

DEVELOPING THE TECHNICAL WRITING SKILLS OF PROFESSIONAL LEARNERS – AN ECLECTIC APPROACH

A. SHAHIN SULTANA

School of Social Sciences and Humanities, B.S. Abdur Rahman University, Vandalur, Tamil Nadu, India

ABSTRACT

The present study is the implementation of an eclectic approach – a combination of the product and the process approach to improve the written competence of professional learners by integrating some of the cognitive elements of the product approach into the process approach for the effective acquisition of the writing skill.

As the given context is that of ESP, a need based study was conducted to examine the difficulties of the learners in writing, the methodology adopted by the teachers at school level, etc. The paper discusses the features of the eclectic approach and the efficacy of the approach is proved by conducting an experimental study on a group of professional learners at first year engineering level. The study proved beyond doubt that the approach had motivated them to produce better pieces of writing. The paper concludes with the contention that the language teachers should provide opportunities to the learners by designing suitable tasks thereby giving lot of practice and also guidance during the three phases of writing.

KEYWORDS: Product Approach, Process Approach, Tasks, Coherent Paragraph, Cohesive Devices, Rhetorical Functions

INTRODUCTION

In this globalized scenario, communication skills are essential for engineers as they are required to interact with people in their professional and real life situations. But unfortunately, some of the engineering students lack these skills. Because of this fact, they are not placed in good companies.

Gunn (1995) claims that without communication there is no engineering. Indeed, any process or product of engineering is based on communication at all stages of its development. The success or failure of engineers depends upon their communication skills. So effective communication skills are a prerequisite for personal and professional success.

Of all the four major communication skills, it is the writing skill, which plays a major role during the course of the study of engineering students as they are required to write letters, reports, proposals, etc. So it is necessary that they develop this skill.

Writing, a Complex Skill

Among the four skills, the writing skill is considered to be the most complex and difficult skill to acquire. Norrish (1983) emphasized that writing is of course, not easy and in some way, more difficult than speaking. While speaking we can use simple, repetitive words and incomplete sentences. Speaking does not have a standard form. But written language has standard form of grammar, syntax and vocabulary, etc. Usually writing is less spontaneous than speaking. As writing is a permanent record of knowledge accessible to any reader, the writer has to be cautious all the time

about whatever he writes. A survey of literature on writing shows that the various elements that constitute writing have been studied by ELT specialists like Raimes, Zamel, Flower and Hayes. The work produced by them shows that writing is difficult.

Writing proves to be a challenge to the technical learners as they have to focus on aspects such as phonology, grammar and vocabulary while writing a text. The writing activity demands lot of effort on the part of the learners.

The Need for the Present Study

As the students of I year engineering have to write paragraphs on the topics related to science and technology, the author has taken paragraph writing as the subject of her study. She realized that it is highly important to improve the writing skill of students, in particular, the skill in writing well-structured paragraphs.

The students of engineering are asked to write two paragraphs on the themes related to science and technology during the first year of their course. The mark allotted for each paragraph is 10. So it is essential to train them to write an organized paragraph, as it is an important tool in communication.

OBJECTIVES OF THE STUDY

- To identify the reasons for the poor performance of students in writing.
- To recommend a new approach for teaching writing.

Teaching Writing at Schools

In schools, teachers adopt the conventional approach to teach writing. They announce the topic and make them produce a piece of writing. They do not offer guidance during the actual process of writing. Students are taught to write for a different purpose and for a different audience. Teachers do not give clear instructions on these aspects. Students are trained to use long sentences and idioms when they write an essay or a paragraph. They are taught to impress the readers rather than to communicate factual information to the readers. In an engineering college, the technical students have to write reports, paragraphs for a different purpose and for the readers who are familiar with the details. So students who join an engineering college find it difficult to meet the expectations of a technical audience. As a result, they produce ineffective pieces of writing.

Survey

A survey was conducted for 107 students of I year engineering at a technical University, Chennai, South India in order to find out the way in which writing is taught at school level and to identify the reasons for the poor written performance. A questionnaire was administered to them.

Design of the Questionnaire

The main aim of the questionnaire given in Appendix – I was to study the difficulties experienced by students in writing. The questionnaire contained totally 18 questions, which focused on the different aspects of writing. Questions 1 to 11 dealt with the students' profile, their name, sex, name of the college, location of school, medium of school education, community they belong to the occupation of their parents and their income, and the percentage of marks secured in the +2 examination in English. Question number 12 was on the number of written exercises given by teachers in

the +2. While questions 13 to 15 focused on the pre-writing tasks given by teachers and the kinds of exercises given, question number 16 was to locate the reasons for the difficulty experienced by them in performing writing tasks. Question number 17 tried to analyze the reasons for their lack of interest in writing. Question number 18 asked for their views on improving their writing ability.

Interpretation of Data

From the data collected, it was observed that 64% of students are from schools in urban areas and 36% of them are from schools in rural areas. The medium of instruction for 94% of students is English and that of 6% of students in Tamil.

As far as the teaching of writing in schools is concerned, it is noted that the students are not given adequate number of written exercises. Only 21% of students have stated that more than 10 exercises are given. To the question whether oral discussion was held before they started writing, only 34% of students have said that it is conducted. Regarding the kinds of written exercises given, 58% have said that they are given letter writing, 22% of them stated that they are asked to write paragraph writing and 12% are given comprehension exercises. While 26% of the students stated that they have difficulty in organizing ideas 10% of them expressed the view that they have difficulty in planning. 20% of the students find it hard to write because of lack of vocabulary and their poor knowledge in grammar. 12% of them have said that preparation was rarely done before writing an exercise whereas 9% of students expressed their view that preparation was not done by teachers. 48% of them think that their writing skill will be improved if they are given regular practice. 8% of students feel that planning has to be done before writing, 11% of them said that they have to organize ideas before they set to writing. On the whole it was felt by students that the factors mentioned above accounted for their poor writing skills.

THE ECLECTIC APPROACH

The Process and Product Approach

Over the last few years, two major approaches have been adopted in the teaching of writing by teachers. These are the two popular approaches: i. Process and ii. Product. The product approach is the traditional approach, which deals with the production of parallel texts based on the models provided by the teacher. It lays emphasis on the rhetorical functions of scientific writing such as cohesive devices, paragraphs, etc.

Cohesive Devices

One of the important principles of paragraph writing is coherence. In order to achieve coherence, appropriate cohesive devices have to be used. In technical writing, such linking devices are used to indicate the logical progression of ideas. Some examples are given below:

- Land pollution is due to solid wastes.
- When an object is placed on one side or the other of a converging lens and beyond the focal plane, an image is formed on the opposite side.

The most commonly used connectives and their functions are as follows:

Table 1: Connectives and Their Functions

Connectives	Function
Before, prior to, before that, previously, earlier, while, as, just as, during, throughout, at that time, at that moment, as soon as, on that occasion, till then, since then, by the time	Indicating time relation
If, in case, unless, on condition that, so long as, provided that, supposing	Expressing condition
As, since, because, due to, caused by, hence, thus	Expressing cause
As a result, as a consequence, result in, consequently	Expressing result
Except, though, although, not even	Expression of concession
As, like, as if, as though, similarly	Expression of comparison
While, whereas, but, however	Expression of contrast
And so on, further, besides, along side, along with, and, or	Expression of addition
Namely, such as, like	Exemplification

A Coherent Paragraph

“Developing the ability to write effective paragraph is essential because all technical documents contain series of related paragraphs.” (Ashraf Rizvi, 2005).

The teacher who adopts the product approach should teach how paragraphs are structured by presenting the models. Improving the skills of writing paragraphs is essential because all technical reports, proposals contain paragraphs. Rajatanun (1988) stated that a paragraph is a unit of writing which expresses a central idea and consists of two kinds of sentences, a topic sentence and a number of supporting statements. The topic sentence introduces the paragraph and it will give clear idea about the content of the paragraph. To maintain the unity in a paragraph, supporting ideas should be expressed in a paragraph.

O'Donnell and Paiva (1993) gave more details about the essential parts of paragraph writing. The ideas in the paragraph should be presented in a logical order by using transitional words or connecting words, which indicate the relationship between ideas. A paragraph may have a concluding sentence, which restates the main idea in a different way. According to Reid (1994) the concluding sentence summarizes the material, offers a solution to the problem, predicts a situation, makes a recommendation or states a conclusion.

The main components of a paragraph are unity and coherence. Coherence is very important in paragraph writing. It brings together the main idea and the supporting details. In a coherent passage ideas are stocked together and one idea logically leads to the next idea.

One way to achieve coherence is the use of connectors called transitional words or phrases, sequential words that link one sentence to another (Wyrick 1999). Those connectors which are frequently used and their functions are discussed in the table 1. Without the correct arrangement of words, a sentence cannot be meaningful and without the correct arrangement of sentences a paragraph cannot be meaningful. This type of arrangements in a paragraph is determined by the nature of information and style of presentation. While writing a paragraph, students should focus on all these principles. According to the needs and requirements of the reader, the length of the paragraph may vary.

The process approach focuses mainly on the linguistic skills such as planning and drafting with less emphasis on the grammatical knowledge and the text structure. The process of writing consists of three main activities; pre writing, while writing, post writing. During the pre writing phase, the writer gives importance to the purpose of the audience for

whom they are writing. In the while writing, the writer reads, revises and reviews the written work to get an idea of the post writing stage the writer edits the text. It involves reorganizing and revising the text.

As both the process and product approaches have advantages, the various aspects involved in these approaches can be used for teaching writing. Therefore, it is advantageous to combine both the approaches in teaching writing skill.

METHODS AND MATERIALS

Experimental Study

The subjects chosen for the experiment were the students of I year Engineering. These students had entered a four year degree course leading to B.Tech degree. English is offered as a course of study to them in the first year. It prepares them to develop their communication skills so that they become competent to face placement interviews. The main objective of teaching English at this level is to improve their job prospects.

In the beginning, the students were asked to write a paragraph of about 100 words on the topic "Tsunami - its causes and effects" without offering any help. Then they were given the test material, which consisted of a paragraph on "Tsunami - its causes and effects" and the tasks designed on this theme. They were taught the principles involved in writing a coherent paragraph. Then the students were asked to do the tasks designed on the text. Finally they were asked to write a paragraph on the same topic. Both the paragraphs were evaluated in terms of content, grammar, spelling, and organization. The marks allotted for each criterion was 5. Their performance in writing paragraph I and II was compared. It was observed that the performance of students was better in writing paragraph II. It shows that the integrated approach has helped them improve their writing.

Analysis of the Tasks Provided in the Test Material (Appendix-III)

The theme of the text selected for the test was of general interest to students. It was a simple text, which suited the level of understanding of students. It contained the rhetorical function "cause and effect", in order that they became familiar with the use of this rhetorical function as technical writing is interspersed with these types of rhetorical functions.

The first task devised on the text given was an oral discussion activity. The researcher put questions to students and these questions helped them generate ideas related to the topic of the paragraph. This activity formed the pre - writing activity. It involved speaking and listening, which could provide a base for writing activities. Through this task, students are encouraged to interact with their peers.

The second task was to read the passage and to do exercises related to the paragraph.

The third task was related to their vocabulary development. The words selected were related to the theme. By doing that task students became familiar with the words corresponding to the text and develop their vocabulary.

The fourth and fifth tasks were on the usage of the rhetorical function "cause and effect". Samples of rhetorical functions were provided while teaching the use of these functions. The learners were asked to frame sentences using these samples. After they became familiar with this cause and effect relationship they were asked to collect similar such causal relations from their text books. Then they were taught how these rhetorical functions act as cohesive devices to link sentences. During this process, the use of other transitional devices such as comparison and contrast, sequence words and summative words were also taught to them.

Examples of Cause and Effect

Table 2

Cause	Effect
As	Thus
Since	Therefore
Caused	As a result
Because	Consequently

- The living conditions in Japan were terrible. Therefore many people moved to other countries for a better life.
- Tsunami is caused by sudden movements of the earth that happen under the sea.
- People moved to other countries from Japan as a result of poor living conditions in Japan.
- There were many people who were depressed because they had lost their homes, their money and their families.

All these activities progressed in systematic way. The learners were thus prepared for the major task of paragraph writing by means of these activities.

RESULTS

Analysis of the Performance of Students in Writing Paragraph-I

The written performance of students in writing paragraph writing I before offering guidance was analyzed.

In most of the papers, it was observed that there was no proper introduction. The topic sentence was not clearly stated. The ideas were not properly presented. Most of the paragraphs were incoherent and there was lack of organization. Most of the students wrote less content and ideas were limited. Many of them had committed grammatical mistakes. They had also committed spelling mistakes. While analyzing the mistakes committed by the students of four medical schools, Anchalee Sattayatham and Pong rat Ratanapinyowong (2008) pointed out that they did not present reasonable connection between ideas in their paragraphs. It caused coherence break and they also did not use transitional words to link the ideas together. Similarly the students of I year engineering also had not used connectives to link the different ideas together. Although the target learners could give the content, they were unable to express their ideas clearly. Hence the paragraphs were brief and not clear.

It was observed from the content of paragraph I written by students that they have scored 50% of marks as shown in the graphical representation on the statistical analysis of content in Appendix-II. This result shows that the students lack ideas. So paragraphs were short and not clear.

The statistical analysis of the total means for grammar given in Appendix-II shows that they have scored 63% of marks. Most of them were confused as to which tense must be used, either present tense or past tense.

From the statistical analysis of the total mean for spelling, it is observed that the students have scored 59% of marks as given in Appendix-II. They committed spelling mistakes in the paragraph writing- I.

The statistical analysis of the total mean for organization of ideas depicts that the students had scored 48% of marks in paragraph writing' —I. Most of the students do not know how to organize their ideas logically and systematically. The students have not used linking words to connect the ideas of the paragraph and hence the ideas have not been

presented in a logical sequence. This shows that there is an imperative need to improve their writing ability in writing a structured paragraph.

Analysis of the Performance of the Students in Writing Paragraph - II

The written performance of students in writing paragraph II after offering guidance was analyzed.

It was observed that most of the students performed better in writing paragraph II compared to writing paragraph I. The content level was good in most of the papers, and they committed very few grammatical and spelling mistakes. The ideas presented by them were also satisfactory in terms of clarity and organization, etc. This shows the usefulness of the integrated approach.

The statistical analysis of the total mean for the content of paragraph II shows an increase in the percentage of marks from 50% to 62%. This shows that students fared well in writing paragraph II compared to writing paragraph -I. The oral discussion activity on the topic related to the passage had helped them increase the content.

The statistical analysis of the total mean for grammar was 67% of marks in writing paragraph II.

The statistical analysis of the total mean for spelling was 64% of marks in writing paragraph II. Students have learnt the correct spelling of complex words by reading through the text.

The statistical analysis of writing paragraph II for organization of ideas was 55% and for writing paragraph I it was 48%. This showed that the students' performance in writing in terms of organizing ideas had improved. This is because of the fact that students were taught how the ideas need to be arranged in a logical sequence through the use of cohesive devices. It is observed that the students had used a number of expressions related to cause and effect such as *because, as a result, caused, therefore, hence, due to, since* in paragraph II.

Over All Analysis of Paragraph Writing I and Paragraph Writing II

It was observed from the statistical analysis of the total mean for paragraph writing -I and paragraph writing II that the total average has increased from 55% to 62% (as shown in Appendix II). This shows that there was a significant difference between writing paragraph- I and writing paragraph -II. The findings indicated that the students performed well in writing paragraph -II.

CONCLUSIONS

The effectiveness of the approach has been established through the study. It is concluded that the writing skill of the professional learners could be developed by adopting the eclectic approach which is a combination of product and process approach. The well designed tasks have helped the learners to perform better.

The features of both these approaches will train the students to be self independent and help them in writing other kinds of written tasks in their professional context. It also empowers them in the world outside the class room.

REFERENCES

1. Bhatnagar, Piyush, "Written communication", Rajat publication, New Delhi-110002, India. pp. 1-3, 2008.
2. Byrne D, "Teaching writing skills", Longman group, Harlow, pp. 1-7, 1979.

3. Brown H. D. "Teaching by principles: An interactive approach to language pedagogy", Englewood Cliffs, NJ: Prentice hall regents, pp. 320, 1994.
4. Beare K, "Teaching writing skills" Retrieved September 09, 2009, from http://esl.about.com/cs/teaching_technique/a/a_twite.htm,1997.
5. Bacon, Sir Francis, <http://www.auodav.com/reading-talking-writing-quotes-Francis-Bacon-reading-makes-a-fuilm-conference-a-ready-man-and-writing-an-exact-man.html>.1561-1626.
6. Graham S, and Perin D, "Writing next: Effective strategies to improve writing of adolescents in middle and high schools", A report to Carnegie Corporation of New York, Washington, DC: Alliance for excellent education, pp. 3-25, 2007.
7. Gunn C. J., "Engineering graduate students as evaluators of communication skills", Proc. ASEE Annual Conf; Washington, DC, USA, pp. 287-290, 1995.
8. Harmer J, "The practice of English language teaching", England: Pearson Education Limited, 2006.
9. Heller M. F, "Reading-writing connection: From theory to practice", White plains, NY: Longman, 1995.
10. Liu M. & Braine G, "Cohesive features in argumentative writing produced by Chinese undergraduates", pp. 623-624, 2005.
11. Mariam Mohamed Nor and Napisah Kepol, "The use of cooperative tasks in ESL composition by form one ESL writing students. Teaching and learning of English in a second language" Universiti pendidikan Sultan Idris, 2005.
12. Norrish J, "Language learners and their errors", London: Macmillan press, pp. 63, 1983.
13. O'Donnell T. D and Paiva J. L, "Independent Writing", Second edition, Massachusetts: Heinle & Heinle publishers, pp. 2-4, 1993.
14. Pincas A, "Teaching English writing", London: Macmillan. pp. 22, 1982a.
15. Rizvi, Ashraf M, "Effective technical communication", Tata McGraw-Hill publishing company limited, New Delhi, pp. 327- 328, 337-345, 2005.
16. Reddy, Gomathi K, "Paragraph writing", Seasons Publishing, Vadapalani, Chennai-26, pp. 1-19, 34-50, 2002.
17. Rajatanun K, "A refresher course in writing", Second edition, Bangkok:Thammasat University press, pp. 95, 1988.
18. Reid J. M, "The process of paragraph writing", New Jersey: prentice hall regents, pp. 42, 1994.
19. Raman, Meenakshi, Sharma, Sangeeta, "Technical communication: principles and practice", Oxford University press, New Delhi, pp. 200220, 2006.
20. Ross E and Roe B. D, "An introduction to teaching language arts", Chicago: Holt, Rinehart and Winston, 1990.
21. Sattayatham, Anchalee and Ratanapinyowong, Pong rat "Analysis of errors in paragraph writing in English by first year medical students from the four medical schools at Mahidol University", International journal, Vol. 8, pp. 30, 2008.

22. Seely John, "The Oxford guide to Writing and Speaking", Oxford University Press, New York, pp. 237, 256-266, 1998.
23. Sovik N, "Writing: on developmental trends in children's manual and composition writing. Hauppauge, NY: Nova Science Publishers, 2003.
24. Tierney R, "The effects of reading and writing upon thinking critically", Reading research quarterly 25: pp. 136-137, 1989.
25. Tierney R. J. and Leys, M, "What is the value of connecting reading and writing? In Bruce, T. P. (Ed.), Convergences: Transactions in Reading and Writing" Urbana, IL: National council of teachers, pp. 38-45, 1984.
26. Tribble C, "Writing", Oxford: Oxford University press, pp. 39, 1996.
27. Truk, Christoper, Kirkman,John," Effective writing :Improving scientific, technical and business communication", Spon press Taylor and Francis group, London and New York, second edition, pp. 1-6, 2003.
28. Wyrick J, "Steps to writing well". Florida: Harcout Brace and company, pp. 211, 1999.
29. Zheng Y, "Providing the students with effective feedback in the writing process", Teaching English in China (36) pp. 41-45, 1999.
30. Zvacek S. M, "Word processing and the teaching of writing, Computers in human behavior", Vol: 4(1), 29-35, 2002.

APPENDICES

Appendix – I Questionnaire for the Students of I Year B.Tech

- STUDENT PROFILE :
1. NAME :
 2. SEX :
 3. NAME OF THE COLLEGE :
 4. LOCATION OF YOUR SCHOOL : A) RURAL B) URBAN
 5. MEDIUM OF SCHOOL EDUCATION : A) TAMIL B) ENGLISH C) TELUGU
 6. COMMUNITY : A) B.C B) F.C C) MBC D) S.C
 7. FATHER'S OCCUPATION : A) EMPLOYED B) BUSINESS C) AGRICULTURE
D) TEACHER E) OTHER
 8. MOTHER'S OCCUPATION : A) EMPLOYED B) BUSINESS C) AGRICULTURE
D) TEACHER E) HOUSEWIFE F) OTHER
 9. FATHER'S INCOME PER MONTH : A) BELOW 10000 B) ABOVE 10000 C) ABOVE 20000
D) BELOW 25000

10. MOTHER'S INCOME PER MONTH : A) BELOW 10000 B) ABOVE 10000 C) ABOVE 20000
D) BELOW 25000
11. PERCENTAGE OF MARKS SECURED : A) 90% B) 80-90 C) 70-80 D) 60-70 E) 50-60 F) BELOW 50
IN THE +2 EXAMINATION IN ENGLISH
12. NUMBER OF WRITTEN EXERCISES
GIVEN IN LANGUAGE CLASSES : A) 5 B)10 C) ABOVE 10
13. ORAL DISSCUSION WAS HELD BEFORE : A) MOSTLY B) RARELY C) NOT GIVEN
STARTED WRITING ON THE GIVEN TOPIC
14. WERE YOU GIVEN TIME FOR REVISING : A) MOSTLY B) RARELY C) NOT GIVEN
YOUR WRITTEN WORK
15. KINDS OF WRITTEN EXERCISES : A) LETTER WRITING B) PROSE WRITING
GIVEN IN THE CLASS C) PARAGRAPH WRITING D) COMPREHENSION
16. WHILE DOING THE EXERCISES : A) ORGANIZING IDEAS B) PLANNING
YOU HAVE DIFFICULTY IN C) VOCABULARY D) GRAMMAR E) ALL OF THE ABOVE
17. STUDENTS DO NOT SHOW INTEREST IN WRITING EXRCISES DUE TO THESE REASONS
A) MEMORIZE AND REPRODUCE
B) POOR KNOWLEDGE OF GRAMMAR [YES/NO]
C) LACK OF EXPERIENCE IN WRITING ON YOUR OWN [YES/NO]
18. PREPARATION WAS DONE BEFORE WRITING : A) MOSTLY B) RARELY C) NO PREPARATION
19. WHICH WILL IMPROVE YOUR WRITING ABILITY
A) REGULAR PRACTICE - MOSTLY/RARELY/ NOT GIVEN
B) DISCUSSION WITH THE TEACHER BEFORE WRITING –MOSTLY / RARELY / NOT HELD
D) PLANNING
E) ORGANIZING IDEAS

APPENDIX – II

Graphical Representation of Marks Obtained by Students in Paragraph Writing -I and Paragraph Writing- II

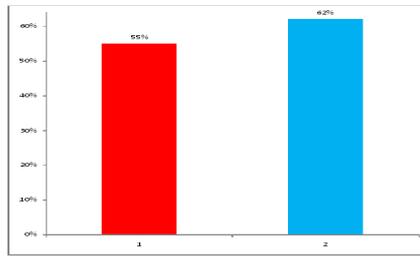


Figure 1: Statistical Analysis of Total Mean for Paragraph Writing I & Paragraph Writing II

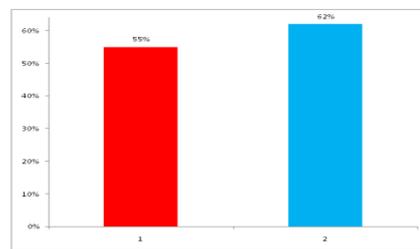


Figure 2: Statistical Analysis of Total Mean for Content

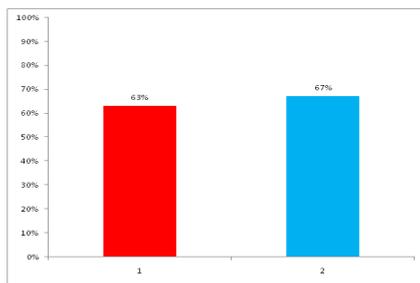


Figure 3: Statistical Analysis of Total Mean for Grammar

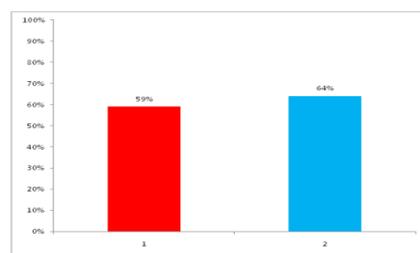


Figure 4: Statistical Analysis of Total Mean for Spelling

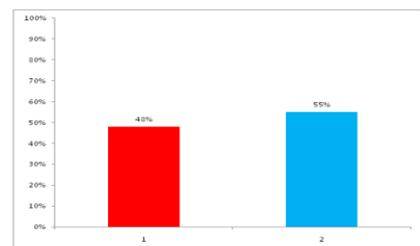


Figure 5: Statistical Analysis of Total Mean for Organizing Ideas

APPENDIX – III

Test Material

I. Group Discussion

- Describe a disaster, which recently occurred in India
- What causes a Tsunami?
- What are the effects of a Tsunami?

II. Read the Text and Answer the Question Given Below

A magnitude 9.0 quake ravaged Japan Friday, shaking buildings in Tokyo for several minutes. Japanese officials confirm at least two thousand dead, with thousands more injured or missing. Within the same 24-hour period more than 150 aftershocks of magnitude greater than 4.5 occurred. Tsunami is a Japanese word meaning "harbour wave" that refers to a series of large ocean waves that hit a shoreline. These waves may be as long as 100km and travel across the ocean at speeds of up to 800kmh. There may be a constant stream of waves that batter the shore for between 10 and 60 minutes. Tsunami is caused by sudden movements of the earth that happen under the sea.

The earth sits on about a dozen tectonic plates. Undersea earthquakes happen when one of these plates is rubbing against another at a plate boundary. The two plates may become stuck as the heavier plate tries to slide under the lighter other. This causes a buildup of pressure in a process known as subduction. As the heavier plate continues to slide beneath the lighter plate, it causes the lighter plate to bend downwards with the pressure. A point comes when the lighter plate can no longer take the intense pressure and suddenly snaps back up to the surface where it had been before. The incredible force of the earth plate shooting upwards in the water causes huge rise in sea level. A vast body of water moves upward - like a huge mountain of water in the sea.

A Tsunami (pronounced soo-NAHM-ee) is a series of huge waves that occur as the result of a violent underwater disturbance, such as an earthquake or volcanic eruption. The waves travel in all directions from the epicenter of the disturbance. The waves may travel in the open sea as fast as 450 miles per hour. As they travel in the open ocean, Tsunami waves are generally not particularly large—hence the difficulty in detecting the approach of a Tsunami. But as these powerful waves approach shallow waters along the coast, their velocity is slowed and they consequently grow to a great height before smashing into the shore. They can grow as high as 100 feet; the Indian Ocean Tsunami generated waves reaching 30 feet.

The effects of the Tsunami on the country during this period range from destruction damage, death, injury, millions of dollars in financial loss, and long lasting psychological problems for the inhabitants of the region. A Tsunami's tidal waves batter the shoreline can destroy anything in their path. This includes boats, buildings, houses, hotels, cars, trees, telephone lines -and just about anything else in their way.

Once the waves have knocked down infrastructure on the shore the waves continue inland for up to another mile. As the water rushed across the land it can sweep away yet more trees, gardens, buildings, cars and other man made equipment. Boats have often been hurled into the sky and iron parking meters have been bent to the ground. Tsunamis often hit poorer and less-developed countries around South Asia that are close to the "ring of fire" in the

Pacific Ocean. Because these countries are poor their buildings are not built strongly to withstand natural disasters such as Tsunami. This means that when the water hits the buildings they are easily washed away. There is very little warning before Tsunami hit. This means that people living in towns and villages on the coast do not have time to escape. Unfortunately one of the biggest and worst effects of a Tsunami is the cost to human life. Hundreds and thousands of people are killed by Tsunamis. Tsunami victims suffer psychology problems for days and weeks after the destruction. This could even continue for years -often their entire lifetime.

A study by the World Health Organization on survivors of the Tsunami in Sri Lanka on December 24, 2004 found that three to four weeks after the Tsunami between 14 and 39 per cent of the children had post traumatic stress disorder (PTSD).

In another study 41 per cent of adolescents and approximately 20 percent of those adolescents' mothers had PTSD four months after the event. Many people from the Peraliya area of Sri Lanka where 2,000 people died and 450 families became homeless had problems up to two years after the Tsunami. They were anxious and stressed because they felt like their life was in danger from another Tsunami. There were also people who were depressed because they had lost their home, their money or their business in the Tsunami. Many still had post traumatic stress disorder. Illness such as malaria form when water is contaminated. This can cause more death and sickness. Often the infrastructure such as sewage and fresh water supplies for drinking are damaged from the Tsunami. This makes it more difficult for people to stay healthy and for disease to be treated. In these conditions for disease are likely to spread.

III. Match the Following Words with their Meanings

- | | |
|---------------|--|
| • Tsunami | a) Faults or volcanic action |
| • Devastating | b) Exertion of continuous force that of the atmosphere |
| • Earthquake | c) Series of high waves caused by disturbance of ocean floor |
| • Pressure | d) Very effective |

IV. Language Development

Here are some examples to show "cause and effect" relationship.

- Living condition in Japan was terrible. Therefore, many people moved to other countries for a better life.
- Tsunami is caused by sudden movements of the earth that happen under the sea.
- People moved to other countries from Japan as a result of poor living conditions in Japan.
- There were many people, who were depressed because they had lost their home, their money and-their family.

V. Match the Causes with Effects and Frame Sentences Using Suitable Causal and Effect Expression

- | | |
|--------------------------------------|-----------------------------------|
| • The effects of the Tsunami | a) Earthquake, volcanic eruptions |
| • Often the most destructive Tsunami | b) Post traumatic stress disorder |
- is caused by

- Flood water spreads all areas
- 14 percent of children are affected by
- c) Destruction, damage, death, injury, etc.
- d) This can cause disease to spread in the stagnant water

VI. Write a Paragraph on Tsunami and its Devastating Effects.