



DEVELOPING A RHETORICAL-MOVES MODEL FOR WRITING AN EFFECTIVE PROBLEM STATEMENT SECTION OF RESEARCH PROPOSALS: An Action Research Study

Desarrollo de un modelo de estrategias retóricas para redactar una sección de planteamiento del problema eficaz en las propuestas de investigación: un estudio de investigación-acción

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KEYWORDS	ABSTRACT
<i>action research model problem statement rhetorical moves research proposal writing.</i>	<i>A convincing research proposal requires a clear problem statement that captures the essence of the research question; however, master and doctorate candidates struggle to write this section. Therefore, this qualitative study aims to provide students and researchers with a rhetorical- moves model to enhance their statement of the problem writing and improve the quality of their research proposals. Adopting an action research design, the study offers a developed model composed of three rhetorical moves Problem, Consequence and Gap; it is systematically applied within two master-level EFL classrooms to write problem statement section. Document analysis and Focus group discussions are conducted in order to capture the usefulness of the model, investigate challenges and provide further solutions. Findings indicate the usefulness of the model in writing persuasive, clear and organized sections with some challenges that can be treated if the application of the model and students' productions are followed with teacher feedback.</i>
PALABRAS CLAVE	RESUMEN
<i>investigación-acción modelo formulación del problema estrategias retóricas propuesta de investigación redacción.</i>	<i>Una propuesta de investigación convincente requiere un planteamiento del problema claro que capture la esencia de la pregunta de investigación; sin embargo, los candidatos de maestría y doctorado tienen dificultades para redactar esta sección. Por lo tanto, este estudio cualitativo tiene como objetivo proporcionar a estudiantes e investigadores un modelo de movimientos retóricos para mejorar la redacción de su planteamiento del problema y elevar la calidad de sus propuestas de investigación. Adoptando un diseño de investigación-acción, el estudio ofrece un modelo desarrollado compuesto por tres movimientos retóricos: Problema, Consecuencia y Brecha; este se aplica sistemáticamente en dos aulas de inglés como lengua extranjera (EFL) de nivel maestría para redactar la sección del planteamiento del problema. Se llevaron a cabo análisis de documentos y discusiones en grupos focales con el fin de captar la utilidad del modelo, investigar los desafíos y brindar soluciones adicionales. Los hallazgos indican la utilidad del modelo para redactar secciones persuasivas, claras y organizadas, con algunos desafíos que pueden abordarse si la aplicación del modelo y las producciones de los estudiantes van seguidas de la retroalimentación del docente.</i>

Recibido: 14/ 04 / 2026

Aceptado: 11/ 06 / 2026

1. Introduction

There is a growing interest in the application of genre analysis and rhetorical moves within research writing. This can provide a clear guide for students and researchers to succeed in writing the different elements of a research paper either a research proposal, a dissertation or an academic article and facilitate the evaluating process for reviewers and evaluators having clear criteria to assess the written work. In this concern, there has been a wide interest in Swales' (1990) developed model known as Create Research Space (CARS), which allows analyzing organizational patterns of introductions of academic articles. This model comprises three rhetorical moves. The first move, establishing a territory, involves three steps: claiming centrality, making generalizations about the topic, and reviewing items from previous studies. The second move, establishing a niche, encompasses four steps; counter claiming, indicating a gap, posing questions, and maintaining a scholarly tradition. The third move, occupying a niche, consists of three sub steps: outlining purposes or announcing present research, revealing key findings, and indicating the structure of the research article. Some of these steps are obligatory and other are optional.

This model has received considerable attention from researchers and has been utilized in numerous studies not only in introduction section (Hirano, 2009; Pujiyanti, 2018; Samraj, 2008), but on different sections of a research paper, such as abstracts (Tseng, 2011), problem statements (Denarti et al., 2021; Nimehchisalem et al., 2016; Parsa & Tahirian, 2017). However, it is important to note that these studies have applied Swales' model to different sections and little attention has been paid to develop other rhetorical moves for each section of varied research papers, and the statement of the problem section is a clear example where students and researchers struggle to write. Statement of the problem is a critical element of any research serving as the foundation for the entire study. It articulates the specific problem or gap that the research aims to address, justifying the need for the investigation and establishing its relevance.

Observations of Algerian Master-level EFL students at the Department of English Language and Literature at sétif2 University indicate that there are mismatches between the content of elements of problem statement taught in the teacher researcher's course: Methods of Writing a Research Projects and another course: Academic Writing, presented to the same students by another teacher. This has created much confusion among students in which they found themselves writing the problem statement with different teachers' perspectives. The researcher's wide literature reading confirms that these mismatches between teachers reflect the existing big confusion in the relevant literature of this area of interest. The use of CARS model in analyzing three different sections leads certainly to biased results. To clarify, CARS model has been used to write the introduction section of research articles in which the problem statement is a crucial sub-section, or introductions and background sections in research proposals and theses. Hence, the model, which is suitable for background study or articles' introductions, can never be suitable for any other section of research proposals or dissertations and theses introductions. The placement of problem statement also plays a role in understanding this reality. Problem statement, an element of research proposal, or introduction section of dissertation or thesis comes after the Background of the Study section that explains the three moves in CARS model; it is not logical to have two sections written with the same organizational pattern. Indeed, lack of research about the rhetorical moves of problem statement does not make CARS model suitable for analyzing or writing problem statement; therefore, developing a model for problem statement and conducting research about it deemed essential for students to gain clarity in organizing the problem statement structure in their theses, ultimately raising acceptance of their proposals.

The purpose of this qualitative study is to develop a comprehensive model for writing effective statement of the problem and to test its usefulness for Algerian EFL students in writing this section of their research proposals and capture the associated challenges. This model consists three moves: Problem, Consequence and Gap (PCG). To achieve the aim of the study, the researcher developed the following questions:

Q1. To what extent do Algerian Master-level EFL students succeed in writing statement of the problem sections based on PCG model?

Q2. What are linguistic features employed in students' statements of the problem to indicate the rhetorical moves?

Q3. What are students' attitudes towards the usefulness of PCG in writing convincing statements of the problem and their challenges encountered in applying the model?

1. Literature Review

1.1. Empirical Studies on Rhetorical Moves in Academic Writing

Empirical research has examined the rhetorical structures employed by students when writing problem statements and introductory sections of academic papers. These studies provide evidence-based insights into students' challenges and competencies in academic writing.

1.2. Studies Using Swales' CARS Model

Sueb et al. (2021) explored the rhetorical moves and patterns employed by undergraduate English Language Teaching (ELT) students when writing the introductory sections of their thesis proposals. Utilizing Swales' CARS (Create a Research Space) model, the mixed-methods study conducted text analysis on 10 thesis proposal introductions to identify the rhetorical moves quantitatively, coupled with descriptive qualitative analysis. The findings revealed students predominately established a territory by claiming centrality rather than reviewing previous literature. Notably, only 20% adequately established a niche and research gap, while 40% effectively occupied that niche. Reflections with the students uncovered their lack of confidence to analyze prior studies and limited exposure to research article introductions, hindering their ability to provide sound rationale and indicate clear research gaps. The study concluded that more intensive supervisory support, focused training on rhetorical structures for introductions, research gap identification strategies, and greater engagement with scholarly literature are needed to enhance ELT students' thesis proposal writing competencies.

Obeso (2019) analyzed the rhetorical structure of problem statement sections in undergraduate monographs written by students in a foreign languages program in Colombia. Applying Swales' (1990) CARS model, the study examined 20 problem statement samples to identify the rhetorical moves and strategies employed by the students. Four main moves were found: generalizing the research topic, showing specific findings, interpreting the cause of the problem, and posing a research question. The most prevalent move was posing a research question (100% of samples), while only 25% generalized the topic. Within each move, the analysis revealed the rhetorical strategies or steps taken, such as describing findings, specifying tools used, and establishing causes/consequences. However, the findings indicated an unbalanced and irregular use of these moves and strategies, suggesting students lacked knowledge of the rhetorical aspects involved in constructing effective problem statements.

Denarti et al. (2022), using Swales' (1990) CARS model as an analytical framework, analyzed the rhetorical moves employed in the problem statement sections of postgraduate theses by English Education students at the University of Bengkulu from 2018-2019. Twenty-six theses were examined to identify the types of moves, dominant moves/steps, and common patterns present. The findings revealed that all three moves (establishing a territory, establishing a niche, occupying the niche) occurred across the theses, with Move 2 (establishing a niche) being the most dominant at 69%, and Steps 1B (indicating a gap) of Move 2 and 1A (outlining purposes) of Move 3 being the most prevalent steps at 54% each.

1.3. Conceptual Frameworks for Problem Statement Development

Several scholars have proposed conceptual frameworks and models to guide problem statement development. These frameworks offer theoretical structures but vary in their operational specificity and practical applicability.

Ali and Pandya (2021) proposed a stage-based framework that emphasizes mentoring, social support, and self-efficacy in guiding doctoral students through problem formulation. However, their model prioritizes the learning trajectory of the writer rather than clarifying the internal structure and essential elements of an effective problem statement.

Denarti et al. (2022) presented a structure that breaks down a problem statement into three components: The Ideal, Reality, and Consequences. The Ideal section outlines a desired objective, situation, or value, while the Reality section describes the current state of affairs that prevents the realization of the Ideal. This portion explains how the present situation falls short of the goal or ideal. The Consequences section identifies a proposed solution to enhance the current situation and bring it closer to the goal or

ideal. While this framework provides an overview of the problem, it does not delve deeply enough into each aspect's nuances, potentially creating difficulties for researchers and particularly students when developing their problem statement and applying it to their own research problems.

Dusim et al. (2023) proposed a theoretical framework called the IRCA model (Ideally, Reality, Consequences, Aim), which draws on insights from multiple academic researchers to offer a structured approach for developing the problem statement. The framework guides researchers through four key components: examining what should ideally be happening, comparing it with what is actually occurring, identifying the negative consequences of this gap, and articulating the intended research aim. This systematic structure helps researchers convey the discrepancy between desired and actual conditions while emphasizing both the impacts of this gap and their research objectives in an organized manner (Dusim et al, 2023). The IRCA model is viewed as comprehensive because it encourages researchers to focus on precision, appropriate scope, theoretical connections, and strong justification when crafting their problem statements.

Gidado and Bappi (2024) introduced an integrated model highlighting precision, scope definition, theoretical alignment, and justification, yet their framework remains broad and evaluative without offering a simplified and operational structure that novice researchers can systematically apply.

Collectively, these approaches tend to be either rhetorically oriented or diagnostically descriptive, lacking a unified and streamlined model that clearly delineates the logical sequence and core components of a well-formulated statement of the problem. IRCA framework is clear, but it does not specify the specific rhetorical moves or linguistic patterns within each component, making implementation challenging for students. The model also lacks explicit guidance on how to identify and articulate research gaps with sufficient specificity, which is a common difficulty for many students. These limitations indicate that while the IRCA model offers a helpful conceptual outline, it requires further development and empirical validation to become a practical teaching tool for problem statement writing. These limitations indicate the need to develop a new, coherent, and practically applicable model specifically designed to enhance clarity, contextual grounding, and structural consistency in postgraduate research writing.

1.4. General Guidelines for Problem Statement Writing

Various scholars, universities, and journals have provided guidelines for writing effective problem statements. These guidelines offer practical advice but do not constitute formal models.

1.5. Question-Based Guidelines

Ellis and Levi (2008) did not introduce a clear model but developed a set of questions; when researchers answer these questions, they can complete writing the problem statement. These questions are:

1. What: In no more than two sentences, what is the problem that the research will address?

Who: List three current, peer-reviewed references that support the presence of that problem and briefly describe the nature of that support.

2. How, Where, and When: Again, in no more than two sentences, describe the impact of the problem. How are people or researchers' understanding negatively impacted by the problem? When and where is the problem evident?

Who: List three current, peer-reviewed references that support the impact of the problem that the research proposes addressing and briefly describe the nature of that support

3. Why: In no more than two sentences, identify the conceptual basis for the problem. That is, what does the literature outline as the cause of the problem?

Who: List three current, peer-reviewed references that support the conceptual basis of the problem and briefly describe the nature of that support.

Relying on these questions, together with one selected manner among some manners of writing problem statements introduced by National University, the researcher developed PCG model focusing on moves and steps of each move. The researcher found it more convincing, keeping students focused on one main problem and leading them to clear research questions, and she expected its easy application by students.

1.6. Template-Based Guidelines

Miles (2019) discusses the issue of statement of the problem development for novice researchers, providing a model and template for developing a problem statement called The Statement Grid. It describes three possible sub-problems as a basis for the research and helps with the Rule of 3's (support your argument and position with three points). He provides examples of problem statements using the conceptual template. To use the model, researchers should first write the overall problem statement template, then divide the problem to be investigated into two or three sub-problems that are compelling. The researcher should then write each of the sub-problem statements the same way for the dissertation and ensure that the statement of the problem lists all the variables under focus for the study. This model is complicated and misleading more than helpful because discussing the problem with three problems makes the students unfocused; a focused topic about a focused problem leads to limiting the scope of research questions while having sub-problems is confusing.

1.7. University Guidelines on Core Components

The website of National University (www.nu.edu) provides an explanation of three crucial concepts necessary for innovative research that contributes new and relevant insights: clear research problem, consequences, and gap.

1.7.1. Research problem

Research problem is defined as "a general issue, concern, or controversy addressed in research" (Ellis & Levi, 2008, p.22). A proper research problem should be specific, evidence-based, and real-life. Specific problem pertains to the scope of the problem, requiring it to be sufficiently manageable and focused for examination through dissertation or thesis research. Evidence-based problem implies that the problem is substantiated by recent research findings or credible statistical data. Real-life problem means that the problem exists independently of research and is not solely a result of a lack of knowledge or research.

1.7.2. Consequences

Consequences refer to negative implications experienced by a group of people or organizations due to the existence of a problem. Measurable negative consequences hold greater weight than those that cannot be quantified or assessed on a scale. Explaining negative implications represents an emergency state for doing the research and solidifies the existence of the research problem.

1.7.3. Gap

Research gap represents the absence of knowledge or insights concerning a specific issue, contributing to the persistence of the problem. Utilizing gaps allows for the positioning of new research within the existing literature, thereby necessitating a thorough literature review to establish a comprehensive understanding of what is known and unknown.

1.8. Importance of Problem Statement in Research Proposals

The problem statement is a critical element of a research paper, serving as the foundation for the entire study. Ellis and Levi (2008) clarify that "statement of problem is one or two sentences that outline the problem that the study addresses. The statement of the problem should briefly address the question. However, the problem statement is the statement of the problem and the argumentation for its viability" (p.27). There is a difference between the two terms "statement of the problem" and "problem statement". The statement of the problem means one sentence that clearly mention or announce the problem and refers directly to the main research question. However, the problem statement refers to the full section that explains the problem and prove its validity and investigation worthiness. Its concern of problem statement is to define the problem and illustrate a research gap showing how lack of knowledge may present a problem that needs more investigation. Its purpose is to convince the reader that the problem is existing and the research topic is worth investigation. The problem statement is the most important step towards

knowing exactly what to do and why and should be aligned with purpose statement and research questions. Based on this clarification, the term problem statement (PS) is selected to be used in this study.

1.9. Development of the PCG Model

Relying on Ellis and Levi's (2008) questions, together with one selected manner among some manners of writing problem statements introduced by National University, the researcher developed the PCG model focusing on moves and steps of each move. The researcher found it more convincing, keeping students focused on one main problem and leading them to clear research questions, and expected its easy application by students.

2. Method

2.1. Research Design

This study follows a qualitative approach and adopts an action research design, which allows for the systematic investigation of the usefulness of PCG model within master-level EFL research methodology classes, with the aim of improving writing PS section of the research proposals. The action research design enables active engagement with master students, facilitating problem solving and achieving productive changes. The teacher researcher used graduate students' research proposals for genre analysis as a classroom activity to assist learners in achieving their educational objectives. However, when analyzing PSs, discrepancies emerged indicating a lack of shared characteristics. This problem, which appeared in analysis sessions, showed that there were no clear rhetorical moves; this in turn, led to serious ambiguity among master 1 students of how to write their own statements of the problem. This required the teacher researcher to apply a pedagogical intervention, which is developing PCG model. The model was created after a wide reading to relevant genre analysis literature and discovering that CARS model has been used wrongly to write statements of the problem and a critical view to the existing two frameworks presented earlier in the literature review. The main idea of the model is cored within the main components of the problem statement which are the problem, the consequence and the gap. An initial draft was created and was given to two experienced research methodology teachers in the same department to provide their feedback. At first, the idea of negative consequences was not clear, but when it was explained, they said that this would add to the value of the problem. They actually welcomed the model and decided to use it in their classrooms.

Table 1. PCG Rhetorical Moves Model for Problem Statement

Move1: Problem	Step 1: Announce the problem
	Step 2: Contextualize the problem
	Step3: Provide evidence from recent research that the problem exists within the described context
Move2: Consequences	Step4: Explain the negative consequences of the problem
	Step5: Provide statistics and/or recent research findings that show these consequences
Move3: Gap	Step6: Review the literature
	Step7: Explain the gap

Source: Own elaboration, 2026

2.2. Sample

The teacher researcher opted for convenience sampling, applying the intervention on two Master 1 groups from the department of English Language and Literature at Sétif 2 University, Algeria because she is the teacher of Methods of Research Project course. The journey of the course involves tutorials where students meticulously practice each element of the research proposal. Each group contains fifteen students, so that the number of both groups is thirty, but only twenty three students attended all tutorial sessions and are considered as participants of this study.

This study was conducted with full attention to ethical considerations. All master-level EFL students who participated in this action research were informed about the study's purpose, procedures, and potential uses of their data. Participants were explicitly informed that their participation was voluntary and that they could withdraw from the study at any time without any penalty to their academic grades. Because they were

part of discovering the existing problem, they were looking forward to have clear steps to follow in writing PS.

2.3. Data Collection

This study utilized two data collection methods; Content analysis and focus group discussions. The corpus for content analysis consisted of 23 samples of problem statements section written by Algerian master-level EFL students during the first semester of the academic year 2023-2024 as part of their proposals, which should be submitted by the end of the same academic year. The problem statements were coded manually by the researcher who relied on indicators of each step in the PCG moves . For example, in the first step of the first move which is problem announcement, indicators mainly include verbs that state clearly the problem such as “the problem to be addressed in this study....”. In order to provide a platform for in-depth exploration of students’ experiences and challenges related to the use of the model in writing PSs, focus group discussions with both classes were conducted.

2.4. Data Analysis

The PCG model was used as a framework for analyzing students’ problem statements to measure the extent to which they are able to apply the model to their own research problems. The data obtained from the corpus analysis were analyzed to identify recurring patterns and rhetorical moves employed in the problem statements. Rhetorical moves and rhetorical steps were identified and their frequency and percentage of occurrence were also measured. The researcher read carefully the students’ anonymous written sections and identified whether there is an indicator for the step or no to write the result on a paper, so that all cases can be counted. Then a second reading focused on identifying common patterns, and rhetorical strategies used in problem statement writing and test students’ ability to apply the model to their research topics to be used for qualitative analysis. Concerning focus group discussions, the data were transcribed and subjected to thematic analysis to identify recurring themes, patterns and insights shared by the participants.

To ensure the trustworthiness of the findings and minimize potential biases inherent in this action research design, some control measures were used throughout the study. First, the dual role as both teacher and researcher was obligatory because the other teachers had teaching responsibilities and continuous workshops that came against using inter-rater reliability. To mitigate this, the researcher anonymized all students’ statements of the problem before analysis ensuring that coding decisions were based solely on textual evidence rather than familiarity with individual students. In addition, the researcher employed triangulation by combining double genre analysis of student texts; qualitative and quantitative analysis with students’ feedback through focus-group discussions which reduced reliance on any single data source.

3. Findings

The first part of findings is dedicated to those got form students’ document analysis of 23 problem statement section of research proposals while the second part is devoted to focus group discussion results.

Table 2. Frequency and Percentage of Steps in the Samples

Step	Frequency	Percentage %
Step 1: Problem	21	91.30
Step 2: Context	14	60.86
Step3: Evidence	14	60.86
Step 4: Negative consequences	16	69.56
Step 5: Evidence	9	39.13
Step 6: Literature	14	60.86
Step7: Gap	20	86.95
Total	23	100

Source: Own elaboration, 2026

Table 2 shows that Step 1, which involves describing the problem, was the most frequently used step, with a frequency of 21 (91.30%). This indicates that the students were able to identify and articulate the problem they were investigating effectively. Step 7, which involves identifying a gap in the literature, was

the second most frequently used step, with a frequency of 20 (86.95%). This indicates that the students were able to identify areas where further research is needed. Steps 2 and 3, which involve providing context and evidence for the problem, were used with a frequency of 14 (60.86%) each. This suggests that more than a half number of total students were able to provide relevant background information and support the existence of the problem with evidence. Step 4, which involves describing the negative consequences of the problem, was used with a frequency of 16 (69.56%). This suggests that the students were able to identify the potential impact of their problems on certain academic aspects. Steps 5 and 6, which involve providing evidence for the negative consequences and reviewing the literature, were used with a frequency of 9 (39.13%) and 14 (60.86%), respectively. This suggests that the students were less consistent in providing evidence for the negative consequences and reviewing the literature. Overall, the results suggest that the students were able to construct effective problem statements, with a strong emphasis on describing the problem and identifying gaps in the literature. However, some improvement in providing evidence for the negative consequences and reviewing the literature consistently is required.

Table 3. Examples of Linguistic Features Signaling Steps

Move	Linguistic Features
Move1: Problem	<p>Step 1: EFL learners face some difficulties in pronunciation. The problem to be addressed in this study is lack of constructive feedback to enhance written production</p> <p>Step 2: ...third-year EFL students at Sétif2 University</p> <p>Step 3: Observations show that 70% of students are passive participants in the classroom. A vocabulary test was used to examine their recalling skills Document analysis of previous exams shows poor production</p>
Move2: Consequences	<p>Step 4: If this issue is not taken into consideration, pronunciation problems may lead to difficulties in communicating effectively. This negatively impacts students’ self-efficacy, engagement and academic outcome</p> <p>Step 5: A study done by Nation and Webb(2011) found that not learning enough vocabulary can significantly hinder EFL learners’ ability to comprehend and produce language.</p>
Move3: Gap	<p>Step6: There is much research on</p> <p>Most project-based learning literature has focused on a number of issues such as content knowledge gains Brown&Green, 2022)</p> <p>Step 7: However, most of these studies did not fully acknowledge explicit focus of knowledge transfer from projects to solving problems, rarely examining this impact. While existing studies have explained the effect of intra-sentential switching on vocabulary, students’ and teachers’ perceptions are overlooked. Little attention</p>

Source: Own elaboration, 2026

Based on results displayed in Table 3 regarding the given seven steps, the linguistic features in the students' productions of problem statements can be analyzed as follows: description of the problem in move1 requires three kinds of linguistic features; Step 1 announces the problem through using the linguistic feature like “face difficulties” and “the problem to be addressed”. Furthermore, The linguistic features in this step include the use of variables to be used in the study such as "feedback" and "pronunciation" which indicate the specific area of interest, reflecting that the topic is focused. Focused topics in specific research area lead to focused research problems and precise statement of the problem. Step 2 provides context and the example provided answers relevant questions of who the participants are “third-year students” and where the research takes place “Setif 2 University”. In step 3, which is providing evidence for the existence of the problem, students used various linguistic features that indicate the research tools such as “classroom observations, document analysis and vocabulary test”.

Move 2 contains two steps: negative consequences and a research evidence to confirm the existence of these consequences. Students’ examples reflect consequence statements that explain the potential negative

impact of the problem on “students' communication skills” and “self-efficacy, engagement, and academic outcomes”. The linguistic features in this step include the use of strong verbs such as “hinder”(step5) and “negatively impacts”(step4) which emphasize the seriousness of the issue. The statement is also supported by a study “Nation and Webb (2011)”, which adds credibility to the argument.

Move 3 comprises steps 6 and 7; the linguistic features in this move include the use of phrases such as “most studies”, “there is much research” referring to literature (step 6) and “little attention,” “rarely,” “overlooked” (step7) which indicate the existing gap in the literature. The use of subordinating conjunctions like “however” and “while” which emphasize the movement to an aspect that has not been given much attention by researchers, showing that the research is worth investigation. Overall, the linguistic features in some of students' productions of problem statements are clear, concise, and relevant to each move. However, there are some noticeable problems appeared when analyzing the documents, which may help in the improvement of the model, or raising recommendations.

3.1. Reflections on Problems Signaled in Students' Problem Statements

Deep analysis of students' written problem statements indicates some problems that require rewriting the section based on the teacher's feedback. One apparent main problem in writing Move1, step1 which is long introductory and general statements before writing one or two sentences state clearly the problem while this step requires a direct announcement or statement of the research problem. In addition, as discussed earlier in the literature review, the research problem has to be real-life and existing in the described context. However, some problems in students' productions are not research problems, but either research topics or research gaps. The research topic is announced as a research problem in this example: “the problem to be addressed in this study is the effectiveness of using gamification as a tool for vocabulary retention”, and it is stated as a research gap in this example “the problem of this study is the paucity of empirical data concerning the perceptions of EFL teachers and students toward this mnemonic strategy”. Confirming occurrence frequencies of step 2, many students did not refer to context as an important part of understanding the research problem. Another weakness in students' problem statement writing is the kind of evidence they used to prove the existence of the problem. They relied on literature evidence to explain their problems; it is more suitable to rely on results got from their own application of a kind of research tool such as observation, interviews or tests to have a sound basis for their research problems. The last observed problem from students' productions is the description of research aim instead of a gap in step7 which appeared in more than one student's production. This suggests that either students misunderstand the meaning of the gap, or they followed other problem statements as template because the aim exists in Swales' CARS. The aim step in the model developed in this study is ignored intentionally because the section that follows the problem statement is the purpose statement where the students can state their research aim.

Focus group discussions covered key topics such as the participants' understanding of problem statement components, their ability to integrate the rhetorical moves, their impressions about the effectiveness of their problem statements and the challenges they faced during writing. The majority of students showed good understanding of the steps included in the model with difficult understanding to negative consequences. Evidence in step 3 was an area of students' queries. Regarding their ability to apply the model, students showed readiness and much satisfaction with the model. Because the teacher gave them Swales' CARS to apply in background of the study section, they found difficulty to write problem statement section without rhetorical moves. They reflect that it is easy to follow practical steps. They described the noticeable improvement in their written productions after applying the model feeling that their problem statements are more convincing, but always worried about my feedback and raised several challenges.; here are few examples:

- I have difficulty in conducting a thorough literature review and ensuring that the problem statement is well grounded and relevant to the existing literature.
- Stating the problem and identifying the gap
- I find it difficult to focus on only one problem
- I did not understand negative consequences

Suggestions to these challenges may include some systematic approaches such as breaking down the literature review process, and students will learn more details in writing literature review section. The

second problem can be addressed through teacher feedback while the third problem may be more suitable to be tackled through prioritizing research objectives; this can be solved when studying the purpose statement section, which is a section that follows the statement of the problem in research proposals where students are required to align their problems to research purpose. Embracing these strategies will enhance the clarity and relevance of their research and contribute to their overall academic growth and success.

4. Discussion

The students demonstrated a strong capacity to identify and articulate the problem they investigated, as indicated by the frequent usage of Step 1 (describing the problem). The findings align with Ellis & Levi (2022) study emphasizing the importance of a well-formulated problem statement and situating research within existing context. Master-level students met the researcher's expectations about understanding the importance of identifying gaps in the literature, as seen in the relatively high frequency of Step 7. These findings align with the results got from the focus group discussions where the majority of students demonstrated good understanding of the steps involved in constructing problem statements. However, the analysis reveals that while the students were adept at describing the problem itself and identifying gaps in the literature, they exhibited slightly lower frequencies in providing supporting evidence for the negative consequences of the problem (Step 4) and reviewing the literature (Steps 5 and 6). This suggests that the students could benefit from strengthening their abilities to gather and synthesize evidence to ensure that their research is grounded in the existing literature. This model has proved its usefulness for writing effective problem statements and contradicts with the studies (Denarti et al., 2021; Nimehchisalem et al., 2016; Parsa & Tahirian, 2017) which used CARS Model wrongly as a framework to evaluate problem statements.

5. Conclusion

In this article, we examined the usefulness of a rhetorical-moves framework to write organized and convincing problem statements that clearly and precisely state the research problem in a structured way. The implementation of the model in research methodology class and the subsequent analysis of students' problem statements and focus group discussions were used to assess the effectiveness of the intervention through an action research design. From the results and discussion, several conclusions can be drawn from this study. Students appeared to be able to successfully state the research problem as it was the most frequently used step, highlighting problems to provide practical evidence to existing educational problems in the first move. Students were also able to identify gap areas where further research is needed. The usefulness of the PCG model is further reflected in students' various use of linguistic features that are aligned with each step of the moves.

The findings confirm the model's utility as both a pedagogical teaching tool and an analytical coding framework. However, several limitations constrain the scope of these findings: the study involved a small sample from a single department at Sétif 2 University, Algeria, limiting generalizability; the researcher coded texts manually without inter-rater reliability assessment, introducing potential subjectivity. Additionally, the researcher's dual role as teacher and researcher may have influenced interpretation, though bias control measures were implemented.

6. Recommendations

Improvements in gathering and presenting evidence for the negative consequences of the problem and reviewing the literature are recommended to further refine students' research efforts. The students can use this model to analyze their own writing to see whether they followed the structure to enhance their academic writing skills and improve the quality of their research proposals. This model can be applied in dissertations and theses in the section of problem statement in the main introduction. Teachers may also use it as a pedagogical tool. Future research should test the PCG model with larger and diverse samples, include multiple independent coders, use experimental design control groups to strengthen validity and generalizability.

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