paragraph with better paragraph structure (59.2%).

The remaining two advantages listed in the questionnaire, and chosen by the participants, were in descending order:

- The use of a mind map helps me see the relationship between a topic sentence and the mini topic sentences (44.7%).
- Having to think of two sub-points to develop a topic sentence improves my critical thinking (31.6%).

Supplementary information for Question 4 (“Do you still have problems elaborating an argument now?”) provided the following comments from some respondents:

- Difficulties in generating second-level ideas like giving two causes;
- Difficulties in generating third-level ideas like finding examples;
- Lack of adequate vocabulary to express themselves;
• Need for more practice;
• Difficulties in presenting logical arguments.

Summary of findings
The experimental group scored significantly higher marks in Discourse Competence and in Fulfillment than did the control group. The percentages of students in the experimental group who scored merely the minimum passing mark in DC and in TF were significantly lower than the corresponding percentages of students in the control group. The results seem to suggest that the students who were taught the writing paradigm in the way previously reported under Methodology benefited from the teaching. The questionnaire responses positive opinions from the participants concerning the usefulness of the writing paradigm in raising their awareness of what makes a coherent paragraph and in improving their essays with respect to coherent paragraph and idea generating. However, it was difficult to put it into practice for lacking adequate ideas and to write deductively, which might arise from their “employing a rhetoric and a sequence of thoughts” (Raplan, 1986, p.4) typical of their L1 writing.

Discussion
The teaching of the writing paradigm to the participants in this study has yielded positive results. However, because this writing paradigm has been newly developed explicitly for the present study, it remains unknown whether the paradigm can also improve participants’ coherence in their argumentative writings in other studies with participants of varying language ability. Lee’s (2012) instruction program has also yielded positive results in improving the participants’ scores in coherence and in raising awareness of the importance of maintaining coherence throughout any writing activity. It is likely that participants will improve their writing coherence to some extent if coherence is taught explicitly for a certain number of class hours. As such, the aim of this study is not to argue that the writing paradigm developed in this study is superior to other instruction packages or vice versa. Rather, the development of this writing paradigm is meant to provide an option for EFL teachers to help students, especially those who have limited grammatical proficiency. It is hoped that student writer can benefit from using this approach to generate hierarchically-ordered ideas, thereby improving paragraph coherence. The particular feature of this writing paradigm lies in the use of elaboration skills as a way to relate lower-level ideas to higher-level ideas, thus possibly offering easier comprehension among EFL students, especially those who do not have good grammatical knowledge, and thereby to achieve improved paragraph coherence. It would be interesting to see how student participants have actually changed over the one-year EAP course – that is, what participants were able to show in pre-test scores versus post-test scores. With this aim in mind, two samples written by the same student are provided in Appendices C and D to illustrate how the writing paradigm has helped some students to generate more writing ideas and to express them coherently. The first essay was written in the pre-test (hereafter named Version 1), and the second one in the end-of-course writing examination (hereafter named Version 2). As can been seen in Version 2, the first and the second body paragraphs have each embedded two sub-points related to the topic sentence, thus maintaining
paragraph coherence while the author was attempting to convey more complex ideas and consequently was able to compose longer paragraphs. In Version 1, the first and second body paragraphs were basically coherent, but the 3-level hierarchical structure of a paragraph was not evident. The student was only able in the most basic manner to write text in which all elaborations supported only the single key concept expressed in the topic sentence. Possibly, due to the absence of the student’s ability to write ideas when elaborating, the resulting paragraphs were much shorter than those in Version 2.

It is important to note that the present study is a quantitative study because time constraints did not allow the present researcher to conduct a systematic qualitative analysis of paragraph coherence in the essay written by the participants.

There are several limitations concerning the research methodology.

First, among the four EAP classes in the experimental group, three EAP Part I classes were taught during Semester A 2014-15 and one EAP Part II class was taught during Sem B 2014-15. Since the writing examination took place at the end of EAP Part II, some variables not within the control of the present researcher might have contributed to the better performance of the experimental group. For example, the three EAP Part I classes might have benefited from the teaching of another teacher when they took EAP Part II in the second semester; similarly, the EAP Part II class might also have benefited from the teaching provided by their EAP Part I teacher; potentially there may be other factors, for example, self-study. For these reasons, the claim that the significantly higher scores of the experimental group cannot be attributed exclusively to the teaching of the writing paradigm developed by the present researcher. A better indicator of whether the participants really benefited from the teaching of the writing paradigm might consist of an examination of the paragraph structure of examination scripts to see whether paragraphs contain first-level, second-level and third-level ideas, constituting the essence of the writing paradigm recommended to students by the present researcher. Such qualitative analysis of discourse structure might consist of another research study since time constraints limit the possible findings from this study.

Second, another reliable way to examine the improvement of the experimental group would be to compare the marks on their first essays, written as a diagnostic test in class, with those written on the end-of-course examination. However, administratively it would not be easy to have the diagnostic essays marked by two or three colleagues because of the additional workload; furthermore, were the marking undertaken only by the present researcher for the sake of convenience, subjectivity and bias could probably skew the results.

Third, no statistical test was conducted to ensure inter-marker reliability. During the marker training session, no record was kept of the individual marks assigned by markers for the three scripts used to train markers. Moreover, it would not be a viable idea to invite the markers who had marked the two groups’ essays to attend another session just to confirm their inter-rater reliability because of the busy working
REFERENCES


schedules of the raters. It would constitute a significant imposition on their time.

With respect to the results of the questionnaire, while most respondents were positive about the usefulness of the writing paradigm, the comments provided by some respondents with respect to Question 4, concerning whether they still have problems elaborating an argument, reveal the difficulties encountered by some students in their attempts to write an argumentative essay with sufficient elaborations regardless of the aid of the writing paradigm. The difficulties involved in generating writing ideas for the second and the third levels in the writing framework as well as the deficiency in vocabulary may constitute significant impediments.

Conclusion
While the small sample size might have limited the generalizability of the findings of this study, those findings do seem to suggest that the visualization of the hierarchy of ideas by making use of a three-level mind map proves a useful way to improve paragraph coherence as well as the content of an essay for students with low English proficiency. It appears unrealistic, however, to expect such students to be able to apply the writing paradigm in their writing after they are exposed to such a paradigm in only one single lesson. Rather, the ability to generate second-level and third-level ideas needs to be further developed through the teacher’s repeated demonstration of how to derive two sub-points from the first-level idea, preferably using a student’s essay as teaching materials in a one-to-one consultation session. It is characteristic of many ESL efforts to overgeneralize the amount of time optimally needed to implant a process in the minds of the subjects.

Questionnaire findings about what the participants liked most about the writing paradigm revealed their perceptions that the writing framework was especially useful in giving them more writing ideas; a second advantage from the students’ perception consisted in writing a longer paragraph with better paragraph structure. Based on their perceptions, it seems that the writing paradigm could address the weaknesses of the participants in general. However, some participants still found it difficult to think of the second-level and third-level ideas. The problems they had perceived included their lack of vocabulary and common knowledge of social issues; they were also aware that more practice was needed to apply the concepts of the writing paradigm to their writing assignments.

Future research might employ a larger sample of students and might include students having not only stronger language proficiency but also a wider spread of proficiency. The addition of a more proficient contingent population segment might disclose more information concerning the effectiveness of this paradigm; for example, whether the suggested writing paradigm is useful largely to students demonstrating only weak language proficiency since students having stronger proficiency might be able to elaborate one single idea of a topic sentence coherently without having to incorporate two sub-sections in one single paragraph, as suggested in the paradigm.


Appendix A
Student Handout

Paragraph Coherence

The framework for organizing a body paragraph

A feature of this framework includes the incorporation of two sub-sections in one single paragraph. Students are reminded that the two sub-sections should be derived from the same category—e.g., two causes, two effects, two aspects (e.g., mental well-being vs. physical well-being; situation in the past vs. situation in the present, men vs. women, etc.).

Each sub-section should include an opening sentence to introduce the sub-point, exactly as what a topic sentence does for a whole paragraph. The opening sentence should be followed by elaboration; e.g., examples, or a combination of various elaborations like using statistics and facts. For convenience, an opening sentence for each sub-section is hereinafter named a mini topic sentence.

The underlying organizing principle unifying the two sub-sections consists of one of the three major elaboration skills, i.e., cause, effect, and aspects. Of course, apart from using one of the three major elaborations as the primary pattern of organization, a student might use other patterns of organization, e.g., the use of definition as the predominant organizing pattern. The organizing pattern using cause/effect, however, seems to be easiest for students to manage in terms of idea generating and their ability to elaborate further; aspect also seems to be an organizing pattern well within students' abilities to cope.

The plan of an argumentative essay written by Student A:

The thesis statement: The legalization of same-sex marriage should be allowed on the grounds of personal happiness and social harmony.

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4 Elaboration skills referred to in this study include: cause/effect, comparison/contrast, and additional aspects; research findings, examples, details, anecdotes, and definitions.

4 Major elaboration skills include: cause, effect, and aspects, as exemplified in this handout.
First topic sentence: Being able to marry the person one loves regardless of his/her gender would contribute to one's happiness.

Diagram 1: The use of a mind map to generate two sub-points (for the first topic sentence)
Second topic sentence: Legalizing gay marriage could contribute to social harmony.

Diagram 2: The use of a mind map to generate two sub-points (for the second topic sentence)
Appendix B  Sample text illustrating paragraph coherence

Text
Dogs are very useful to humans. First, dogs will protect their owners. Quite often these animals will even sacrifice their own lives to save their masters. Once it was reported in the newspaper that a German Shepherd kept biting a thief, who broke into its master's house, although the thief used a knife to stab it crazily. The master ran out for help and the thief was arrested eventually. Unfortunately, the loyal Alsatian died of over-bleeding. Second, dogs are humans' best friends. When one is lonely, one can play with one's dog; one can take the dog to a beach or to a park; one can even talk to the dog and play ballgames with this kind of clever animal. These creatures are really humans' unfailing friends because they will certainly keep their masters company when they are in need of a companion. Unlike a human friend, a dog will never let its master down and say "Sorry, I am busy today, so I can't play with you." A dog is always there waiting for its master to have some fun together. Finally, dogs are useful to the disabled. For example, some dogs can be the guides of blind people and take them around; some dogs can also make autistic children open up again; some children who fail to make friends with other children find their life brightened up after keeping a dog. The true love between a pet dog and its master is really an experience for everyone to try.
Appendix C  A Student Essay Written in the Pre-test

Topic: It is argued that surrogate motherhood is an acceptable practice. Do you agree? Argue for your position.

(The grammar errors appearing in the essay have not been corrected)

As the society and technology developed, surrogate pregnancies become more common nowadays. This new trend leads to a new law construction by the government to monitor surrogate pregnancies. Surrogate motherhood is the situation in which a woman gives birth to a child for another person or a couple, with the intention of handing it over to them at birth. It raises a lot of attention of different country of people to this issue. In my opinion, I totally disagree surrogate motherhood is an unacceptable practice, because of the benefit of achievement of motherhood to women who could not carry a child, work opportunities and self esteem.

Firstly, the most significant advantages of surrogate motherhood is the benefit of motherhood to women who could not carry a child. Surrogate mother can provide a service for the commissioning parents to help them for the pregnancies of their child. The commissioning parents need to pay for the service fee to the surrogate mother, then, he or she will give birth to the child and hand it over to them at birth. For example, the women has a health problem and her spinal chord can not support the pregnancies of the child, the surrogate mother can help her for the birth of the child. Therefore, the women can have a child without getting the health problem more seriously.

Secondly, it can give an advantage in the work opportunities. Since the commissioning parents want to have a child, they will pay to the surrogate mother for the services, it becomes a demand and supply and surrogate mother become a job which the surrogate mother can get the income. According to the "Boom in Surrogacy despite recession" (Vohra.A, 2009 January), a surrogate mother decided to rent her womb to be a surrogate mother since her salary was being cut, after that, she got the income which is US$5000 for her services, and it is double her previous annual salary. We can see that surrogate mother can increase the working opportunities and increases the income of the surrogate mother.

Last but not least, surrogate mother can increase the self-esteem of the surrogate mother. Surrogate mother generally reported the positive experiences with the commissioning parents, also being a surrogate mother can help them to feel of self-worth and gain more income, they will think that are useful and feel meaningful after helping the women to achieve motherhood who could not carry a child, as the result, it will increase their self-esteem.

Commented [A1]: The elaborations support the key words "women who could not carry a child" in the first-level topic sentence. There are no second-level sub-points.

Commented [A2]: The elaborations support the key words "working opportunities" in the first-level topic sentence. There are no second-level sub-points.

Commented [A3]: The elaborations support the key words "self-esteem of the surrogate mother" in the first-level topic sentence. There are no second-level sub-points.
Some people may think that surrogate motherhood is not respect human values. They point out that the use of surrogate mothers are to make parents happy and wrote off the human dignity of the children, so that it does not respect human value. However, surrogate motherhood gives benefits on both surrogate mother and commissioning parents, it helps the surrogate mother to gain more income and increase the working opportunities, for commissioning parents, it helps them for the birth of a child, it is a win-win situation.

To conclude, I totally disagree surrogate motherhood is an acceptable practice because of the benefit of achievement of motherhood to women who could not carry a child, working opportunities and self-esteem.
Appendix D  The End-of-Course Exam Essay Written by the Same Student

Topic: Home schooling is a better form of educating one’s child compared with sending children to traditional schools. Do you agree? Argue for your position.

In a recent years, home schooling becomes more popular around the world. Home schooling is the children taught by their parents at home. It has an increasing number of parents decide to have home schooling because of the responsibility of teaching them. In my opinion, I disagree home schooling with their choice of educating their children because of less practice of communication and the learning environment.

Firstly, the children may have less opportunities to communicate with different and similar age people. Communication is important for people in the society because it is the interaction with people. The children who are having home schooling may have less chance to practice the social skills and communication skills since home schooling children are taught by their parents, so that the children can only communicate with his or her parents. It may lost the chance for the children to practice their social skills and communication skills to other similar age children. Moreover, the children might have less chances to have interaction and learn the emotion of humans. For example, crying is an emotion and feeling express by humans that they are hurt or upset. Children may learn the social skills and communication skills when they communicate with other similar age children. Also, they may learn how to communicate with the children who is crying and learn more about this emotion in this real situation. However, it may not possible that parents cry during home schooling. Another sub-point of less opportunities for the children to practice the communication is the children may be afraid or lack of confidence to communicate with other unknown people or people who have different personalities. Home schooling children can only have chance to communicate with their parents but not other similar age children. It may reduce the chances to have communication with different personalities children and learn to communicate with them. According to Reich (2015), home schooled children can be sheltered and isolated in a way that students in schools cannot be. Home schooling children may not know how to communicate with the people with different personalities in the future because they may be isolated. As a result, they may reduce and lack confidence to communicate with other people.

Secondly, home schooling children may have not good learning environment than learning at school. It has a good learning environment at school because the teacher is educated and have professional qualification. Therefore, the teacher know how to build up the environment for the children to learn. Also, because of many similar age children are learning at the same time, so that it can build up the environment for learning in a good way. However, the home schooling children may not focus when the parent teach them. Also, the parents may not provide a good learning environment because if has
many videos games or computers to distract the children from learning. **Another sub-point of the learning environment is it may lead the children to think better and deeper when they are at school.** According to Reich (2015), home schooled children may fail to develop their capacity to think for themselves because of the total environment. The children at school may have better training environment. Since there are a lot of children learning with him and not much distraction, the children can think better and learn better in this better environment.

To conclude, I disagree home schooling is a better choice.