

Learning to Write a Research Plan

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ABSTRACT: The purpose of this study is to determine the effectiveness of modelling in teaching beginners how to write research papers. To accomplish this goal, an online learning experiment was conducted on two groups of students. Learning took place over fourteen meetings. The learning process results in each student being able to create a research plan in the context of preparing a final assignment. The instructor evaluates each research plan using an assessment rubric. The assessment results are expressed in the form of a score ranging from 10 to 100. They are then analyzed statistically using difference tests between before and after learning. Modelling technique effective to make grow students' ability to prepare research plans.

KEYWORDS: Writing ability, research plan, modelling technique, writing learning

I. INTRODUCTION

The ability to create a research plan is essential for anyone who intends to complete a study or produce written work for publication. Writing a research proposal requires a variety of skills. These abilities can be divided into three categories: a) Subject knowledge and research ability; the proposal allows you to demonstrate your subject knowledge mastery and familiarity with current research trends. A good research proposal demonstrates advanced analysis, evaluation, and synthesis skills, as well as creativity and the ability to combine vertical and lateral thinking. c) Communication abilities; the proposal demonstrates your ability to express yourself precisely and concisely (Monash University, 2010). Understanding the nature of research, critical thinking and analytical skills, and language skills are among the abilities required. Errors in preparing research proposals are common due to the complexity of the abilities required, including, "Objectives unrelated to the rest of the project, inconsistent hypothesis, unclear statement of purpose, impractical materials and methods, and so on" (Sangli, 2013). According to Wong (2002), "common mistakes in proposal writing include: 1. failing to provide the proper context to frame the research question, 2. failing to delimit the boundary condition for your research, 3. failing to cite landmark studies, 4. failing to accurately present the theoretical and empirical contributions of other researchers, 5. failing to stay focused on the research question, 6. failing to develop a coherent and persuasive argument for the proposed research, and so on."

Students must be taught and trained properly to overcome difficulties in writing research plans, either through classroom learning or through special guidance. If done through learning, lecturers must select effective learning techniques, engaging media, the appropriate time, and so on. Lecturers must consider several factors when determining effective learning techniques, including the competencies that students must achieve, learning support facilities, the maturity of students' thinking, study time allocation, and the material taught. There are research findings aimed at English teachers in Neval that the selection of teaching methods and strategies is generally influenced by either teacher cognition based on their own experience or contextual factors such as curriculum, classroom setting, language learners' interest, time pressure, assessment system, and resource availability (Adhikari, 2017).

The modelling technique is one of the learning techniques that can be used to learn how to prepare a research plan. This technique is used by presenting examples that students can use as models for developing the skills they are learning. When considering contextual factors such as: the learning environment is conducted online, students' interest in the abilities being studied, more free study time, and the availability of a large number of learning resources in the form of examples of good research plans, the modelling technique is very rational to use in learning to write research plans.

Modelling techniques are widely used in education. Anggraeni et al. (2016) conducted research on the use of modelling techniques in learning to write short stories. According to the findings of this study, students achieved good results as a result of the modelling technique's implementation, and students responded very positively to the modelling technique's implementation in writing short story learning. Oktriviani & Syafe'i (2013) conducted research on the use of modelling techniques in teaching writing. According to the research, using this writing models technique will make it easier for students to learn writing because it is based on the learner's characteristics.

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Researchers strongly suspect that the use of modelling techniques in learning to prepare research plans for students studying research can be more effective, because the students have higher thinking maturity, based on several research results regarding the effectiveness of using modelling techniques in learning to write.

II. METHODS

A research proposal is meant to persuade others that you have a worthwhile research project and that you have the necessary expertise and work plan to complete it. In general, a research proposal should include all of the key elements involved in the research process as well as enough information for readers to evaluate the proposed study. (Sidik, 2005). Write a proposal that describes exactly what we/she will do and why we/she will do it, how we/she will do it, and how we/she will interpret the results (Pradede, 2019).

The following elements must be included in the research plan: a. Introduction and theoretical frameworks. The introduction is the section of the paper that provides readers with context for the research reported in the paper. b. Problem formulation. The problem should stand out in a proposal so that the reader can easily identify it. An extended discussion can sometimes obscure and poorly formulated problems. In such cases, reviewers and/or committee members may struggle to identify the issue. c. The study's goal. The purpose statement should provide a specific and accurate synopsis of the study's overall goal. d. A literature review. The review of the literature provides context and background for the research problem. e. The design procedure and method. The activities should be described in as much detail as possible, and there should be clear continuity between them. Sampling, instrumentation, data collection, and data analysis are all part of the process. f. example. The reference list only includes references cited in the text. (Fajares, 2007).

Gross et al. (1998) also explained the structure of the research plan. "The eight steps in Structured Holistic Approach for a Research proposal are (1) setting up a causal model, (2) establishing a fact-hypothesis matrix, (3) developing a variable-indicator-method matrix, (4) selecting the study design, (5) defining the sampling procedure and calculating the sample size, (6) selecting the statistical methods, (7) considering the ethical aspects, and (8) setting up an operational plan".

Based on the two explanations for the elements and structure of a research plan, it is possible to conclude that when writing a research plan, it is necessary to show the composition of the elements that it contains: title, introduction, literature review, methodology, time frame and schedule of activities, budget, research team details (signed CV). A good title not only piques the reader's interest, but also predisposes him or her to favour the proposal. The introduction's main purpose is to provide the necessary background or context for the research program. The most difficult aspect of proposal writing is determining how to frame the research problem. The study's objective should be stated clearly, be measurable, and feasible. The literature review should be brief and include references to relevant related research that has been or is being conducted. Methodology explains to the research committee how you intend to approach your research problem. It will include your work plan and a description of the activities required to complete your project. The time frame and activity schedule for the proposed research should be included in the planning for the research proposal. A budget is required to request an adequate budget for the planned study (Sidik, 2005).

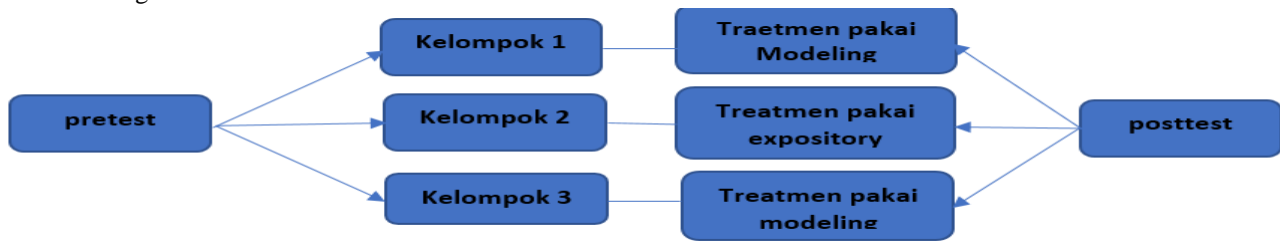
The implementation of learning to write research plans must be done correctly in order for students to be successful in their learning. In general, three (three) indicators of learning success have been identified: (1) learning effectiveness, which is usually measured by the level of success (achievement) of students from various angles, (2) learning efficiency, which is usually measured from the learning time of the learning discussion, and (3) the attractiveness of learning, which is always measured by students' proclivity to learn continuously. According to him, learning outcomes are a performance (performance) that is indicated as a (ability) that is obtained (Reigeluth, 1983). The learning strategy employed determines the achievement of three indicators of learning success. In general, strategy refers to a plan of action to achieve the goals that have been identified. Strategies associated with teaching and learning can be interpreted as general patterns of teacher-student activities in the realization of teaching and learning activities to achieve the outlined goals (Sulasmi, 2021).

Methods, techniques, and learning media are all examples of learning strategies. One type of learning method is modeling technique. Modelling was used in the learning steps of: (1) seeing the model's behaviour that students should imitate; (2) determining the functional value of the behaviour and model; (3) developing a learning sequence; and (4) applying to guide cognitive processes and motor reproduction processes of students (Sulasmi, 2021). Modelling techniques, particularly when learning to write, produce effective results. There is evidence from research findings that the study's findings are as follows: First, there are differences between the results of text-writing skills taught using modelling techniques and the results of text-writing skills taught using conventional techniques. Second, there are differences in writing skill of news text between students with high learning motivation and students with low learning motivation (Novritika, 2018).

An experimental method with a quantitative approach was used for the research. The procedure was as follows: (1) forming three groups of students, two as the experimental class and one as the control class, (2) administering treatment to the experimental and control classes, (3) selecting experimental data, (4) analyzing data, (5) discussing the results of the analysis, and (6) concluding.

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The research design that was used is



The study lasted four months and was conducted entirely online using the Zoom and Google Class applications. Zoom is a more popular application than Google Class. Expository is used in the treatment, and the Google Class application is used more frequently. In groups 1 and 3, modelling treatment was used, with the learning syntax including: (1) an introduction to the lesson, (2) several examples of good research proposals, (3) the lecturer reviewing the title and content of the introduction with the students, (4) an assignment to create a title and arrange the introductory part. (5) workshops on student-created titles and parts of titles and introductions, (6) lecturers and students reviewing the results of literature reviews, research methodology, and references contained in several examples of research plans, (7) assignments on preparing literature reviews, research methodology, and references based on the title and introduction he created, (8) workshops on student-created literature reviews, research methodology, and references, and (9) collecting research plans from lecturers via Google Class.

Expository treatment was implemented in group 2 via learning syntax: (1) introduction to learning, (2) explanation of the parts of the research proposal, (3) practise in preparing each part of the research proposal, (4) group discussion discussing the proposal that the students had made, (5) each student revises the research proposal that has been discussed in the group discussion, and (6) submission of research proposals to the lecturer.

The data collection technique used was testing students' abilities to prepare research proposals before and after the learning treatment. As a result, the information obtained is quantitative in the form of student ability scores in preparing research proposals which is measured on a scale of 1 to 100. Aside from tests, unstructured interviews are conducted to gather additional information about the difficulties students face when completing assignments.

The following format is used as an instrument to assess the ability to write research plan.

Table 1 Rubric for Evaluating Research Plan

No	Rated aspects	Scoring range
1.	Title	5 – 10
2.	Introduction	10 – 30
3.	Review of Literature	10 – 20
4.	Methodology of research a. research methods, b. research techniques, and c. instruments.	10 – 30
5.	References	5 – 10

Maximum score=100

III. RESULT

Data from measuring students' abilities in preparing research plans before and after treatment are presented below, arranged from highest to lowest scores.

Table 2 Data on Ability Scores before Treatment

NO	Group 1	Group 2	Group 3
1.	50	55	53
2.	47	48	53
3.	43	48	50
4.	40	45	47
5.	40	40	47
6.	38	40	45
7.	34	37	45
8.	34	35	40
9.	33	33	36
10.	32	33	32
11.	32	33	32

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12	32	32	32
13	30	32	30
14	30	32	30
15	30	32	30
16	29	30	30
17	29	30	29
18	29	30	29
19	29	30	28
20	27	26	27
21	27	26	27
22	26	26	25
23	26	25	23
24	25	25	20
25	22	25	20
Average	32,56	33,92	34,4
Variance	43,94	44,15	44,19

Table 3 Data on Ability Scores After Treatment

NO	Group 1	Group 2	Group 3
1.	92	78	90
2.	88	78	90
3.	88	76	87
4	86	76	87
5	85	75	87
6	85	75	86
7	80	75	85
8	80	74	85
9	80	73	84
10	80	70	84
11	79	70	84
12	78	65	80
13	78	65	78
14	78	62	78
15	76	60	78
16	76	60	74
17	76	56	74
18	75	55	74
19	75	55	72
20	75	54	72
21	74	54	70
22	74	52	70
23	72	52	68
24	72	50	67
25	72	45	65
Average	78,96	64,2	78,76
Variance	29,238	104,16	57,13

Data on students' initial ability to prepare research plans prior to treatment shows that it is still lacking on average. The three groups that would be given treatment had nearly identical abilities after being tested with the ANOVA different test (Kenton, 2023). The calculated F is 0.515, while the F table with sign.0.01, dk = 2 and k = 72 is 3.13. These calculations reveal that F calculated is less than F table. These calculations show that the abilities of the three groups of students who will be treated are the same.

There was a significant increase in abilities before treatment after treatment with modelling techniques (in groups 1 and 3) and expository techniques (in group 2). Data on group 1's ability after a different test using the t test revealed that df was 48, signf 0.01, and t table = 3.725. According to the calculation results, the t test (cr) is equal to 27.05. The computed t test (CR) value exceeds the t table value. This means that there was a significant difference in the abilities of group 1 students before and after the treatment. The t test (CR) calculation in group 2 yielded a t test (CR) of 12.46. Meanwhile, df 48 yielded a t table value of 3.725 with a sign level of 0.01. These calculations reveal that the calculated t test (CR) is greater than the t table. This means that there is a significant difference in the abilities of group 2 students before and after the treatment. Similarly, the group 3 calculation results yielded a t test (CR) count of 22.014. Meanwhile, the df in the table is 48, the sign level is 0.01, and the t table is 3.725. Data analysis reveals that the t test value (calculated CR) is greater than the t table value. This means that the abilities of group 3 students are different before and after the treatment.

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According to the findings of data analysis, treatment with modelling and expository techniques can improve students' abilities to prepare research plans. When modelling techniques are compared to expository techniques, modelling techniques are found to be more effective. According to the ANOVA test results, the calculated F value is equal to 28.206, and when compared to the F table, df 2, and k values of 72, a figure equal to 3.13 is obtained, indicating that the average treatment results using modelling techniques are higher than the average using expository techniques.

IV. DISCUSSION

Learning techniques are essential in the learning process. According to Brown (200), there are three stages of learning that are designed and determined by teachers/lecturers, namely method, design, and procedure (technique). An approach defined assumptions, beliefs, and theories about language and language learning. Designs define how those theories relate to classroom materials and activities. Techniques and practices derived from one's approach and design are referred to as procedures.

Effective techniques or procedures can help students learn more effectively. As evidence, the findings of this study show that the modelling technique used in online learning to write research plans contributes more to the development of students' abilities than expository techniques. These two techniques or procedures (modelling techniques and expository techniques) are used on the same material, media, objectives, teachers, and students with the same fundamental abilities, but the results demonstrate different learning qualities.

It is critical to discuss why modelling techniques are so effective in preparing research plans for students. In order to determine the effectiveness of modelling techniques in learning, we must look at several factors, including the roles of students and lecturers. These two factors are indicators of academic success.

Students' roles in the learning process Create a research plan using modelling techniques, specifically:

(1) Use examples as models for developing their skills.

Students must be able to prepare a research proposal that can be continued in preparation for their final study assignment by the end of the lesson. They can develop ideas in their work by copying and making analogies with the proposal models they read if they have examples of high-quality research proposals. (2) Time management, Students have a limited amount of study time. Effective learning takes only 14 weeks in a semester, while the success exam takes two weeks to complete. Students can efficiently formulate research plans by using 14 weeks because their minds are focused on the patterns presented in the examples used as models.

(3) Believe that the quality of his work is adequate.

Working with good examples can boost your confidence that your work is of high quality. Students write research proposals after studying examples of high-quality proposals. They follow the patterns found in the examples they have with zeal. The results of student concept development are based on the proposal pattern used as a model, which is then outlined in the research proposal they create, so the quality of the proposal created is not significantly different from the research proposal used as a model or reference.

The role of lecturers in learning to prepare research plans using modelling techniques appears straightforward, but it necessitates that they be prepared to provide feedback and direction to students, especially if they encounter difficulties. Furthermore, lecturers must evaluate student work progress on a regular basis. Students encounter difficulties while developing a research plan based on models/examples. Their solution is to seek guidance from their lecturer. As a result, lecturers must be prepared to assist students in overcoming difficulties. Many of the problems that students face arise from determining the problems to be researched, compiling relevant literature studies, and determining methods that are relevant to the problems being studied. In order to avoid tardiness in completing assignments, lecturers must evaluate their performance on a regular basis. Lecturers must reach an agreement with students on the following topics: (1) scheduling and reporting on student work progress; (2) discussion or workshop on student work results; and (3) reporting on student work final results.

The researcher believes that the demand factor is what causes modelling techniques to be effectively used in learning to compose research proposals via online media by paying attention to the demands of the student's role and the role of the lecturer in the learning process of compiling research proposals using modelling techniques.

The activity of imitating or imitating something of quality in the nuances of developing skills, both mechanistic and intellectual skills, is very important because it allows you to build concepts that lead to doing something correctly based on the conceptualized example. If students are required to prepare a quality research plan but do not yet have a concept or idea of what a quality research plan is, it appears to be very difficult. If the lecturer only explains theories about preparing proposals during the learning process, without providing students with concrete examples of quality research plans, the researcher believes that the learning cannot be successful. However, if the lecturer only explains the theory of preparing research plans as an introduction accompanied by examples of quality research plans during the learning process, students are assigned to study the content, systematics, and mechanics contained in these examples, confident that they will not face difficulties in their learning because they are not confronted with abstract and biased understanding, but in a concrete environment.

When preparing research plans, students rely heavily on lecturers for guidance and direction. According to Theresa (2016), guidance is extremely important in learning because it assists students who are experiencing learning difficulties. In this learning, students' demands for lecturer guidance are very visible. After reviewing the research plan examples obtained, all students had concepts that

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would be developed into research plans based on their ideas. However, they continue to have reservations about: (1) the feasibility of the problem they will investigate, (2) the title they choose, (3) the contents of each section of the research plan they describe, and (4) the mechanical techniques used to prepare it. In such a situation, lecturers must be prepared and capable of providing guidance to any student who requires it in order for them to overcome their difficulties and doubts. When giving directions, it is preferable to use examples rather than just explanations. The format of the example presented can be taken from the research plan that is being used as a model, or alternative examples that are relevant to the student's research plan can be provided. If the lecturer instructs students to rely solely on explanations, new problems and uncertainties will arise. Typically, these difficulties and doubts arise as a result of misunderstandings between lecturers and students. Lecturers provide students with guidance or direction that is accompanied by examples to avoid miscommunication.

The main idea of this discussion is that learning to prepare a research plan using modelling techniques requires: (1) students to think at a high level based on concepts built through the examples they refer to, (2) lecturers to be prepared to provide direction and guidance with concrete examples for students, and (3) sufficient study time, namely between 10 - 14 meetings.

V. CONCLUSION AND SUGGESTION

Modelling techniques are effectively used in learning to prepare research plans for students using online media, according to data and data analysis. According to the findings of the discussion, the effectiveness of modelling techniques in learning is due to the significant demands placed on the roles of students and lecturers in facilitating successful learning.

After discovering that the Modelling Technique was effective in developing students' ability to prepare research plans, the researcher advised lecturers tasked with guiding students in preparing research plans in preparation for writing their final study assignments to try providing students with several examples of quality research plans as models. The researcher then suggested to observers and educators that the findings of this study be retested for validity on other data sources so that they are more convincing and become new knowledge.

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