4. DESIGN OF THE PROPOSED APPROACH - MULTIMEDIA SUPPORTED PROCESS APPROACH

4.1. INTRODUCTION

This chapter deals with the procedures involved in conducting the experimental study. The objective of this study was to test the effectiveness of Multimedia Supported Process Approach (MSPA) in developing the writing skills of the students of Engineering. The different phases of the experiment, the materials used for the study and the instructional procedure are described comprehensively.

Two instructional modules were designed for conducting the experimental study. The first module is on report writing and the second module is on discursive essays. In both the modules, multimedia tools were integrated at every stage of the writing process. The modules were in alignment with the principles of the Cognitive Theory of Multimedia Learning (CTML). The description of the two modules and the sample tasks are explained in detail.

4.2. STAGES IN THE STUDY

The research study is a two-stage process consisting of a pilot study and an experimental study. The pilot study was conducted at B.S. Abdur Rahman University. The experimental study was carried out in three institutions, namely B.S. Abdur Rahman University, Tagore Engineering College and Asan Memorial College of Engineering. It was a true experimental design consisting of control and experimental groups. Each group had a pretest and post test. The control groups were taught using traditional instruction, and the experimental groups were trained using multimedia instruction.
4.2.1. Restatement of Major Hypothesis

In alignment with the objectives of the study, the hypothesis was formulated as "The experimental group which is exposed to the Multimedia Supported Process Approach (MSPA) will demonstrate better writing skills than the control group which is exposed to the traditional method". The improvement in writing skills is assessed at four levels, namely content, coherence, lexical and grammatical level.

4.3. PHASES OF THE STUDY

The study underwent the following phases, namely i) design of a new approach to teaching writing ii) material design phase iii) grading phase iv) piloting phase v) experimental phase and vi) evaluation phase. Initially the new approach named Multimedia Supported Process Approach (MSPA) for teaching writing was designed. Subsequently, two modules were developed for fostering writing skills. The materials were graded from simple to complex. These materials focused on improving the writing of students at four levels such as content level, lexical level, coherence level and grammatical level. After the design of materials, the study was piloted with a sample size of 30 students. Later the experimental study was carried out with a sample size of 186 students. Finally the efficacy of the new approach was tested.

4.4. PROPOSED APPROACH ON WRITING PEDAGOGY

As mentioned earlier a new approach named Multimedia Supported Process Approach (MSPA) was designed to conduct the study. The proposed approach is based on the principles of White and Arndt’s model of the process approach to writing. According to White and Arndt, writing is a recursive process. The six-stage model is based on the three premises of the process approach to writing such as generating ideas, drafting, and rewriting. It is illustrated in the figure 4.1.
White and Arndt recommend six stages in writing such as 1. generating ideas 2. structuring 3. drafting 4. focussing 5. reviewing and 6. evaluating. The same concept is improved upon in the proposed approach by integrating multimedia technologies at every stage of process writing. The principles of CTML were used for the design of writing tasks.

4.5. DESCRIPTION OF THE PROPOSED APPROACH
The three circles in figure- 4.2 represent three aspects on which the proposed approach (MSPA) is based. They are i) Process approach to writing ii) Cognitive Theory of Multimedia Learning and iii) Technology integration. The three circles also represent the three stages of the process approach, namely pre-writing, drafting and rewriting also called as trigger zone, performance zone, and assessment zone.

In the trigger zone, there will be idea generation strategies such as brainstorming, questioning and discussion. These learning activities will be supported by multimedia tools such as video clips, digital mind maps, word clouds, and web-based interactive grammar exercises. During the while writing stage, the students will organize their ideas using graphic organizers. Peer editing and self-editing activities will be initiated using technology. In the post-writing stage, there will be testing and feedback activities. In this approach, the focus is on improving the four components of writing such as content, vocabulary, cohesion and coherence and grammatical resource.

The cyclical representation given in figure-1 indicates the recursive nature of writing process. The principles of the Cognitive Theory of Multimedia Learning are applied to the design of tasks. This theory has been empirically tested in the field of Instructional Design (I.D). There is conclusive evidence on the efficacy of CTML in educational technology. The various cognitive principles associated with this theory has already been elucidated in table 2.1. Since the principles of CTML provide a matrix for instructional design, it is chosen as the theoretical framework of the study.

This study strives to determine if the Multimedia Supported Process Approach (MSPA) would be an effective means of improving the writing skills of the students when compared to the traditional method of teaching writing that involves the use of blackboards, and the use of model texts. The stages of the proposed approach are presented in Figure 4.3.
4.5.1. Components of the Proposed Approach

Figure 4.3: Different Stages in Multimedia Supported Process Approach (MSPA)
The different stages of the Multimedia Supported Process Approach are elucidated below.

4.5.2. Pre-Writing Stage

There are six steps in the prewriting stage. The prewriting stage is also referred as the trigger zone. The objective of the trigger zone is to provide scaffolding for developing the content, vocabulary, grammar, and structures. It has five sub-stages. The first stage is multimodal brainstorming. During this stage, the students will be exposed to multimedia input such as visuals, audio, and video clips related to the writing genre. The second stage is the vocabulary input stage. Vocabulary items related to the task will be discussed using multimedia word clouds. In the third stage, they will be subjected to discourse markers. The purpose of stage-III is to enable them to write effectively with better cohesion and coherence. In the fourth stage, the students will be exposed to web-based grammar instruction. During this stage, the students will learn grammar components related to the writing task. In the last stage of pre-writing, the focus will be on structural development. The students will be exposed to structures related to the writing tasks using multimedia mind mapping tools.

4.5.3. While Writing Stage

Having helped them generate the content during the prewriting stage through the use of multimedia tools, the students are guided to organize their ideas during this stage. This stage is also called as performance zone. It comprises of six sub-stages. In the first stage, the focus is on organizing the ideas. The students will be asked to organize their ideas using the graphic organizers. In the second stage, the students will construct their thoughts collaboratively. The students will write the first drafts during the third stage of writing. In the fourth stage, there will be editing and revision activities using the Microsoft word reviewing tool. At this juncture, editing and revision checklists will be provided to them. In the fifth stage, the students
will be exposed to the rubrics related to the writing task. In the final stage of while writing, they will write the final draft.

4.5.4. Post Writing Stage

The post-writing stage is named as the assessment or the evaluation zone. During this stage, the students will receive feedback from the teacher and peers. They will make necessary changes to their final drafts. Sultana states, “Unlike the teachers who adopt the traditional approach by exposing them to models of texts, the teachers who advocate Process approach to writing prepare the students for the major task of writing by making them do a variety of activities” (102). Thus the students are guided by the teacher throughout the process of writing, thereby helping them produce an effective piece of writing.

4.6. DESIGN OF MODULES

Two modules were designed for conducting the study. Module one is on report writing and module two is on discursive essays. The first part of each module describes the tasks related to traditional instruction whereas the second part deals with the Multimedia Supported Process Approach (MSPA). The stages of both traditional approach, as well as Multimedia Supported Process Approach, are described elaborately in the later part of this chapter. The stages associated with Traditional Approach for report writing is dealt with in 4.7.1 and the stages related to Multimedia supported process approach is described in section 4.7.2. Likewise the stages pertaining to Traditional Approach for discursive essays is dealt with in 4.8.2 and the stages related to Multimedia Supported Process Approach is described in section 4.8.3. The first part of the module was tested for the control group and the second part of the module was tested for the experimental group.

4.7. INTRODUCTION TO MODULE ONE
The objectives, description of tasks, and the description of multimedia tools used in the study are explained here. The genre chosen for module one is report writing. The instructional hours for the control groups are ten hours per module. Similarly, ten instructional hours were allotted to the experimental groups.

4.7.1. Objectives of Module One

Report writing is an important genre for the students of engineering. They are expected to write lucid reports as a part of the academic writing. They are supposed to write different kinds of reports such as accident reports, incident reports, lab reports, feasibility reports and so on. Hence report writing was chosen as one of the teaching components.

The objectives of this module are i) To enable the target learners to write an accurate report. ii) To help them use appropriate vocabulary. iii) To help them write with proper cohesion and coherence. iv) To help them to write grammatically correct sentences.

4.7.2. Instructional Method for Control Group: Module One

Before the instructional phase, a pretest will be conducted to both groups. (Appendix-2). The pretest is diagnostic by nature. The objective of the pretest is to check the parity between the control and the experimental groups. After the pretest, the control group will be subjected to traditional instruction, and the experimental group will be exposed to multimedia instruction. The procedure for the control group is explained below.

Stage-1: Teaching the Conventions of the Genre Using Models.

Initially, the students will be exposed to sample reports as per the traditional approach. Model reports will be read, and the features of the genre highlighted. During this stage, the structure of the report will be explained to the students. They will be informed that the report should
contain an introduction, a body, and a conclusion. At this stage, the focus will be on exposing the learners to some sample reports. It is believed that exposing the target learners to samples will enable them to write better.

**Stage-2: Content Development and Organizing Skills**

The students will be asked to develop the content individually based on the discussions and the samples provided in stage-1. They will be instructed to write a report on an accident that took place at a construction site. The students will be instructed to prepare and organize the content based on the sample they viewed in stage one. At this juncture, some sample structures that will be helpful to draft reports will be written on the board. Some jumbled sentences and paragraphs related to reports will be given and they will be asked to organize them.

**Stage –3: Vocabulary Input**

During this stage vocabulary related to the writing task will be discussed. Thereafter, a word list and a list of discourse markers will be provided to the students.

**Stage-4: Grammar Focus**

Grammar items related to the genre such as passive voice, tenses, and reported speech will be taught. Examples will be written on the board along with the rules. Then more samples will be given and the learners will be asked to change the given sentences from active to passive form.

**Stage –5: Mechanics of Writing**

The students will be exposed to formal aspects of writing with emphasis on punctuation and spelling. They will be given some sample sentences with spelling and punctuation errors. The students will be asked to correct them.
Stage-6: Composing the Final Product.

The students will be asked to write their drafts individually. They will be instructed to use the content, structures, and vocabulary that they were exposed to in the prewriting stages. After the teaching phase, a similar task will be given as a posttest.

4.7.3. Instructional Method of the Experimental Group: Module One

The procedure of the experimental group is based on the proposed approach. It has five stages of prewriting, six stages of while writing and one stage of post writing. Before they set to do the task on report writing the students will be given activities on the various stages of prewriting. The descriptions of the stages and the activities which involved the use of multimedia tools are given below. As indicated earlier the number of instructional hours will be the same for both the groups.

Stage: 1: Brainstorming

Initially the students will be asked to view a video clip on guidelines to report writing. There will be some comprehension questions related to the video clip. Subsequently, a video clip about funny construction accidents will be played. During this stage, the learners will be asked some questions about the kinds of accidents that take place at construction sites. They will be encouraged to describe an accident they have witnessed or heard. Visual prompts and video clips related to accidents will be screened to help the learners generate content. A news clip from breaking news.com will be played as a next step. The objective of the video clip is to expose the learners to real language in context. The videos are expected to provide much-needed input during the prewriting stage. The students will be asked to generate as many Wh-questions as possible about the video they viewed. One student is expected to generate Wh-questions, and the other is supposed to answer them. As a post-viewing activity, they were asked a few
comprehension questions related to the video clips. The tasks of stage one is given in (Appendix-3)

**Stage: 2: Generation of Vocabulary**

After viewing the video clip, the students will be asked to prepare a glossary of terms related to the clips as a collaborative task. Lexical competence has been identified to be the most significant predictor of general language ability (Carter & McCarthy, 97). Hence essential vocabulary will be generated using the word cloud ‘Tagxedo’ (Appendix-4). As an extension activity, they will be exposed to a podcast on enhancing vocabulary for academic writing.

**Stage-3: Tasks on Discourse Markers**

The students will be exposed to a podcast on discourse markers to help them to link the words and ideas effectively, and to help them write cohesively. Subsequently, the students will prepare word clouds on discourse markers using a word cloud generator ‘Wordle’. After teaching them the use of discourse markers they will be given some gap-filling tasks on discourse markers. The first exercise will be on choosing best linkers from the given options. The second task will be a gap-filling activity. The learners will be asked to choose the correct linking word from the word cloud and fill in the missing words. Finally, the students will take an online quiz on discourse markers. The tasks on discourse markers are given in (Appendix-5).

**Stage-4: Grammar Focus**

According to Weaver “students need guidance in understanding and applying those aspects of grammar that are most relevant to writing”(64). Grammar exercises related to the report writing such as passive voice, tenses and reported speech will be practised using web-based instruction. A Pinterest board for grammar will be created. Infographics will also be
designed for the grammar items for better remembrance. The Screenshots of the web-based grammar tasks are given in (Appendix-6).

**Stage-5: Structural Fluency**

The purpose of this stage is to train the students on the use of structures related to reports. Structures are essential for the learners to form ideas and to organize them in a linear argument. According to McCutchen lack of structures constrains novice writers (13). The students will be told that a report has three sections namely, introduction, body, and conclusion. Sample structures for all the three categories will be given in the form of a bubble. The students will be required to pick the expressions from the bubble and classify them into three categories such as introduction, body, and conclusion. After that, they will be given practice in writing recommendations using visual prompts.

Eventually, they will be asked to watch a video on safety tips at construction sites and write some recommendations based on the video clip. The structural fluency exercises are given in (Appendix-7).

**Stage-6: Organizing Ideas**

The students will be asked to organize the ideas that they discussed during the pre-writing stages, use appropriate vocabulary, discourse markers and structures that are practised in the pre-writing stages. The layout of a report will be provided using graphic organizers. The layout is expected to provide them a clear idea on how to format the report and organize the content under different sections such as introduction, body, and conclusion. Finally, more practice will be given for sentence level organisation and paragraph level organisation. As an extension activity, the researcher will prepare a power point presentation on improving cohesion and coherence and share it with the students using SlideShare (Appendix-8).
**Stages- 7: Collaborative Writing**

Research evidence has strongly favoured collaboration for effective learning outcomes (Barkley et al.157-167). Hirvela remarks that collaborative writing fosters active learning (7). During this stage, the students will work in groups and write collaboratively.

**Stage 8: Writing the First Draft**

After the collaborative writing stage, the learners will construct their first draft individually.

**Stage 9: Editing and Revision Activities**

According to Flower and John Hayes, good writers spend more time rewriting their work than drafting it. In fact, the more skilled the writer, the more time he or she spends in revision (106-13) Hedge echoes the same view. She remarks that revision is an integral part of the writing process (26). After finishing the first draft, the students will peer edit the documents using Microsoft Word reviewing tool. The samples of peer reviewed documents are given in Appendix 9.

**Stage-10: Explanation of Rubrics**

The rubrics will be explained to the students. The rationale behind providing the rubric is to enable the students to understand the parameters of assessment. According to Wilson “the rubric determines the effectiveness of evaluation” (44). The rubric is given in Appendix-10.

**Stage-11: Writing the Final Draft**

After the teaching phase, a report writing task will be given to the students to check the effectiveness of the new approach. A similar task will be given as posttest (Appendix-11).
4.8. DESCRIPTION OF MODULE TWO

The same process will be replicated using different genre-discursive essays for better validity. In module two, discursive essays are chosen because they correspond to the writing requirements at the University level.

4.8.1. Objectives of Module Two

Discursive writing is one of the best ways to trigger the cognitive skills. It is one of the important genres of writing at the engineering level as the style of written discourse enables the students to gain a deeper understanding of the topic. Discursive essays form an integral part of writing in the English course books of first year engineering. Hence, discursive essays are chosen.

The objectives of this module are i) To enable the target learners to write discursive essays with appropriate illustrations and well-supported ideas. ii) To help them to use proper transitions in paragraphs and logically arrange the ideas. iii) To help them use a broad range of contextual vocabulary, iv) To help them construct grammatically correct sentences. Before the instructional phase, a pretest on discursive essays will be administered to both the groups (Appendix-12).

4.8.2. Instructional Method for the Control group

Stage-1: Teaching the Conventions of the Genre using Models.

Initially, the students will be given some model discursive essays. Subsequently, they will be asked to observe how the writer argues and presents his opinions carefully. They will also be instructed to observe the language and style in the given samples. Then they will be told to write a three paragraph structure consisting of an introduction, body, and a conclusion. They will also be instructed to carefully notice what each
paragraph contains and follow the same pattern for their essays. It is believed that exposing them to samples will help them to write better.

**Stage-2: Developing the Content**

During this stage, they will be asked to plan on the given topic. Sample structures for writing the discursive essays will be given. Structures for writing the introduction and conclusion will also be given to them. The key ideas related to the essay will be generated.

**Stage-3: Providing Wordlist and Linking Ideas**

A collection of content words related to the essay will be given. A list of linking words will also be provided. The functions of discourse markers will be explained, and the list of discourse markers will be written on the blackboard.

**Stage 4: Grammar Focus**

Grammar items related to the discursive essays such as the use of the tense forms and sub-verb agreement will be taught using the structural approach. Then examples will be written on the board along with the rules. Subsequently, samples will be given, and the learners will be asked to change a sentence from one tense to another. They will be informed to do the follow-up exercises given in their textbooks.

**Stage 5: Explaining the Mechanics of Writing**

The rules of punctuation and spelling will be discussed. Initially, formal aspects of writing and practical examples will be given to emphasize the importance of punctuation and spelling. Some sample sentences with spelling and punctuation errors will be given. The students will be asked to correct them. Some passages with errors will be given to the learners for editing.
Stage-6: Composing the Final Product

After the traditional method of teaching, they will be asked to write a discursive essay. After teaching the control group using the product approach, the experimental group will be instructed using the Multimedia Supported Process Approach. It is explained below.

4.8.3. Instructional Method for the Experimental Group

Stage-1: Generating and developing ideas.

Initially, the students will be instructed to listen to a podcast on discursive writing. The podcast will focus on writing an effective discursive essay about three aspects such as writing a good introduction, argument and conclusion. During this stage, the students will be exposed to brainstorming activities. Subsequently, the instructor will expose the students to an audiovisual presentation on the exploitation of children using the software photo story. Based on the photo story there will be some comprehension questions and brainstorming tasks.

After the photo story presentation, there will be a cubing activity. The objective of the cubing activity is to enable the learners to generate more ideas. Axelrod and Cooper describe that cubing involves looking at an idea from six different points of view each representing one of the six sides of a cube. The six ways to generate ideas are i) describing ii) analysing iii) comparing iv) associating v) applying and vi) arguing (71). An archived BBC news clip will be used for the cubing activity. The six principles suggested by Cooper and Rise will be followed in the design of tasks. After the cubing activity, they will be asked to view a short film on child labour. The objective behind the short film is to provide real life examples to the learners. Some previewing questions on child labour will be raised initially. After viewing, they will be instructed to report on the short film. Finally, as an extension activity, the students will be invited to enact a role play about child exploitation. The tasks of stage one are given in (Appendix-13).
Stage-2: Generation of Vocabulary using Word Webs

After the six levels of idea generation, there will be a vocabulary generation activity. The students will be asked to enlist the new words they heard in the news item in stage one and write suitable synonyms as a group work. Then the vocabulary related to child labour will be discussed. After brainstorming the vocabulary items, the students will create word-webs. Subsequently they will be required to do a gap filling activity. Eventually, there will be a vocabulary matching activity and an exercise on unscrambling words. As an extension activity, the students will be asked to create word clouds in groups using the online word cloud generator ‘Wordle’. The tasks of stage two is given in (Appendix-14).

Stage-3: Exposure to Discourse Markers

The appropriate use of discourse markers would contribute to the proper cohesion of the text. According to Brinton et al. it serves both textual, pragmatic and interpersonal functions. He states that it has various discourse functions such as information indicators, sequence markers, response markers and confirmation seekers. He also states that teaching discourse markers would be very useful in the second language classroom. (35) Halliday and Hasan state that discourse markers have an effective function in the overall organisation (33). Hence a few tasks related to discourse markers will be given to enable the student to write with better cohesion. The instructor will create a power point presentation on discourse markers and share his presentation using slide share.

A word-cloud on discourse markers will be created using the tool “word it out”. In task one, the students will be supposed to pick the linking expressions from the cloud and put it in the appropriate tabular column such as sequence words, showing results, concluding and so on. In task two a range of discourse markers related to two categories such as introducing examples and expressing alternative viewpoints will be dealt with. The
students are supposed to choose the appropriate discourse markers from the given corpus and classify them into three groups. This task is similar to the exercise on discourse markers provided in module one. The tasks on discourse markers is given in (Appendix-15)

**Stage-4 Grammar Focus**

The students will practice web-based tasks on present simple, present progressive, and past progressive forms. They will be exposed to interactive web-based grammar games and quizzes. The gap filling tasks and quiz will be created using version-6 of ‘Hot Potatoes’. The ‘Hot Potatoes’ is a software that is used for creating interactive web based tasks.

Since the genre was discursive essays, they will also be subjected to tasks on subject-verb agreement. The teacher will upload a PowerPoint presentation on the sub-verb agreement in the slide share. The students will be asked to view the presentation and take the quiz on the sub-verb agreement. The flash quiz will have 25 questions. This will be followed by some tasks on prepositions. As an extension activity, the students will be given web-links to practice interactive online games on tenses and parts of speech (Appendix-16).

**Stage-5: Structural Fluency**

During this stage a worksheet on structures related to discursive essays will be given. After that a worksheet with structures related to functions such as introducing, expressing personal opinions, talking about possibilities, making generalisations, expressing views, giving reasons, talking about pros and cons, giving examples, summarizing and writing concluding statements will be given. A task on arranging the jumbled words in the right order and framing meaningful sentences will also be given. Finally, Web links to improve the structure of essay will be provided as an extension task. The tasks on structural fluency are given in (Appendix-17).
Stage-6: Organizing Ideas

During this stage the students will be asked to organize the ideas discussed during the pre-writing stages, using appropriate vocabulary, discourse markers, and structures they practised in the pre-writing stages. They will be asked to organize their thoughts as a mind map using the tool ‘Edraw’. The students will collate their ideas and present them as a visual mind map. They will be oriented on the features of cohesion and coherence. Subsequently, a jigsaw paragraph arrangement activity will be given. A seven-paragraph article from an electronic newspaper will be provided in a jumbled form, and the students will be asked to arrange the paragraphs logically. Tasks on organization skills are given in (Appendix-18).

Stage- 7: Collaborative Writing

Foster and Russel have investigated on the effectiveness of collaborative writing. He states that it optimizes interaction and creates a constructivist environment (23). Raimes also advocates collaborative writing and her findings report that collaborative writing improves learners’ motivational levels (25-32). By evidence currently available, it seems fair to suggest that collaborative writing is effective. (Kessler, Bikowski & Boggs, 91-109). Hence the students will be made to write collaboratively.

Stage- 8: Writing the First Draft

After collaborative writing, the students will be asked to write a discursive essay on the given topic.

Stage-9: Editing

According to Lundstrom & Baker peer editing is highly successful at tertiary level classrooms (30). Since guidance is critical during the editing stage, the students will be given web links on guidance for peer editing.
During this phase, they will use ‘Microsoft Word reviewing tools’ for editing. The students will also view a presentation on how to use the Microsoft word reviewing tools. The samples of the peer-reviewed scripts are given in (Appendix-19)

**Stage 10: Understanding the Essay Writing Rubrics**

In order to help the students understand the assessment criteria they will be informed of the parameters of IELTS rubrics on discursive writing. They will be assessed on four parameters such as content, coherence and cohesion, lexical resource and grammar. The assessment rubric for discursive essays is given in (Appendix- 20).

**Stage -11: Writing the Final Draft**

The students will be instructed to write the final draft. Eventually, there will be an exercise on a similar topic which will be treated as a post-test. The post-test questions are given in (Appendix-21). The entire multimedia toolkit used in the design of tasks is given in (Appendix-22).

**4.9. CONCLUSION**

This chapter described the stages involved in the Multimedia Supported Process Approach (MSPA) and the materials used for the study. The following chapter will describe the design of the pilot study, the credit structure and grade description. The results and analysis of the pilot study will also be presented.