Analysis of Errors in Paragraph Writing in English by First Year Medical Students from the Four Medical Schools at Mahidol University

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Abstract

The objective of this study was to identify the types of errors in paragraph writing in English made by first year medical students. One hundred and thirty four medical students from four medical schools at Mahidol University were assigned to write an opinion paragraph in English on medical ethics based on a reading passage chosen from the Internet. A standard format for paragraph writing consisting of 10 criteria was used for evaluating the types of errors. The frequency of errors was calculated as percentage. A Chi–square test was used to compare the errors committed by Siriraj Medical students to those from the other three medical schools: Ramathibodi, Praboromchanok and Bangkok Metropolitan. A P-value of < 0.05 was considered statistically significant. It was shown that most students had errors in standard format of paragraph writing. A high percentage of errors was found in eight out of 10 criteria. The results showed 82.84%, 73.88 %, 69.40%, 69.40%, 85.07%, 90.30%, 76.87% and 82.84% for criteria 2, 4, 5 and 7, 6, 8, 9 and 10 respectively. Praboromchanok Medical students had the highest percentage of errors.

***Key Words*:** comparison, criteria for error analysis, medical students, paragraph writing.

Introduction

The study of English aids students in the quest for more knowledge from many international sources. There are two media for language communication: 1) receiving the message, i.e., reading and listening, 2) and sending the message, i.e., speaking and writing. To give clear information in communication, writing and the use of a standard format for writing are needed. So, in the first-year medical student curriculum (SCLG 132) for the year 2002 at Mahidol University, the students were required to write an opinion paragraph on medical ethics based on a reading passage chosen from the Internet. Every student would receive 30 marks as part of the semester's course work if they wrote it regardless of the quality of their writing. However, they had not been trained to construct a well-organized paragraph.

The researchers realized that it is important to improve students' skills in writing standard paragraphs because it is an important tool in their profession and for further education. Therefore, we performed a study to evaluate the writing skills of these first-year medical students in writing a paragraph in English and identified their errors in order to develop guidelines for correction and improvement of their writing skills.

Objectives of the Study

This study was conducted to identify the errors in paragraph writing in English of first-year medical students in four medical schools at Mahidol University and to compare the errors committed by Siriraj Medical students to those committed by students from Ramathibodi, Praboromchanok and Bangkok Metropolitan by using the Chi–square test.

The study attempts to answer the following questions.

1. What are the frequent types of errors committed in paragraph writing by first-year medical students from four medical schools at Mahidol University?

2. Which medical school has students who produce the highest percentage of errors in writing opinion paragraphs?

Literature review

Why is writing an important skill?

Writing skill is more and more important nowadays. Becoming a proficient writer is one of the major objectives of many students, especially for those who want to become members of international business, administrative or academic communities (Tribble 1997:8). For scientists, writing is very essential. Scientists must not only "do" science, but must "write" science. Bad writing can and often does prevent or delay the publication of good science (Day 1998: X). Similarly, for EFL medical students, developing an ability to write fluently and confidently in English is a high priority owing to the fact that a great deal of medical work they will be doing will depend on written documents such as medical reports of a patient's symptoms, notes, letters, medical papers etc. Maher (1990:39-48) provided a selection of the most important types of language functions needed for medical professionals, including expressing cause and result; defining; expressing possibility; likelihood and certainty; comparing; expressing purpose; using the passive; expressing obligation; recommending; expressing necessity; making generalizations and emphasizing.

In terms of ESL or EFL instruction, writing helps students learn. First, writing reinforces the grammatical structures, idioms, and vocabulary that they were taught to students. Second, when students write, they also have a chance to be adventurous with the language, to go beyond what they have just learned to say, to take risks. Third, when they write, they necessarily become involved with the new language; the effort to express ideas and the constant use of eyes, hand, and brain is a unique way to reinforce learning. As students struggle with what to put down next or how to put it down on paper, they often discover something new to write or a

new way of expressing their ideas. They discover a real need to find the right word and the right sentence. Raimes (1983:6) pointed out that the close relationship between writing and thinking makes writing a valuable part of any language course. She identified the different components for producing a clear, fluent and effective piece of writing: content, the writer's process, audience, purpose, word choice, organization, mechanics, grammar and syntax. In conclusion, correct language, punctuation mechanics, and logical content are considered important to communicate in written work.

Writing-reading relationships

Based on the procedure of this study, each student was assigned 40 articles to read before starting to write. Therefore, theories based on the relationships between the two skills should be considered. In the past, writing and reading were considered separate skills: the writer wrote a message, and later, the reader extracted the meaning from the message. The writer was an active composer and the reader was a passive receiver. However, researchers have found that both writing and reading are active, complex skills, and the more writers know about their readers, the more successful their writing will be. Reid (1994:1) said that both writers and readers utilize their life experiences. Writers use their background knowledge when writing, as readers use background knowledge to comprehend the text.

Based on ESL/EFL teaching experience, when students read, they engage actively with the new language and culture. If they are studying English where they have little opportunity to speak it or hear it spoken, then reading is the only activity that gives them access to unlimited amounts of the language. The more the students read, the more they become familiar with the vocabulary, idiom, sentence patterns, organizational flow, and cultural assumptions of native speakers of the language. Students who read interact with a text that somebody else has written, so they can learn a great deal about writing, in addition to using the language and cultures. They have direct access to the product of a

native speaker of the language and they can return to this product again and again (Raimes, 1983:50).

In brief, the ability of the language learners to express themselves extensively in their own words can be obtained from what they read and their personal experience.

Paragraph writing

The main focus of this research is expressing opinions at the paragraph level. Therefore, paragraph writing or the organization of a paragraph is of primary importance. However, writing builds larger units from smaller ones; that is, writers use words to make sentences, sentences to make paragraphs, and paragraphs to make such compositions as letters, reports, and college themes (Hart & Reinking 1990:11). Rajatanun (1988:95) said that a paragraph is a unit of writing which expresses one central idea and consists of two kinds of sentences: a topic sentence and a number of supporting statements.

O'Donnell and Paiva (1993:2-4) provided more details about the essential parts for paragraph writing which include a topic sentence, supporting sentences, details, logical order, logical connectors, a concluding sentence, unity and coherence. The ideas in the paragraph must be presented in logical order by using transition words or connecting words which indicate the relationship between the ideas (chronological, causal, etc.). A paragraph may have a concluding sentence, which restates the main idea in a different way. According to Reid (1994:42), the concluding sentence summarizes the material, offers a solution to the problem, predicts a situation, makes a recommendation, or states a conclusion.

Unity and coherence are also main components of a paragraph, together with the main idea and the supporting details. Even when a paragraph is unified, and the topic sentence is well supported, the paragraph can still "sound" choppy unless the writer uses coherence devices to make the paragraph smoother. Coherence means "to stick together." In writing, it means that one

thought flows smoothly into the next. One way to achieve coherence is with the use of connectors called transition words or phrases that link one sentence to another (Wyrick 1999:211). Therefore, to produce an effective piece of writing, students should focus on organization by 1) choosing an appropriate topic sentence 2) identifying general and specific statements 3) arranging sentences in order and 4) inserting or deleting some sentences and ending with a concluding sentence.

Errors in Writing

We can conclude that writing is of course, not easy and in some way, more difficult than speaking (Norrish 1983:63). Writing is more complex in that it tests a person's ability to use a language and the ability to express ideas. As a result, a person needs to write not only coherently but correctly, which requires more time and effort (Liu and Braine 2005:623-624). This difficulty of writing leads students to be more susceptible to producing errors.

This study was designed to identify important features of students' errors, the causes of their errors, and categorize those errors. Errors in language learning, therefore, play an important role in this study.

Corder (1971 :152) stated that errors are 'the result of some failure of performance'. Norrish (1983:7), like Corder, defined 'an error' as a systematic deviation that happens when a learner has not learnt something and consistently 'get(s) it wrong'. James (1998:1) also identified a language error as an unsuccessful bit of language. Moreover, he pointed out that error is likewise unique to humans, and error analysis is the process of determining the incidence, nature, causes and consequences of unsuccessful language. Errors are significant in three different ways. First to the teacher, errors tell him how far the learner has progressed and, consequently, what remains for him to learn. Second, errors provide researchers with evidence on how language is learnt or

acquired, what strategies or procedures the learner are employing in his discovery of the language. Thirdly, errors are indispensable to the learner himself, because errors can be regarded as a device the learner uses in order to learn. The making of errors is a strategy employed both by children acquiring their mother tongue and by those learning a second language. Errors can be accepted as a kind of learning activity taking place in the learner. According to Ellis (1995:51-54), the most significant contribution of Error Analysis lies in its success in elevating the status of errors from undesirability to that of a guide. Hence, errors are no longer seen as 'unwanted forms', but as evidence of the learner's active contribution to second language acquisition. Norrish (1983:21-42) described the causes of language learners' errors as arising from carelessness, interference from the learner's first language, translation from the first language, contrastive analysis, general order of difficulty, overgeneralization, incomplete application of rules, material-induced errors and a part of language creativity.

In writing, learners easily make errors because information has to be transmitted without any aid from sources other than the language itself. However, there is a danger that the language learner will tend to focus on the errors rather than on the presumed aim of the piece of writing: communication (Norrish, 1983:65).

In the paragraphs written for this research, stating the learner's opinion on a paragraph level was the main focus, thus errors produced in this context can be classified as text errors. According to James (1998:141), the term text is sometimes used to refer exclusively to a unit of written language larger than the sentence—for which paragraph might be a suitable term. However, following a suggestion by Connor (1996:83-84), text will take cohesion into account, while coherence is treated as a feature of discourse organization. Syntax errors are errors that affect texts larger than the word, namely phrase, clause, sentence and ultimately paragraph. In other words, they are referred to as (1) phrase structure errors, (2) clause errors, (3) sentence errors, and (4)

intersentence errors (cohesion). In the development of a paragraph, the fourth type of errors, cohesive errors, often occurs. Halliday and Hasan (1976:48) identified five types of errors: reference, substitution, ellipsis, conjunction and lexical cohesion. While cohesion is based on grammar or meaning, between parts of a piece of writing, coherence, on the other hand, refers to a reasonable connection or relation between ideas, statements, etc. In addition, James (1998:162) concluded that coherence is related primarily to content, to the conceptual relatedness of propositions.

Liu and Braine (2005:623) investigated the use of cohesive devices in 50 argumentative compositions written by Chinese undergraduate non-English majors. Results showed that students were able to use a variety of cohesive devices in their writing, among which lexical devices formed the largest percentage of the total number of cohesive devices, followed by references and conjunctives.

Connell (2000:95-103) analyzed the kinds of errors Japanese students made on tests which required full, written sentences to get the results for constructing a suitable syllabus. Each error was analyzed on how it affected the understanding of the sentence in which it was used. The results showed that the use of subject in a sentence, the parts of speech and general word order created more problems than other grammatical aspects.

Olsen (1999:191-205) carried out research in English written by Norwegian EFL learners. Language problems on different linguistic levels were analyzed and the theory of compensatory strategies was used. The results showed that less proficient learners had a higher number of grammatical, orthographic and syntactic errors, which can be attributed to cross-linguistic influence.

In our own context, TEFL in Thailand, Sattayatham & Honsa, Jr (2007:170-194) carried out a research to identify the most frequent errors of first year medical students at Mahidol University. The students were required to translate from Thai into

English at the sentence level and the paragraph level. The results showed that the most frequent errors were at the syntactic and lexical levels which led to the overgeneralization, incomplete rule application, and building of false concepts. Mother-tongue interference was detected as major cause of errors. However, some linguistic items, such as articles, tense, and verb forms appeared to be the source of frequent errors.

Sereebenjapol (2003:iv) conducted a study to analyze the main types and frequency of errors occurring in the discussion sections of scientific theses published in 2000 at Mahidol University, and to determine the probable causes of those errors. The most frequent errors occurred in the categories of syntax, lexis, morphology and orthography respectively. The most frequent local errors were the use of subordinators and conjunctions. One error could be traced to various causes depending on interpretation and the linguistic background. The probable causes could be carelessness, incomplete application of rules, and differences between English and Thai.

Thananart (2000:88-101) examined errors in comprison and contrast paragraphs written by EFL university students at Chulalongkorn University. The vast majority of errors were grammatical structure (73.86%), and the other types of errors were errors in using transition signals (10.01%), verb forms (7.68%), word choice (6.90%) and spelling (1.55%).

In summary, the studies cited above demonstated that writing problems can occur in various situations; therefore, it is interesting to examine writing errors of medical students whose English proficiency is basically high.

Methodology

This study consists of two parts. The first part is to identify the frequency of errors of all medical students in writing an opinion paragraph. The second part is to compare the errors committed by Siriraj Medical students to those committed by students from the

three other medical schools at Mahidol University by using a Chi-square test.

Part I: Frequency of errors in opinion paragraph writing of all first-year medical students.

Subjects

The subjects in the study were 134 first-year medical students from four medical schools at Mahidol University in the year 2002. They were 40 students from Siriraj Medical School (SI), 50 students from Ramathibodi Medical School (RA), 31 students from Praboromchanok Medical School (PI), and 13 students from Bangkok Metropolitan Medical School (BM).

Procedure

Each student was asked to read three medical ethic passages selected from the internet. Then, they had to choose one of these passages and write their opinion about medical ethics in one paragraph. Most of the students chose to write an opinion paragraph on "Life-Saving Embryo ?" and 40% of the students in each school were chosen using random sampling for analysis. The ten criteria for analysis were used which are as follows.

1. Inability to perform the assigned task because of not understanding the question.
2. No introduction
3. Lack of main ideas
4. No topic sentence stating the main points
5. Lack of development of the main ideas (adding details and facts about the main point)
6. Lack of organization
7. Accumulation of errors in sentence structure and / or usage
8. No transitional words
9. Incoherence
10. No conclusion

All the ten criteria were gathered from the survey and the principles of good paragraph writing from many books such as TOEFL criteria for correcting paragraphs (Mahnke & Duffy, 2002), Writing Academic English (Oshima & Hoque, 2006), Logic, Language, and Composition (Willis, 1975). They are considered as types of errors.

The frequency of errors found in the opinion paragraph writing of the students in each medical school was calculated using the following formula.

$$\text{percentage of errors} = \frac{\text{number of errors (for each criteria) X 100}}{\text{total number of subjects (134)}}$$

The percentage of errors from the four medical schools was calculated and illustrated in bar graphs (Figure 1).

Part II: Comparison of errors among four medical schools.

The frequency of errors for each criteria for Siriraj Medical students was compared with that of the students from the three other medical schools (Ramathibodi, Praboromchanok, and Bangkok Metropolitan). A Chi – square test was used. A P-value of < 0.05 was considered statistically significant.

Results

The following are the results that the researchers obtained.

Part I: The most frequent errors in opinion paragraph writing.

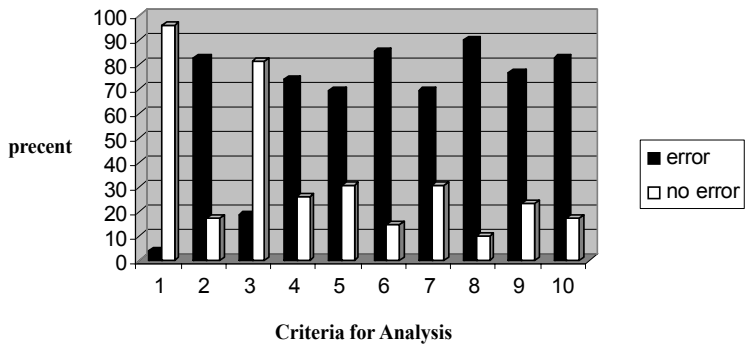
Errors were found in the writing of most students from all four medical schools. The distribution of type of error was quite similar for all groups. A high percentage of errors was found in eight out of ten criteria. The top four criteria (or causes) of errors were: no transitional words, lack of organization, no introduction and no conclusion. (See Table 1)

Table 1 Frequency of errors in opinion paragraph writing made by students from the four medical schools (according to the type of error or criteria)

Order	Criteria Analysis	Level of error	
		amount	%
1	Inability to perform the assigned task because of not understanding the question.	5	3.73
2	No introduction.	**111**	**82.84**
3	Lack of main ideas	25	18.66
4	No topic sentence stating the main points	99	73.88
5	Lack of development of the main ideas (adding details and facts about the main point)	93	69.40
6	Lack of organization	**114**	**85.07**
7	An accumulation of errors in sentence structure and/or usage	93	69.40
8	No transitional words	**121**	**90.30**
9	Incoherence	103	76.87
10	No conclusion	**111**	**82.84**

Graphic demonstration of the frequency of errors is shown in Figure 1

Figure 1 Frequency of errors among all students stratified by the criterias for standard paragraph writing



Part II: The findings for the comparison of errors for students from the four medical schools.

The frequency of errors in each criteria committed by Siriraj Medical students (SI) was compared with those committed by the other three medical schools. (See Table 2.) It was found that in comparing the SI group with Ramathibodi group (RA), there was no statistical difference in any criteria. However, when the SI group was compared with Praboromchanok group (PI) and Bangkok Metropolitan group (BM), it was found that the PI group committed more significantly errors for criteria 3, 5, 7 and 10 (4 out of 10 criteria) and the BM group committed more errors for criteria 3 only (1 out of 10 criteria). (See Table 2.). Therefore, PI students were the weakest group in writing opinion paragraph followed by BM students. The ability in paragraph writing of the SI group and the RA group were comparable. (See Table 2.)

Table 2 Frequency of errors classified by the criteria for standard paragraph writing of the students from four different medical schools

Criteria No / school.	Frequency of errors				
	SI (n=40)	**RA (n=50)**	**PI (n=31)**	**BM (n=13)**	**Total (n=134)**
1	0	3(6%)	2(6.45%)	0	5(3.73%)
2	30(75%)	41(82%)	28(90.32%)	12(92.31%)	111(82.84%)
3	1(2.5%)*, ++	7(14%)	11(35.48%)*	6(46.15%)++	25(18.66%)
4	30(75%)	36(72%)	21(67.74%)	12(92.31%)	99(73.88%)
5	22(55%)**	37(74%)	24(77.42%)**	10(76.92%)	93(69.4%)
6	33(82.5%)	41(82%)	28(90.32%)	12(92.31%)	114(85.07%)
7	24(60%)***	34(68%)	26(83.87%)***	9(69.23%)	93(69.4%)
8	32(80%)	47(94%)	29(93.55%)	13(100%)	121(90.3%)
9	30(75%)	38(76%)	24(77.42%)	11(84.62%)	103(76.87%)
10	27(67.5%)****	42(84%)	30(96.77%)****	12(92.31%)	111(82.84%)

* p-value <.001
** p-value <.05
*** p-value <.05
**** p-value <.01
++ p-value <.001

Conclusion

Most students understood the story in the passage they had read, and understood what they were asked to write but they had problems with the format of paragraph writing. They wrote an opinion paragraph with no introduction, no topic sentence, and no transitional words. In addition, the paragraph was incoherent and lacks organization. Moreover, they placed too much emphasis on presenting their ideas and disregarded the conclusion. Therefore, a conclusion was often missing in the medical students' opinion paragraph writing. Finally, most students also had difficulty in using English grammar. Error analysis plays an important role in this aspect because it can help in students' error recognition and thus aid students in writing good paragraphs after they learn how to correct these errors through practices.

Discussion

In evaluating the medical students' opinion paragraph writing, the researchers found that most students did not present a reasonable connection or relation, between ideas in their paragraphs which causes "coherence breaks" (Wikborg, 1990). They did not use transitional words to link the ideas together. One thought is not connected to the previous one. Also, the sentences in the paragraphs did not directly relate to the main idea. They only put the content into the paragraph without expanding on their ideas, so their paragraphs were short and unclear. They only paid attention to content which prevented them from writing a detailed paragraph. In addition, it seemed that most medical students did not have organizational skills and paid little attention to topic sentences, introductions and conclusions. These are the areas that should be explained to students so that they keep in mind when writing a paragraph in English.

Suggestions

Only a small percentage of Siriraj, Ramathibodi, Praboromchanok, and Bangkok Metropolitan medical students know how to write a standard paragraph. Most of them lack the skills of writing introduction and conclusions. They cannot organize their ideas logically and systematically by using transitional words. This reflects the need to improve their ability in English paragraph writing. Therefore, all medical students at Mahidol University should be taught to write a standard opinion paragraph. Furthermore, transitional words should be taught and emphasized. This findings will be used as a reference point for developing materials appropriate to what the students need. Further research should be conducted to identify the errors in opinion paragraph writing of other science–oriented students such as science, dentistry, pharmacy, and nursing. Moreover, the error correction technique to improve the students' ability in writing a standard opinion paragraph should be further investigated in order to prepare and to develop language skills not only of medical students but also students in other fields at Mahidol University.

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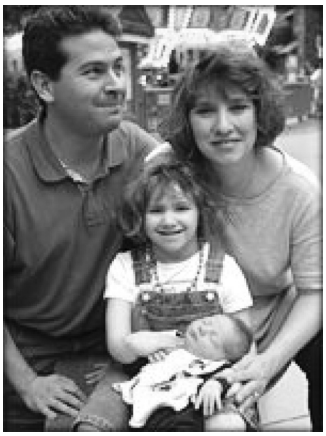
Appendix

Passage 30 Life-Saving Embryo?



6-Year-Old Girl Saved With Transplant From Test-Tube Sibling Jack and Lisa Nash of Colorado pose with their 6-year-old daughter Molly and 5-week-old son Adam, whose healthy cells were extracted to save his sister.

(Richard Sennott/Star Tribune/AP Photo) *By John McKenzie*

Oct. 3 ? Molly Nash has a rare disease that destroys the bone marrow and cripples the immune system.

Molly was showing early signs of leukemia. Her only hope was to receive a batch of healthy bone marrow cells.

And that?s what happened last week. The donor was her 5-week-old brother who was born for this purpose.

?Jack and I were going to have more children,? says Molly?s mother, Lisa Nash, ?but at this point, we were going to try to have a child that could also help Molly.?

In this case, doctors, through in vitro fertilization, created 15 embryos. Then, they not only genetically screened the embryos to make sure they were free of the disease, they identified the one viable embryo that could best save her life.

?What?s new here is the use of technology to allow a couple to have a pregnancy with a baby who will be a bone marrow donor for a child that is already alive,? says Charles Strom, director of the Reproductive Genetics Institute at the Illinois Masonic Medical Center, where the genetic testing was done.

Identical Donor Offers Better Chance

The ?perfect match,? named Adam, was born in Denver on August 29. Cells from his umbilical cord were painlessly extracted and, on September 26, infused them into his sister?s circulatory system where, doctors hope, they?ll begin producing blood cells in her bone marrow.

Because the cells Molly received are an identical match from her brother and not an unrelated donor, her chances of a cure climb from about 30 percent to more than 80 percent.

Some doctors predict this process of creating one child to help save another might also be used in cases of leukemia and sickle cell anemia, which also requires bone marrow transplants. But some medical ethicists question where all this genetic screening is leading.

?We can easily see this quickly becoming, like, deciding the options in a new car,? says medical ethicist Jeffrey Kahn of the University of Minnesota. ?Choosing your children?s characteristics looks more like a commodity than having kids for the sake of having kids.?

Doctors say they should know within the next week whether Molly can be saved by her new baby brother.

What do YOU think?

(1) Read the story about the Colorado parents whose daughter has an incurable genetic disease.

Do you think that they did the correct thing in creating a test tube baby which had been screened to ensure it did not have the same genetic disease as their daughter? Was it right to ‘design’ their baby so that it could be a source of cells to keep their daughter alive?

Example of bad paragraphs

Example 1

Yes, I think it's correct to create a baby to save their daughter life because a screening genetic baby will certainly not have a genetic disease.

I think the right to "design" baby that could be a source of cells to keep their daughter alive because save one life with create on life I think it is better than lose one life without doing some thing. And if I am a baby. I want my sister alive. I will help her in the way I can.

No, I think I shouldn't allow to have the right to choose the next baby will be boy because the daughter is a human, the boy is a human. I don't cave about this thing. Girl or boy is not important.

The paragraph above is an example paragraph written by one of the subjects. There is no introduction, no coherence, no transition signals words, and no conclusion. Also, it lacks development of the main idea and organization.

Example 2

I think they did the correct thing because it can parent the body from genetic disease. Do you want your baby to have the disease? If you can do something to help your baby, you should do. And it is not wrong to design their baby so that it could be a source of cells to keep their daughter alive. Although the baby will be born for save his sister, they still love him. If they need the baby it is not wrong to create a test tube baby. I don't agree with choosing the sex of baby because the boy and the girl are the same. Son and daughter are your babies so it is not right to choose the sex of baby.

The paragraph above lacks development of the main idea, supporting ideas and organization.

Example of good paragraphs

Example 1

In my view, I think that they did the correct think in creating a test tube baby which had been screened to ensure it did not have the same genetic disease as their daughter, because their new born baby will be able to survive without such genetic disease problems. In addition, I think that it was right to design their baby so that it could be a source of cells to keep their daughter alive, if this case is not dangerous to it. Even though this may seem unfair to the designed baby, in the future when he knows that once he could safe his daughter's life he will be proud of it. Moreover, I have an important thing to recommend the parents concerned in this case that they should give him love as much as they love the baby who were born before. By the way, if I imagine that I already have two daughters, I think I should be allowed to choose that my next child will be a boy. Because in my personal value, I would like to have a boy to inherit my family's name to the next generation, which daughters can not make it.

Example 2

I agree with the Colorado parents in creating a test tube baby, Adam, which was sured that it did not have the same genetic decease as their daughter, Molly. I think that they are right to design their baby so that it could be a source of cells to keep Molly alive. Although I have never been a mother, I understand Molly's mother feeling since I knew how much of love that my mother gives to me. It's infinity. There is maternal feeling in every mother. Though every mother is different in age, shape nationality, etc., there is the same thing in their mind. That is the pure-hearted love to their children. So it is the most terrible sorrow for mother to lose her child despite there is a little hope to survive the apple of her eye. In this case, Molly's parents is like any parent that don't want to lose their angels so their effort to survive Molly by designing their embryo which does not have the same genetic disease and

suitable for Molly is not wrong. In my opinion, Adam is not a commodity which has the suitable umbilical cord cells for his sister but he is a magnificent boy doing a great donation. His cells are not only rescure his sister, but also protect his parents from the worst dream.

If I were a mother and had 2 daughters, I should not be allowed to choose my next baby to be a boy. There will be a problem of unequal rate of male and female in the next generation as the crisis in China now if many parents were allowed to choose their baby's sex. In my opinion, either a boy or a girl is my child. As I am a medical student and I am going to be a doctor in next 5 years, I should realize that I should have the spirit to avoid making any problem to my society. Choosing my baby sex may cause many parents to choose their baby sex as mine and it may cause the troubles in the generation of our children. Therefore, I should not be allowed to choose my baby sex. I think my case is different from Molly's parents'. In Molly case, her parents should be allow to choose their baby's characteristic of having no the same serious genetic decease like Molly and having suitable cells for her but in my case, I have no need to choose any characteristic of my baby. I only want to have it for the sake of having kids. It's cell does not need to suit anyone so I do not have any reason to choose my baby's characteristic and sex. Science is useful if we use it in the right way but it can be dangerous if we use it in the wrong one.

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