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Message from the Editor

Greetings to our colleagues from all parts of the world. As the editor of Journal of Action Qualitative & Mixed Methods Research (JAQMER), I would like to welcome you to Volume 4, Issue 2.

This edition contains seven articles three of which are qualitative research, three mixed methods and one an action research that we believe will assist you, the reader, in conceptualizing and solving problems related to developing research or a manuscript with a qualitative design, a mixed methods and an action research.

The current issue includes seven articles. The first article, which is called 'Systematic curriculum and instructional development for a mixed methods DACUM research: SCID MMR-DACUM' is a qualitative study with SCID (Systematic Curriculum and Instructional Development) job analysis variant of systematic review design. The aim of this study was to present a learning package based on SCID that provides the necessary knowledge, attitudinal information and practice opportunities on how to use Developing a Curriculum (DACUM) in Mixed Methods Research (MMR) in the study of occupational analysis.

The second article, which is called 'Thematic density and methodological trends in peer bullying theses in Turkey: A text mining study', is a mixed methods research with data-transformation variant of convergent parallel design. The aim of this study was to contribute to understanding the current status of peer bullying research in Turkey, determining their conceptual density, and providing systematic suggestions for future studies.

The third article, which is called 'Playing to start: EGIDEV and the power of simulation in entrepreneurial education', is a qualitative study with an auto-ethnographical design. The aim of this study was to explore the development and implementation of EGIDEV- the Educational Game in Digital Entrepreneurship for VET Students - through the eyes of one of its partners.

The fourth article, which is called 'Insights into college students' perceptions of cooperative learning in college classrooms: A mixed methods approach', is a mixed methods study with a convergent mixed-method design. The aim of this study was to investigate college students' perceptions of cooperative learning (CL) and its relationship with their academic success and social development. The fifth article.

The fifth article, which is called 'Conflict management in organizations: A systematic review', is qualitative research with systematic analysis variant of systematic review design. The aim of this study was to systematically review the literature on conflict management in organizations in Turkey between 2005 and 2025, a period chosen because the full texts of one study from 2003 and another from 2004 were unavailable, resulting in their exclusion from the analysis.

The sixth article, which is called 'COVID-19 and livelihoods status of people with disabilities in Northern Nigeria: A mixed-methods', is a mixed methods action research with a participatory action research design. The aim of this study was to examine the differentiated impact of COVID-19 pandemic on livelihood status of PWDs in northern Nigeria based a sample size of 3,301 respondents.

The seventh article, which is called 'Black women's leadership, persistence, and personal power', is a mixed methods research with follow-up explanations variant of an explanatory sequential mixed methods design'. The aim of this study was to explore how Black women administrators at public colleges and universities in Florida have sustained their administrative roles and to evaluate whether their leadership persistence is upheld by personal power.



These articles are designed to offer thoughts, insight, suggestions, samples and ideas on qualitative, mixed methods and action research. According to the guidance and the results of articles in this issue, researchers could shape their future qualitative research.

We hope you enjoy the articles in this volume 4 issue 2 of the journal and find them informative and useful for designing and developing qualitative, mixed methods and action research. Please remember that articles published in JAQMER do not reflect the position of the journal's editorial staff, reviewers.

Dr. İlhan Gunbayi

JAQMER Editor



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Systematic curriculum and instructional development for a mixed methods DACUM research: SCID MMR-DACUM

Tarkan Düzgünçınar *

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Abstract. The aim of this study is to present a learning package based on SCID (Systematic Curriculum and Instructional Development) that provides the necessary knowledge, attitudinal information and practice opportunities on how to use Developing A Curriculum (DACUM) in Mixed Methods Research (MMR) in the study of occupational analysis. The study provides a learning package to guide mixed methods research for those wishing to carry out DACUM-based occupational analysis. In this learning package, researchers will achieve three enabling objectives for MMR-DACUM studies: (1) practice in writing the methodology of the data, (2) practice in analyzing the data, and (3) practice in discussing and concluding their findings. To enable researchers to achieve these three enabling objectives, an information sheet with examples from one of the author's studies, self-checking model questions and answers, practice exercises, a final performance test, and standards are introduced.

Keywords: Systematic curriculum and instructional development, mixed methods research, DACUM, coast guard

1. Introduction

A mixed methods research design draws on the strengths of both quantitative and qualitative approaches to provide a more comprehensive understanding of a research question (Creswell, 2014). Mixed methods research is not simply the use of quantitative and qualitative data, but the thoughtful integration of these approaches to achieve a synergistic effect where the whole is greater than the sum of its parts (Hafsa, 2019). This integration can take various forms, from using qualitative data to develop quantitative tools, to using quantitative data to contextualize qualitative findings. The 'why' behind the choice of a mixed methods approach is as important as the 'how'. Identifying the specific research questions to be addressed by each method and how different methods of inquiry can be integrated is key to a successful mixed methods study (Nathogapan, 2021). This design has become increasingly popular in recent years because it allows researchers to understand both the tendencies of participants in a community and their individual experiences (Dawadi et al., 2021). Thus, it provides researchers with more flexibility and depth when addressing complex problems. This study will provide the reader with the general knowledge and skills required to conduct single case study research utilizing a mixed design, in which two mixed design types (exploratory sequential mixed design and multiple sequential mixed designs) are employed in conjunction (Toyon, 2021).

1.1. Performance objective

Given qualitative and quantitative data, write a Mixed Methods DACUM Research (MMR-DACUM) manuscript. The finished job must meet all criteria on Performance Tests 5 and 5.1.

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1.2. Enabling objectives

1. Practice writing the methodology of MMR-DACUM data.
2. Practice analyzing MMR-DACUM data.
3. Practice discussing and concluding the results of MMR-DACUM data.

1.3. Prerequisites

- Master / PhD degree in the related field.
- Hold DACUM facilitator certificate.
- Knowledge of using Information and Communication Technology (ICT) (MS Office Word, Excel, etc.), using Data Analysis Software (quantitative and qualitative NVIVO, SPSS, etc), analytical thinking, and critical thinking.
- Knowledge of the philosophy of social sciences.

2. Writing Methodology of MMR-DACUM Data

As seen in Table 1: Learning Experience #1, you should follow the steps of learning activities by taking care of special instructions in the practice writing methodology of MMR-DACUM data.

Table 1.

Learning experience #1

Enabling Objective #1: Practice writing methodology of MMR-DACUM data	
Learning Activities	Special Instructions
Read the Information Sheet titled 'Practice writing methodology of MMR-DACUM data' on 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11	
Watch the qualitative data analysis video, read quantitative data analysis tutorials and identify the important messages to convey about your university when writing methodology of MMR-DACUM data manuscript.	<ul style="list-style-type: none"> • https://www.qsrinternational.com/nvivo/nvivo-12-tutorial-windows/00-let-s-get-started • https://www.ibm.com/cloud/garage/dte/tutorial/advanced-analytics-ibm-spss-statistics • https://www.spss-tutorials.com/
Discuss with the mentor expert in writing methodology of MMR-DCUM data at your faculty the methods he/she uses to develop an MMR-DACUM manuscript. What would you have to do differently?	Ask your mentor to suggest a co-researcher who can observe and help you with your practice sessions and the Practice Checklist.
Demonstrate your knowledge of writing methodology of MMR-DACUM by completing the Self-Check on 2.12	
Check your answers against the Self-Check Model Answers on 2.13.	
Practice writing methodology of MMR-DACUM data while the academic staff expert in DACUM observes and offers help as needed. Ask the academic staff expert in MMR-DACUM to use the checklist titled "Practice Writing the Methodology of MMR-DACUM Data" on 2.14 to assess your progress.	

2.1. Determining the title of the manuscript

You should decide on the correct and comprehensive title for the research by taking care of your study aim so that the title reflects the whole manuscript and makes sense.

For example, if you do an MMR-DACUM to understand and determine the occupational analysis of the Coast Guard officers regarding the duties they perform in their profession and to analyze their views on the level of accomplishment of their duties in line with the issues identified in this analysis the title of your manuscript can be written as,

DACUM Analysis of The Coast Guard Officers and Their Views on The Level of Accomplishment of Their Duties: Multi-Stage Mixed Method Research.

2.2. Writing the abstract and keywords

You should decide what and how many words of abstract and keywords to use to reflect the entire research (aim, methodology, findings, and implications) based on the database searching engine in the research topic you choose so that the abstract and keywords should reflect the whole manuscript and make sense.

For example, for the abstract and keywords of the MMR-DACUM called 'DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)' to understand and determine the occupational analysis of the Coast Guard officers regarding the duties they perform in their profession and to analyze their views on the level of accomplishment of their duties in line with the issues identified in this analysis can be as following:

Occupational analysis consists of collecting and recording valid information about a particular profession and the skills required from the practitioner of that profession. In the analysis, in addition to the activities and responsibilities that make up the profession, the knowledge, skills, and abilities needed for effective performance and the standards or goals that form the basis for evaluating performance are revealed. In this study, the occupational analysis of the officers who are the managers of the Coast Guard was carried out by the DACUM occupational analysis method. In the study, the level of realization of the results obtained by the analysis was also determined. In the study, quantitative and qualitative methods are integrated in a mixed-method approach. Thanks to this, a more thorough understanding of the research problem and more satisfactory answers to all questions were provided. This study is a Multi-Stage Mixed Method research. DACUM occupational analysis application, which is also a case study, was carried out in four different groups with 24 Coast Guard officers, each of whom served in different regions (Black Sea, Sea of Marmara, Aegean Sea, and Mediterranean Sea). The officers identified 10 duties and 119 tasks in the DACUM analysis. The analysis also revealed the information, skills, tools, behaviours, threats, opportunities, and abbreviations that officers should have. In the light of the data obtained, the Occupational Analysis Scale was developed and applied to 217 officers and the level of realization of the issues determined in the DACUM occupational analysis was determined. The Occupational Analysis Scale was developed with the data obtained from the DACUM and the scale was applied to 217 officers and the level of realization of the issues determined in the DACUM occupational analysis was determined. In the analysis of the data obtained from the scale, it was found that the level of realization of the officers' duties was very high and at a high level in all the tasks. This situation has shown that DACUM is an effective analysis method. The issues identified with DACUM were also compared with the semi-structured focus group interview in which The Coast Guard officers participated and document analysis. With the study, it was once again seen that DACUM is a well-organized method for analysing duties and competencies associated with a specific employment position or profession description. The findings from DACUM can enable the Coast Guard to review and revise its core personnel recruitment and training policies and strategies. The Coast Guard can benefit from the data obtained from this study at three levels: individual, organizational, and strategic.

Keywords: Occupation Analysis, DACUM, Coast Guard, Knowledge, Skills, Behavior, Mixed Methods Research

2.3. Reviewing the literature

According to Gunbayi and Sorm (2018), the selection of philosophies and paradigms should be informed by the individual researcher's cognitive interests, which may encompass technical, practical, and emancipatory interests. This process of selection involves determining which reference books, articles, and dissertations to review, as well as the most appropriate scientific search engines to utilize. The chosen paradigm will significantly influence the decisions made throughout the research process. A comprehensive review of related research fields is therefore essential, both to contribute to the research

field and to support the research aim and research questions. This will enable readers to understand why the research is being conducted and what contribution it will make to the research field.

This standpoint, which posits the notion that qualitative and quantitative approaches are complementary, facilitates the attainment of diverse perspectives on what is significant and what is valuable, whilst ensuring that the inquiry process is as inclusive as possible. The utilization of a mixed method approach affords numerous advantages, including (1) a wide range of applicability, (2) the integration of both qualitative and quantitative approaches under a unified framework, and (3) the facilitation of meaningful integration of both methods (Günbayı & Karadağ, 2022). The preference for mixed methods among researchers can be attributed to a desire to eliminate uncertainties associated with quantitative and qualitative methods, address concerns regarding validity and reliability, and address research problems more comprehensively (Creswell & Plano Clark, 2011; Teddlie & Tashakkori, 2009).

2.4. Explaining the research aim and writing research questions

You should decide what and how many research questions, both quantitative and qualitative strands of your MMR-DACUM, to write to reach the aim of the research by reviewing the literature related to the research topic so that the data you collect and your findings should answer the research questions and keep you up with the research aim.

For example, the research aim and the research questions of the MMR-DACUM study ‘DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)’ is as following:

This study aims to conduct a job analysis of the tasks performed by Coast Guard officers in their profession and to analyze their views regarding the level of fulfilment of these tasks in line with the issues identified in this analysis. By this aim, the study seeks to answer the qualitative research question, "What is the DACUM analysis related to the profession of coast guard officers, and what are their views on the level of task fulfilment?" as well as the quantitative research question, "What is the level of task fulfilment of coast guard officers about their profession?" To achieve this, a single mixed method type of multistage mixed method design, combining two different designs (Exploratory Sequential Design and Explanatory Sequential Design), was employed.

The sub-problems of the research were determined separately for the qualitative and quantitative parts as follows:

I. Qualitative Part Sub Problems

1. What are the duties of Coast Guard officers?
2. What are the duties performed by the officers within the scope of their specified duties?
3. What are the knowledge and skills that officers should possess?
4. What are the tools, equipment, and materials used by officers?
5. What are the expected behaviors of officers?
6. What are the officers' future tendencies (threats and opportunities) about the officer profession?
7. What are the abbreviations used by officers during the performance of their duties?

II. Quantitative Part Sub-Problems

1. What is the level of realization of the duties of officers within the framework of DACUM occupational analysis?
2. What is the level of realization of officers' duties according to regions within the framework of DACUM occupational analysis?
3. Within the framework of DACUM occupational analysis, is there a relationship between the distribution of officers' tasks?
4. Within the framework of DACUM occupational analysis, what is the level of realization of the jobs under the tasks?
5. Within the framework of DACUM occupational analysis, what is the level of distribution of the knowledge required for officers?

6. What is the level of distribution of the skills required to be possessed by officers within the framework of DACUM occupational analysis?
7. What is the level of use of the tools, equipment, and materials used by the officers within the framework of DACUM occupational analysis?
8. What is the distribution level of the expected behaviours of officers within the framework of DACUM occupational analysis?

2.5. Explaining which MMR-DACUM design chosen

You should decide which MMR-DACUM design (the convergent parallel design: the parallel-data bases variant, the data-transformation variant, the data-validation variant; the explanatory sequential design: follow-up explanations model, participant selection model; the exploratory sequential design: instrument-development variant, theory-development variant; the embedded design: embedded experimental model, embedded correlational model, embedded instrument development and validation variant; the multiphase design: large-scale program, development and evaluation projects, multilevel statewide studies, single mixed methods studies that combine both concurrent and sequential phases; the transformative design: the feminist lens transformative variant, the disability lens transformative variant, the socioeconomic class lens transformative variant; action study: technical action study, participatory action study, emancipatory action study (Creswell & Plano Clark, 2017; Gunbayi & Sorm, 2018)) to choose and why based on experience and reference book suggestions of quantitative and qualitative research methods so that the design you choose should comply with your research aim, otherwise you may mislead readers to do study.

For example, the explanation of why MMR-DACUM design was chosen in the study 'DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)' is as follows:

Research design, which encompasses the stages of data collection, processing, and interpretation, provides information about the general structure of a study or the plan of a study (Scott & Morrison, 2007; Wiersma & Jurs, 2004). In this study, a mixed method approach was adopted, integrating quantitative and qualitative methods to comprehensively understand the research problem and obtain satisfactory answers to all questions. The underlying assumption is that a single data source (DACUM) will not suffice to address the research problem and that the qualitative data obtained should be supported by quantitative data. Mixed method research offers the advantage of compensating for the validity and reliability problems arising from both qualitative and quantitative research.

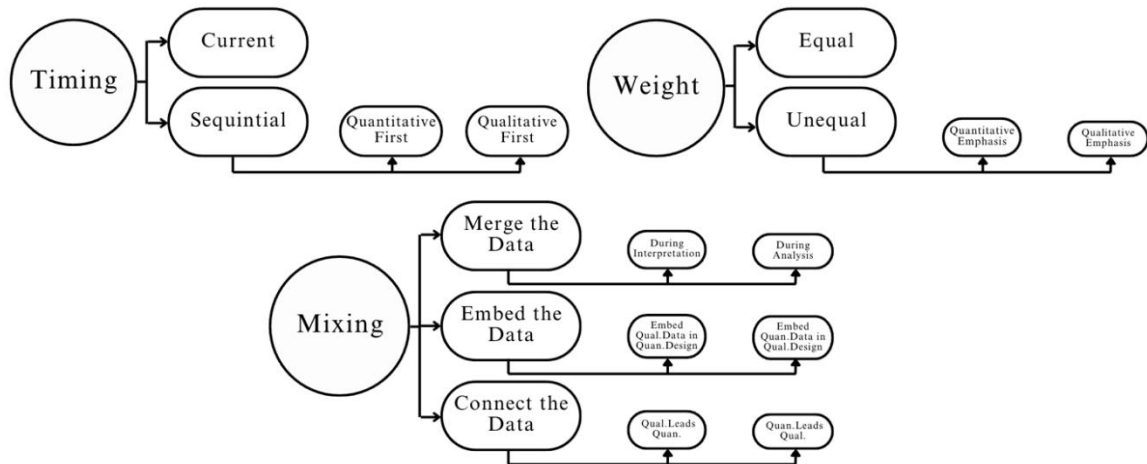
Clark and Ivankova (2017) posit that the level of interaction, prioritization, timing, and the decision of how and where to combine quantitative and qualitative data play an active role in design selection. This research is based on these considerations. Given that quantitative data were collected from qualitative data in the first stage and qualitative data were collected from quantitative data in the second stage, it was decided to combine interactive, qualitative priority, sequential timing, and quantitative and qualitative data during interpretation. In line with this decision, it was evaluated that it would be appropriate to use a single mixed method type of multi-stage mixed design from mixed method research.

2.6. Deciding in which order the MMR-DACUM data will be analyzed

Following the selection of the MMR-DACUM design, you need to decide on how to analyze the MMR data, either separately or combined. Your decision should take into account interaction, timing, prioritization, and the mix of qualitative and quantitative data following the selected designs or variants of mixed types, as shown in Figure 1.

Figure 1. Decision diagram for mixed methods design criteria for timing, weighting, and mixing. **Source:** Adapted from Creswell & Plano Clark (2017); Gunbayı (2022).

For example, deciding in which order the MMR-DACUM data will be analyzed in the study ‘DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-



stage mixed method research (Duzguncinar, 2023)` is as shown in Figure2:

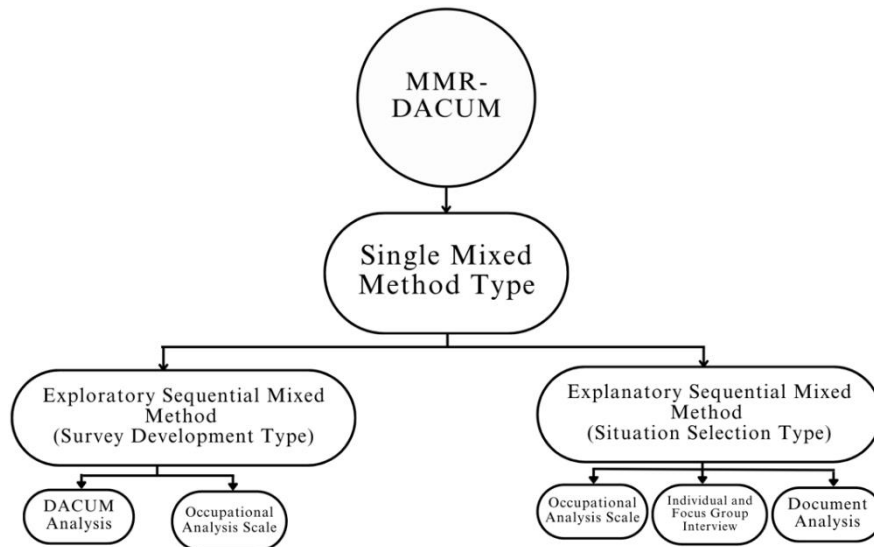


Figure 2. Sample decision order diagram MMR-DACUM

Source: Adapted from Duzguncinar (2023).

2.7. Explaining sampling methods and techniques

It is essential to determine the most appropriate sampling methods and techniques for the specific nature of the research. For quantitative research, the utilization of random sampling methods is imperative, whereas, for qualitative research, purposive sampling techniques should be employed. In making this decision, it is crucial to draw upon one's experiential knowledge and to consult reference materials that provide recommended sampling strategies. This approach ensures that the data collected through sampling is both relevant and reliable, aligning with the research objective and providing a reliable foundation for analysis.

For example, the sampling methods and techniques chosen for the study ‘DACUM analysis of the coast Guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)’ are as follows:

The population of the study consists of officers of the ranks of Lieutenant, Lieutenant Commander, and Commander serving in the floating elements of the Coast Guard. According to the data received from the Coast Guard, the number of these officers is N=219. The officers are the decision-making managers of the Coast Guard and they command both the personnel under their command and the floating elements, also called Coast Guard boats, in order to fulfil the tasks assigned to the floating elements. In the qualitative phases of the study (DACUM job analysis and focus group interview), the purposive sampling method was preferred. In this method, people who meet certain criteria are included in the study according to the purpose of the research (Given, 2008). Purposive sampling methods are used to discover and explain phenomena and events (Yıldırım & Şimşek, 2005). The actions carried out in the first phase of the research, in which the exploratory sequential design was applied, were listed as obtaining and evaluating the qualitative data and then creating the Occupational Analysis Scale (OAS). In the explanatory sequential design phase, as indicated by Creswell and Clark (2018), it was ensured that the participants in the qualitative phase were those who had initially participated in the quantitative data collection phase (OAS). It was established as a criterion that the officers selected (or assigned) to participate in both the DACUM group study and the focus group interview should have served on the Coast Guard's floating elements, in other words, in accordance with the DACUM methodology, they should be the individuals who personally performed the task.

2.8. Explaining data collection methods and techniques

It is essential to provide a detailed rationale for the selection of data collection methods and techniques, taking into account both quantitative and qualitative strands of research. This justification should be supported by empirical evidence and relevant reference book suggestions for quantitative and qualitative research methods. The data collected from the sampling should then be used to support the objectives of the study.

For example, an explanation of data collection methods and techniques in the study ‘DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)’ is as follows:

The primary instrument for data collection in this study is the DACUM occupational analysis, which is conducted in four distinct regions. DACUM, a vocational-technical education curriculum development instrument, is a rapid, effective, and economical analysis method that places workers at the core and is founded on the experiences of those who perform the profession (Norton, 1985). In addition to analyzing an occupation in all its dimensions, the DACUM process reduces the gaps between legislation and the practice of that occupation. For these reasons, this structured, efficient, cost-effective, and proven approach makes the DACUM method very suitable for working on a realistic and robust occupational analysis, and the approach based on the participation of expert members of the profession from which this model draws its strength makes it a suitable method for collecting realistic data and thus achieving the objectives of this study.

By the data obtained from the DACUM occupational analysis, the Occupational Analysis Scale (OAS), which also constitutes the quantitative phase of the study, was prepared. With the permission of the Coast Guard, the questionnaire was administered electronically via special communication groups between 18-30 April 2022, with a target completion time of 20 minutes. The questionnaire was structured into four sections, each corresponding to a specific aspect of the DACUM occupational analysis. The first section pertained to the region of service, the second to the tasks performed, and the third to the tasks performed under the tasks belonging to the specified tasks, (4) the knowledge, skills, tools, equipment, and materials they use, and the behaviors expected to be displayed by an officer, and (5) the threats and opportunities for the officer profession. While making this assessment, the officers chose an option between 5, which is the highest rating, and 1, which is the lowest rating. In other sections, if they agreed with each statement, they ticked the box next to it. Since all the data in the questionnaire were taken from the DACUM occupational analysis, there was no need for any pilot study or expert opinion to test the reliability and validity.

2.9. Explaining the reliability and validity of the research

You should explain what you will do to support the reliability and validity of the research by conducting a pilot study on the reliability and validity of the study to ensure high reliability and validity of the research for both quantitative and qualitative strands.

For example, the reliability and validity explanations of the research in the study ‘DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)’ are as follows:

For the reliability of the analysis process, the themes and subcategories were controlled with the support of field experts (senior officers). For validity, the observation notes taken during the interviews were examined and analyzed, and the data obtained were evaluated in detail (Başkale, 2016). Not only what was said, but also the subtexts of the discourses were followed and in this way, a holistic analysis was carried out through emphasis, implication, and evaluation (Çakır, 2020). The texts obtained from the interviews were supported by the findings, thus ensuring the validity and reliability of the research. To contribute to the validity of the research, (1) the research process was explained in detail to the participants, (2) the findings obtained from the interviews were analyzed with the support of field experts, (3) the findings obtained were checked by senior officers with more professional experience and years of service among the officers interviewed, and (4) to obtain different perspectives, the opinions and suggestions of field experts were consulted regarding both the DACUM professional analysis and the focus group interview.

2.10. Reporting ethical process

You will follow the steps outlined in the Ethics Committee for Social Science Research form and obtain ethical approval before carrying out your research for both quantitative and qualitative strands of research.

For example, the ethical process of the research in the study ‘DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)’ are as follows:

In this research, priority was given to research ethics throughout the data collection process. Research ethics can be defined as a set of guidelines for conducting ethical research (Ersoy, 2015). Despite the many controversies within this field and the lack of consensus among scientists, the importance of research ethics has increased in recent years (Ruacan, 2005). In research that is based on human opinions, such as the present study, there is the potential (although this was not realized in advance) to create negative situations for the participant, such as tension, stress, and anxiety. Due to this concern, research ethics were carefully followed at every stage during the preliminary preparation phase and data collection. The legal permissions required for this study were obtained from two different bodies: Akdeniz University Scientific Ethics Committee (date and number: 11/10/2021, E-50913635-774.99-189536) and Coast Guard Command (date and number: 30 September 2021, E-41476881-774.01-213271). These permissions can be found in the Annexes.

2.11. Tools, equipment, supplies, and materials

The following tools, equipment, supplies, and materials are needed to write the methodology of MMR-DACUM data.

Table 2.

Tools, equipment, supplies, and materials for enabling objective #1

• Computers	• Quantitative analysis software (SPSS, Lisrel, etc.)
• Textbooks & Articles	• Qualitative analysis software (NVIVO, MAXQDA, Atlas, etc.)
• Databases in related field	• Plagiarism Detection Software (Turnitin, Ithenticate etc.)
• Internet	• MS Office Programs (Word, Excel etc.)
	• Multi-Function Printer (MFP)

2.12. Worker Behaviors

Academic behaviors play a key role in the writing methodology of MMR-DACUM data. The behaviors that are important to your success in this task are;

Table 3.

Worker behaviors for enabling objective #1

<ul style="list-style-type: none"> • Assertive • Flexible • Professional • Adaptable 	<ul style="list-style-type: none"> • Punctual • Ethical Reliable • Objective • Goal driven
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2.13. Self-Check

Instructions: Test your knowledge of the MMR-DACUM data writing methodology by answering the following questions. For true/false questions, circle 'true' if the statement is true and circle 'false' if the statement is false. For multiple choice questions, select the most correct answer. For short answer questions, write a short answer to the question. Compare your answers with those in the following Self-Check Model Answers.

Table 4.

Self check for enabling objective #1

1. The title of the manuscript should reflect the whole manuscript and make sense.
<ul style="list-style-type: none"> • True • False
2. Keywords reflect the whole manuscript and make sense.
<ul style="list-style-type: none"> • True • False
3. The literature review supports your research aim and questions, and readers can understand why you are doing this research and what contribution you are making to both qualitative and quantitative research fields.
<ul style="list-style-type: none"> • True • False
4. Write MMR-DACUM questions mutually.
<ul style="list-style-type: none"> • True • False
5. Identify the types of designs and their variants.
<ul style="list-style-type: none"> • True • False
6. The sampling method which supports a quantitative strand of MMR-DACUM research can be (choose more than one):
<ul style="list-style-type: none"> a. Probability sampling b. Non-probability sampling c. Purposive sampling d. Random sampling
7. The timing of quantitative and quantitative methods can be (choose one):
<ul style="list-style-type: none"> a. Concurrent timing b. Sequential timing
8. Determine the weight of quantitative and quantitative methods (choose one):
<ul style="list-style-type: none"> a. Equal weight b. Unequal weight
9. Specify how to mix quantitative and quantitative methods (choose one):
<ul style="list-style-type: none"> a. Merge the data b. Embed the data c. Connect the data
10. Identify the types of validity and reliability.
11. Why is the importance of ethics in your research? Give your reasons.

2.14. Self-check model answers

Directions Compare your answers with the model answers below.

Table 5.

Self-check model answers for enabling objective #1

1. True					
2. True					
3. True					
4. False	Write research questions for both quantitative and qualitative research separately.				
5. Model Answer					
	You can choose your mixed methods design and its variant according to your research objective, e.g. The convergent parallel design: the parallel databases variant, the data transformation variant, the data validation variant; the explanatory sequential design: the follow-up explanatory model, the participant selection model; the exploratory sequential design: the instrument development variant, the theory development variant; the embedded design: the embedded experimental model, the embedded relational model, the embedded instrument development and validation variant; the multi-phase design: Large-scale program, development and evaluation projects, multi-level nationwide studies, mixed-methods studies combining both concurrent and sequential phases; the transformative design: the feminist lens transformative variant, the disability lens transformative variant, the socio-economic class lens transformative variant; action study: technical action study, participatory action study, emancipatory action study.				
6. a. Probability sampling					
d. Random sampling					
7. b. Sequential timing					
8. b. Unequal weight					
9. c. Connect the data					
	<table> <tr> <td>Inner Validity</td> <td> <ul style="list-style-type: none"> • Triangulation (Qualitative Strand) • Choosing an appropriate methods of measurement (Quantitative Strand) </td> </tr> <tr> <td>Outer Validity</td> <td> <ul style="list-style-type: none"> • Appropriate sampling method based on voluntarism to obtain top opinions and experiences (Qualitative strand) • A probability sampling method to select your subjects (Quantitative strand) </td> </tr> </table>	Inner Validity	<ul style="list-style-type: none"> • Triangulation (Qualitative Strand) • Choosing an appropriate methods of measurement (Quantitative Strand) 	Outer Validity	<ul style="list-style-type: none"> • Appropriate sampling method based on voluntarism to obtain top opinions and experiences (Qualitative strand) • A probability sampling method to select your subjects (Quantitative strand)
Inner Validity	<ul style="list-style-type: none"> • Triangulation (Qualitative Strand) • Choosing an appropriate methods of measurement (Quantitative Strand) 				
Outer Validity	<ul style="list-style-type: none"> • Appropriate sampling method based on voluntarism to obtain top opinions and experiences (Qualitative strand) • A probability sampling method to select your subjects (Quantitative strand) 				
10. Model Answer					
	<table> <tr> <td>Inner Reliability</td> <td> <ul style="list-style-type: none"> • Data should be coded by independent researchers and Cohen's kappa coefficient should be calculated to determine inter-rater reliability of themes (qualitative strand) • Measurements should be applied consistently (quantitative strand). </td> </tr> <tr> <td>Outer Reliability</td> <td> <ul style="list-style-type: none"> • All data collected should be used to meet needs. (Qualitative strand) • The conditions for research should be standardized (Quantitative strand). </td> </tr> </table>	Inner Reliability	<ul style="list-style-type: none"> • Data should be coded by independent researchers and Cohen's kappa coefficient should be calculated to determine inter-rater reliability of themes (qualitative strand) • Measurements should be applied consistently (quantitative strand). 	Outer Reliability	<ul style="list-style-type: none"> • All data collected should be used to meet needs. (Qualitative strand) • The conditions for research should be standardized (Quantitative strand).
Inner Reliability	<ul style="list-style-type: none"> • Data should be coded by independent researchers and Cohen's kappa coefficient should be calculated to determine inter-rater reliability of themes (qualitative strand) • Measurements should be applied consistently (quantitative strand). 				
Outer Reliability	<ul style="list-style-type: none"> • All data collected should be used to meet needs. (Qualitative strand) • The conditions for research should be standardized (Quantitative strand). 				
11. Model Answer	If you do not keep up with ethical procedures in the research, your research become meaningless and you can get some penalties by the ethical committee in your institution and as a scientist you have a bad reputation'(Gunbayi,2018).				

2.15. Practice exercise

You should follow the directions below for the practice exercise for enabling objective #1:

- Check your ability to write up the methodology of the MMR-DACUM data using the following checklist as a guide.
- Discuss the basics of this task with your co-researcher.
- Practice each stage of writing the MMR-DACUM data methodology.

- Ask your co-researcher or supervisor to use the checklist to assess your ability to carry out this task.

Table 6.

Practice exercise for enabling objective #1

Writing the Methodology of Mixed methods Data			
Actions	Level of Performance		
	Yes	With Help	No
When writing the methodology of mixed methods data, the learner...			
1. Determine the appropriate title for the manuscript.			
2. Complete abstract and keywords that accurately reflect the content.			
3. Research problem clearly defined, linked to relevant literature, up to date, completed with literature review with appropriate references.			
4. Define research questions appropriate to the research objective, both quantitative and qualitative strands of research.			
5. Select mixed methods design appropriate to the aim of the research.			
6. Select the timing of quantitative and quantitative methods.			
7. Determine the weight of quantitative and quantitative methods.			
8. Specify how to mix quantitative and quantitative methods.			
9. Explained sampling methodology, selected appropriate sampling size for both quantitative and qualitative strands of research.			
10. Explained data collection method through qualitative (semi-structured individual and focus group interviews, organised observations and collected documents) and quantitative (experiments, surveys, tests and scales) forms and instruments.			
11. Steps taken to ensure the reliability and validity of the study for both quantitative and qualitative strands of research.			

Level of performance: Upon completion of this exercise, participants should be able to discuss and execute each of the actions with confidence. It is expected that all items on the checklist will receive a rating of 'Yes'. In the event that a 'With help' or 'No' rating is received for any item; participants are advised to conduct a review of their performance in consultation with their mentor.

3. Analyzing MMR-DACUM Data

As illustrated in Table 7: Learning Experience #2, it is imperative to adhere to the sequence of learning activities, meticulously attending to the specific instructions in the practical analysis of MMR-DACUM data.

Table 7.

Learning experience #2

Enabling Objective #2: Practice Analysing Mixed methods Data	
Learning Activities	Special Instructions
Read the Information Sheet titled 'Practice Analyzing MMR-DACUM Data' on 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 and 3.9.	
Watch the qualitative and quantitative data analysis video, read quantitative and quantitative data analysis tutorials and identify the important messages to convey about your university when analyzing MMR-DACUM data.	<p>You can easily find great videos on qualitative and quantitative data analysis on platforms like YouTube. Here are some search terms you can use:</p> <ul style="list-style-type: none"> • "Qualitative Data Analysis Explained" • "Quantitative Data Analysis Tutorial" • "Qualitative vs Quantitative Data Analysis"



You can also check out educational platforms like Coursera , edX , or Khan Academy for more structured learning on these topics.	
Discuss with the mentor expert in MMR-DACUM at your faculty the methods he or she uses to analyze MMR-DACUM data. What would you have to do differently?	
Demonstrate your knowledge of analyzing MMR data by completing the Self-Check on 3.9	
Check your answers against the Self-Check Model Answers on 3.10	Ask your mentor to suggest a co-researcher who can observe and help you with your practice sessions and the Practice Checklist.
Practice Analyzing MMR-DACUM data while the academic staff expert in MMR observes and offers help as needed. Ask the academic staff expert in MMR-DACUM to use the checklist titled 'Practice Analyzing Mixed methods Data' on 3.11 to assess your progress.	

3.1. Conducting the DACUM Workshop and Analysing

DACUM occupational analysis is one of the widely used small-group methods for conducting occupational function analysis (Duzguncinar& Gunbayi, 2020). It uses focus groups of people who perform the occupation to identify the tasks and duties involved in a particular occupation (Jacobs, 2019). The DACUM occupational analysis should be conducted by certified DACUM facilitators under the standards in the DACUM manual.

For example, the conducting procedure of DACUM workshops in the study 'DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)' is as follows:

DACUM was conducted for officers serving in four different maritime jurisdictions of the Coast Guard (Black Sea, Marmara Sea, Aegean Sea and Mediterranean Sea). Each of these analyses lasted for two days, with morning and afternoon sessions, and a total of 24 officers, both men and women, participated in the workshops. The permission of the Coast Guard was requested for the DACUM workshops to be held and the administration allowed the participation of officers who did not have any duty at that time. The participants covered their transport, food and accommodation expenses and no budget expenditure was made in this direction. All of the officers who participated in the sessions stated that they volunteered for the study, and their permission was obtained through the Participant Permission Form [Annex 4]. A seven-stage procedure was applied by the DACUM mechanics (Norton, 1995). Firstly, an orientation presentation explaining the method of the workshop, the role of the participants (facilitator, secretariat and panelists) and the basic rules of the workshop was made for the participants to adapt to the workshop. Then, the definition of the Coast Guard officer profession was reviewed with the participants. To form the basis of the DACUM workshop, the panelists stated in order which duties they performed as a Coast Guard officer, and the secretariat recorded them on the boards for everyone to see. In the next stage, these statements of the officers were categorized as 'duty' and 'task'. At this stage, the tasks were listed in columns on the far left of the DACUM board, while the work performed under each task was placed to the right of the relevant task. The panelists then ranked the tasks and then the tasks under each task in order of priority. In the next step, the participants identified the knowledge, skills and behaviors that an officer should possess, the equipment and materials they use, the threats and opportunities for the officer profession, and the abbreviations they use during the performance of the task. In the final part, the participants carefully reviewed all the DACUM materials they produced during the two days. This procedure was rigorously followed during the DACUM exercise in all four regions.

3.2. Analyzing the findings of qualitative data collected via DACUM

The findings of the DACUM workshops should be analysed under the headings of knowledge and skills, especially duties and tasks, behaviors, systems and devices used, abbreviations, and future trends in accordance with the DACUM mechanics (Norton, 1995; Jacobs, 2019).

For example, the DACUM chart in the study ‘DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)’ is as follows:

Table 4.1. Officer DACUM Analysis

Duty	Task
A. Supervision	A.1 Keep the Morale of the Staff High
	A.2 Be able to carry out disciplinary procedures
	A.3 To be able to organise personal files
	A.4 Be able to make evaluation process
	A.5 To be able to ensure staff coordination
	A.6 To be able to plan personnel leaves
	A.7 Be able to prepare the shift schedule
	A.8 Be able to follow the health status of the personnel
	A.9 To be able to make personal transactions of personnel
	A.10 Be able to give feedback to his/her staff
	A.11 To be able to control the dress and attire of the personnel
	A.12 To be able to observe the personal rights of the personnel

...
When the tasks under each task in the DACUM occupational analysis table are analyzed, it is seen that the most jobs are defined for ‘Performing Law Enforcement Duties’ with 36 jobs. This is followed by ‘Being a Supervisor, ‘Keeping the ship ready for navigation and duty’ and ‘Conducting law enforcement affairs’ with 12 tasks. This situation shows that the most complex tasks of the officers are law enforcement and maritime activities and that they make more effort to perform these tasks. The fact that only five tasks were identified for the task of ‘Conducting Intelligence Affairs’ shows that this task is more apparent to the officers and does not require a complex sequence of operations.

3.3. Creation of the Occupational Analysis Scale (OAS)

The OAS, which is also used in the quantitative phase of the study, has been prepared in accordance with the data obtained from the DACUM in four sections; (1) demographic information about the participants, (2) duties, (3) tasks, (4) knowledge and skills to be possessed, tools, equipment and materials used, behaviors expected, (5) tendencies for the future of the occupation. In this section, respondents should choose an option between 5, the highest, and 1, the lowest, for the level of performance of the work under the task. In the other sections, if they agreed with each statement, they should tick the box next to it. Since all the data in the questionnaire are taken from the DACUM, there is no need for a pilot study or expert opinion to test the reliability and validity of the questionnaire.

For example, the OAS in the study ‘DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)’ is as follows:

Annex-2. OCCUPATIONAL ANALYSIS SCALE

Occupational Analysis Questionnaire Prepared within the Scope of DACUM Analysis Application Regarding the Occupations of Coast Guard Officers

Hello, this questionnaire is designed as a data collection tool of a research conducted to determine the level of distribution of the tasks performed by the officers serving in the floating elements of the Coast Guard Services class within the scope of their occupational analyses. The purpose of this study; The purpose of this study is to make an occupational analysis of the duties performed by coast guard officers in their profession and to analyse their opinions on the level of realization of their duties in line with the issues determined in this analysis.

PART I.

The region where you are currently working (Please “x” for only one)

Black Sea ()

Marmara and Straits ()

Aegean ()

Mediterranean ()

PART II

Tasks Performed Under Tasks

In this section, you are expected to evaluate the extent to which each task is personally performed by the officers. While making your evaluation, you are asked to indicate your degree of agreement with the following statements by marking the appropriate option (x), with a minimum of 1 and a maximum of 5. Please tick one level for each statement.

1. Level of Realization of the Works Performed under the Task of Executing Supply and Logistics Affairs

Tasks	1	2	3	4	5
Should be able to follow the feeding procedures					
Ensure that the inventory list is up to date					
Ensure the operation of the ship's buffet					
To be able to carry out Scrap Wreckage Dilapidated (HEK) Operations					
Should be able to follow procurement activities					
Should be able to procure services					
Should be able to apply saving measures					
To be able to make Movable Goods Record Deletion Operations					

3.4. Analyzing the findings of quantitative data collected via OAS

In the quantitative strand, data analysis is to be conducted on the results of experiments, quasi-experiments, questionnaires, scales and tests. The utilization of quantitative research methodologies, such as experiments, quasi-experiments, surveys, correlation studies, longitudinal studies, and so forth, is the sole acceptable method of generating data based on objective measurement and analysis. This assertion is supported by the works of Gunbayi & Sorm (2018), who posit that the objective of quantitative research is the collection of numerical data that can be analysed using statistical methods. The utilization of a computer program designed for quantitative data analysis, such as SPSS, can facilitate the analysis process.

For example, analysing methodology of the quantitative data in the study 'DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)' is as follows:

The quantitative data of the study were obtained from the MLS and analyzed using the SPSS 25 package. The basis of quantitative research is to measure, prove and generalize the universe. Therefore, the values obtained from the MLS were converted into numerical averages. In the study, descriptive statistics were used to analyze the data relating to the duties of the officers and the tasks performed in the course of their duties. Descriptive statistics, which are considered part of applied statistics along with predictive statistics, are used to summarize or explain the collected data (Suleymanova & Omuraliev, 2015). Researchers use descriptive statistics when they need to summarize a sample numerically or graphically. Correlation analysis (CA) was used to analyze whether there was a relationship between the duties of the officers, as determined by the DACUM occupational analysis. CA is a scientific statistical technique that tests the direction and strength of a relationship between two variables (Diggle & Chetwynd, 2011). Multiple frequency analysis and chi-square test were used to test whether the difference between the observed frequencies and the expected frequencies of the other information obtained in the occupational analysis (knowledge, skills, expected behaviors, tools and materials used, threats and opportunities for the officer occupation) was statistically significant. The Chi-square test measures whether the difference between the observed and expected frequencies is statistically significant (Büyüköztürk, 2005). This test is expressed in degrees of freedom (SD) and is generally used to (1) test whether there is a difference between two or more groups, (2) test whether there is a relationship between two variables, and (3) test for homogeneity between groups. The chi-square test is used when the groups are independent of each other (Güngör, 2008).

The results of the descriptive statistical analysis of the level of realisation of the duties of the officers within the framework of DACUM occupational analysis are given in Table 4.9.

Table 4.9. Level of Realisation of Officers' Duties

Variable	N	\bar{X}	SS
Supervising	217	4,55	0,49
Keeping the ship ready for navigation and duty	217	4,67	0,46
Conducting training activities	217	4,45	0,64
Monitoring	217	4,48	0,56
Conducting protocol affairs	217	4,65	0,53
Conducting law enforcement affairs	217	4,55	0,55
Watchkeeping	217	4,66	0,53
Conducting Intelligence affairs	217	4,44	0,71
Performing Coast Guard duties	217	4,59	0,58
Conducting supply and logistics activities	217	4,28	0,82

When the table is analyzed, it is seen that the realization level of all of the officers' duties determined as a result of the DACUM analysis is at the "Very High" level. Among the duties, 'Conducting Supply and Logistics Affairs' was realized at the lowest level (4,28) and 'Keeping the Ship Ready for Navigation and Mission' at the highest level (4,67).

3.5. Analyzing the findings of qualitative data collected from interviews descriptively and doing content analysis

As explained in 3.1, the first step is to transcribe the individual interviews, review them repeatedly, and code them regularly using the qualitative software NVIVO. Then, the frequency analysis according to the coded themes and sub-themes can be shown, and the data can be analyzed descriptively under this table in the study 'DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)' is as follows:

Table 4.28. Tasks Mentioned by the Officers in the Focus Group Discussion

Duties	Code of Participant	F	%
Supervising	KA, KB, KC, KD, KE, KF	6	100
Keeping the ship ready for navigation and duty	KA, KB, KD, KE	4	66
Conducting training activities	KA, KC, KD	3	50
Monitoring	KB, KD, KE	3	50
Conducting protocol affairs	KB, KC	2	33
Conducting law enforcement affairs	KA, KB, KE, KF	4	66
Watchkeeping	KA, KB, KC, KD	4	66
Conducting Intelligence affairs	KA, KC, KD	3	50
Performing Coast Guard duties	KB, KC, KD	3	50
Conducting supply and logistics activities	KA, KC	2	33

When the table is analysed, it is seen that the participants mentioned the task of 'Supervising' the most (100%). The participants mentioned the tasks of 'Conducting Protocol Affairs' and 'Conducting Supply and Logistics Affairs' as the least (33%).

4.3.1. Findings on the Task of 'Supervising'

The distribution of the officers who mentioned the duty of 'Supervising' is presented in Table-4.29.

Table-4.29 Distribution of the officers who mentioned the duty of supervising

Duty	KA	KB	KC	KD	KE	KF
Supervising	√	√	√	√	√	√

When the table is analyzed, it is seen that all of the participants mentioned the task of 'being a supervisor'. The opinions of some of the participants about the task of 'Supervising' are as follows

"I would like to emphasize that the sub-heading of keeping the morale of the staff high should be elaborated. In the 12-item DACUM analysis, I think that the definition of supervision is summarized in general. I think that details can be given by creating sub-items. When we say to supervise, I think that the big picture is seen in the general framework by looking at these items." (KA-1,1)

"I think that other important items can be gathered under one roof under the item 'Being a Supervisor' in the DACUM analysis." (KB-1,2)

3.6. Analysis of the results of the qualitative data collected during the interviews with the focus groups

To analyze the data derived from focus group interviews, it is first necessary to create a transcript of the interviews, which should then be reviewed repeatedly and continually coded by the procedures outlined in sections 3.5.

3.7. Analyzing the findings of qualitative data collected via documents

In the context of data analysis, it is imperative to meticulously review and systematically code the data collected from documents. This process should be undertaken with the same rigour and consistency as employed in Section 3.5.

For example, analyzing the quantitative data from documents in the study ‘DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)’ is as follows:

The document analysis was based on the legislation (Official Journal, 1982), regulations (T.C. Official Journal, 2017) and the regulation (Coast Guard, 2021) published for the personnel serving in the floating elements of the Coast Guard. The purpose of the mentioned legislation is to define the duties, powers and responsibilities of the personnel serving in the floating elements within the organizational structure of the Coast Guard. The duties of the officers serving in the floating elements of the Coast Guard, which are the subject of this study, are regulated by the regulation (Coast Guard, 2021) published on the basis of the law and the policy. According to this policy, the floating elements within the organizational structure are obliged to fully comply with the matters specified in the directive. In the directive, the duties of the officers are divided into four sections: civil duties, judicial duties, military duties and individual duties of the personnel. The comparison of these duties with the duties obtained in the DACUM occupational analysis is presented in Table-4.39.

Table-4.39 Comparison of the Tasks Obtained in the DACUM Occupational Analysis with those in the Regulations

Duty	Number of Tasks in the Legislation
Supervising	12
Keeping the ship ready for navigation and duty	10
Conducting training activities	7
Monitoring	10
Conducting protocol affairs	4
Conducting law enforcement affairs	32
Watchkeeping	8
Conducting Intelligence affairs	4
Performing Coast Guard duties	9
Conducting supply and logistics activities	8

3.8. Tools, equipment, supplies, and materials

The following tools, equipment, supplies and materials are required for the analysis of MMR-DACUM data:

Table 8.

Tools, equipment, supplies, and materials for enabling objective #2

<ul style="list-style-type: none"> • Voice recorder • Camera • Computers • Textbooks, Articles • Databases in related field • Dissertations 	<ul style="list-style-type: none"> • Quantitative analysis software (SPSS, Lisrel, etc.) • Qualitative Analysis Software (NVIVO) • Plagiarism Detection Software (Turnitin, Ithenticate) • Ms Office • Internet • Printer/scanner/fax
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3.9. Worker behaviors

Academic behaviour plays a key role in the analysis of MMR-DACUM data. The behaviours that are important to your success in this role are

Table 9.

Worker behaviors for enabling objective #2

<ul style="list-style-type: none"> • Careful • Detail oriented • Hardworking • Creative • Innovative 	<ul style="list-style-type: none"> • Self-motivated • Flexible • Trustworthy • Adaptable • Ethical Reliable
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3.10. Self-check

Instructions: Check your knowledge of the practice of analysing mixed methods data by answering the following questions. For true/false questions, circle 'true' if the statement is true and circle 'false' if the statement is false. For multiple-choice questions, choose the most correct answer. For short answer questions, write a short answer to the question. Compare your answers with those in the following Self-Check Model Answers.

Table 10.

Self-check model questions for enabling objective #2

1. Identify the main reason for using mixed methods data in a single study.
2. Identify the steps in analysing qualitative data.
3. In quantitative data analysis, data should be organised categorically and chronologically, checked repeatedly and coded continuously.
a. True
b. False
4. In you can analyse the data in depth by explaining the relationship between the independent variable and the dependent variable.
a. Thematic analysis
b. Descriptive analysis
c. Content analysis
d. Kappa
5. What is the difference between NVIVO and SPSS software?

3.11. Self-check model answers

Directions: Compare your answers to the self-check with the model answers provided below.

Table 11.

Self-check model answers for enabling objective #2

1. Model Answer
Mixed methods data provide a more complete understanding than either quantitative or qualitative alone
2. Model Answer
Qualitative data analysis includes three steps: thematic analysis, descriptive analysis and content analysis.
3. False
During quantitative data analysis data are organized in terms of numbers based on the results of experiments, quasi-experiments, questionnaires, scales, tests.
4. c.
Content analysis
5. Model Answer

The qualitative data analysis program NVIVO facilitates the organization of data and recodes, nodes, and other elements, thereby supporting researchers in their analysis of qualitative data. It provides a workspace and a range of tools that enable researchers to efficiently manage their information. Conversely, SPSS statistics software is utilized exclusively for performing statistical operations on quantitative data.

Level of Performance: The responses given to the items on the Self-Check must match the Self-Check Model Answers. If some points are missed or questions arise, the Information Sheet should be consulted, or, if necessary, the mentor should be approached for guidance.

3.12. Practice Exercise

You should follow the directions below for the practice exercise for enabling objective #2:

- The following activities are to be conducted under the checklist provided.
- It is imperative to continue practising until a 'Yes' rating is achieved for each item on the checklist provided in this Practice Exercise.
- The activities should then be checked by a colleague using the checklist below.

Table 12.

Practice exercise for enabling objective #2

Analyzing MMR-DACUM Data			
Actions	Level of Performance		
	Yes	With Help	No
When analyzing MMR data, the learner...			
1. Conduct the DACUM professional analysis by certified DACUM facilitators according to the standards in the DACUM handbook.			
2. Analyze the findings from the DACUM workshops in accordance with the DACUM mechanics under the headings of knowledge and skills, especially tasks and jobs, behaviors, systems and devices used, acronyms and future trends.			
3. Prepare and implement the OAS, which will also be used in the quantitative phase of the study, in line with the data obtained from DACUM.			
4. Analyze the findings of quantitative data collected via OAS			
5. Analyze the findings of qualitative data collected from interviews descriptively and doing content analysis			
6. Analyze the findings of qualitative data collected via documents			

Level of performance: By the end of this exercise, you should be able to discuss and carry out each of the actions in this exercise with confidence. Your ratings on the checklist for this exercise should be 'Yes' for all items. If you have received ratings of 'With Help' or 'No' for any of the items, review your performance with your mentor.

4. Discuss and conclude results

As seen in Learning Experience #3, you should follow the steps of the learning activities, paying attention to the special instructions in the practice discussing and concluding results of MMR-DACUM data.

Table 13.

Learning experience #3

Enabling Objective #3: Practice discussing and concluding results of MMR-DACUM data	
Learning Activities	Special Instructions
Read the information sheet entitled 'Practicing, discussing and concluding the results of MMR-DACUM data' on 4.1, 4.2, 4.3 and 4.4, 4.5 and 4.6.	
Watch the video on Discussing and Concluding Results of MMR-DACUM Data Analysis, read the tutorials on Quantitative Data Analysis and identify the important messages to convey about your academic position at university when discussing and concluding results of MMR-DACUM data.	You can easily find great videos on qualitative and quantitative data analysis on platforms like YouTube. Here are some search terms you can use: <ul style="list-style-type: none"> • "Qualitative Data Analysis Explained" • "Quantitative Data Analysis Tutorial" • "Qualitative vs Quantitative Data Analysis" You can also check out educational platforms like Coursera , edX , or Khan Academy for more structured learning on these topics.
Discuss with the mentor expert in MMR-DACUM at your faculty the methods he or she uses to analyze MMR-DACUM data. What would you have to do differently?	
Demonstrate your knowledge of analyzing MMR data by completing the Self-Check on 4.7.	
Check your answers against the Self-Check Model Answers on 4.8.	Ask your mentor to suggest a co-researcher who can observe and help you with your practice sessions and the Practice Checklist.
Practice Analyzing MMR-DACUM data while the academic staff expert in MMR observes and offers help as needed. Ask the academic staff expert in MMR-DACUM to use the checklist titled 'Practice Analyzing Mixed methods Data' on 4.9. to assess your progress.	
Arrange to complete this Learning Guide entitled 'Systematic Curriculum and Instructional Development for a Mixed Methods Research-DACUM: SCID-MMR-DACUM' by asking your mentor to assess your performance using the criteria in the performance test on 5, 5.1.	

4.1. Discussing results of MMR-DACUM

It is essential to determine the findings to be prioritised and to engage in a thorough analytical discussion, with a focus on identifying the findings from previous studies that significantly contribute to the phenomena under investigation. Additionally, it is crucial to examine the similarities and differences between the present MMR-DACUM and previous studies, thereby ensuring a meaningful contribution to the existing research literature.

For instance, an analytical discussion of the contributions of qualitative and quantitative findings to the phenomena of the research is warranted. This discussion is to be based on the drawing of conclusions from the qualitative and quantitative findings during the overall interpretation at the conclusion of the research in the study 'DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)', as follows.

The data obtained through the DACUM job analysis are similar to the results of the officer job analysis conducted by Kâhya et al. (2022) for district gendarmerie commanders and another armed law enforcement officer, using the

document review and content analysis method. This study analyzed officers' duties under the headings of general duties, civil duties, judicial duties, military duties, and judicial duties. Just as it was concluded that the district gendarmerie commanders have a large number of duties resulting from legislation and orders, the DACUM analysis shows that the most intensive duty in terms of the number of tasks performed under the task is 'execution of law enforcement affairs', which is justified by the legislation itself. The above-mentioned study mentions that district gendarmerie commanders, by virtue of their position as senior officers, are obliged to act as role models for their subordinates. The questions here refer to the task of 'acting as a supervisor' identified by the officers in the DACUM occupational analysis. Compared to the study on district gendarmerie commanders, it can be said that the DACUM occupational analysis is a powerful method of analysis that examines the officer profession in depth in every dimension and contains more information about coast guard officers.

4.2. Summarizing and concluding results of MMR-DACUM

It is crucial to determine a significant conclusion that is consistent with the findings of the research. This will ensure that readers who briefly review the summary and conclusion of the research are not aware of the MMR-DACUM and are able to cite the research.

For instance, summarizing and concluding of the MMR-DACUM in the study 'DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)', as follows.

The present study examined the applicability of the DACUM method to the officers' duties, with the results of the DACUM analysis being used to measure the level of realisation of the officers' duties. The findings demonstrated that the level of realisation of the officers' duties was high and consistent across all duties, thus validating the efficacy of the DACUM approach. The methodology of DACUM is derived from real-life experiences of those who perform the profession, thereby ensuring its relevance and applicability. As Norton (1997) asserts, employees (in this case, officers) possess the capacity to define their occupations and elucidate their tasks with greater precision than any other group. An efficacious approach to defining an occupation entails the identification of performance indicators exhibited by the occupation's experts.

4.3. Reporting recommendations of MMR-DACUM

It is incumbent upon the author to determine which recommendations to propose for both practitioners and researchers. These recommendations must be both attractive and innovative and must be consistent with the author's findings. The publication of research findings has the potential to influence prospective researchers, thereby enabling the author to guide them and establish a reputation as a renowned scholar in their field.

For instance, reporting recommendations of the research in the study 'DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)', as follows.

This study analyses the duties of officers within the Coast Guard. However, it is important to note that the Coast Guard personnel structure also comprises petty officers, specialised non-commissioned officers, civil servants and labourers in addition to officers. The critical tasks performed by these personnel, other than the officers, affect the performance of the floating elements and the officers who are the subject of this study. Consequently, conducting occupational analyses for these personnel can elucidate the discrepancies between the desired and actual situations in domains such as personnel mobility, attitude surveys, and supervisor-subordinate relations. Such analyses can also serve to update the fundamental tasks.

4.4. Writing references and adding appendices of MMR

It is also the responsibility of the author to ensure that the references are organised correctly, whether in number or alphabetical order. This is to be done by the author's guidance of the journal for which the manuscript is being submitted, as well as the journal's manuscript writing guidelines. Failure to comply with these instructions may result in the manuscript being rejected or returned to the author for redesign by the journal's reviewers and editors.

For example, an organization and writing references of the study ‘DACUM analysis of the coast guard officers and their views on the level of accomplishment of their duties: Multi-stage mixed method research (Duzguncinar, 2023)’, as follows.

Table 14.

A sample of writing of references

References

- Adams, R. E., Hogan, R. L., Steinke, L. J. (2015). DACUM the seminal book. Wilmington, DE: Edwin & Associates, LLC
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-

Source: Duzguncinar (2023)

It is also recommended that appendices be included, such as a consent form, ethical committee approval, and formal permissions, including Institutional Review Board (IRB) approval from institutions, interview forms, and questionnaires. The following serves as an example of a consent form:

Table 15.

A sample of consent form

Participant Consent Form

By signing this form, I indicate that I agree to participate in a study conducted by Tarkan DÜZGÜNÇİNAR on ‘Coast Guard Officers’ DACUM Analysis of their Professions and their Opinions on the Level of Realisation of their Duties’.

It also indicates that I have read and understood the following information before giving it:

- I am a volunteer and can withdraw from the study at any time.
- There is no risk of physical or psychological harm.
- The information I provide will be kept strictly confidential and all data will be collected and analysed by the researcher and stored securely. It will then be destroyed after the report has been officially submitted.
- I will receive a summary of the study upon request.
- I authorise the researcher to conduct the research and to publish its results.
- I, (Name and Surname), agree to participate in this data collection.

Signature of the Participant

(Date, / /)

Source: Adapted from Duzguncinar (2023).

4.5. Tools, equipment, supplies, and materials

The following tools, equipment, supplies and materials are required for the analysis of MMR-DACUM data:

Table 16.

Tools, equipment, supplies, and materials for enabling objective #3

<ul style="list-style-type: none"> • Computers • Textbooks, Regulations, Articles • Databases in related field • Internet • Printer/scanner/fax 	<ul style="list-style-type: none"> • Quantitative analysis software (SPSS, Lisrel, etc.) • Qualitative Analysis Software (NVIVO) • Plagiarism Detection Software (Turnitin, Ithenticate) • Ms Office
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4.6. Worker behaviors

Academic behavior plays a key role in the analysis of MMR-DACUM data. The behaviors that are important to your success in this role are

Table 17.

Worker behaviors for enabling objective #3

<ul style="list-style-type: none"> • Proactive • Leader • Open-minded • Creative • Innovative 	<ul style="list-style-type: none"> • Flexible • Trustworthy • Adaptable • Objective
--------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------

4.7. Self-check

Instructions: Check your knowledge of the practice of analyzing mixed methods data by answering the following questions. For true/false questions, circle 'True' if the statement is true and circle 'False' if the statement is false. For multiple-choice questions, choose the most correct answer. For short answer questions, write a short answer to the question. Compare your answers with those in the following Self-Check Model Answers.

Table 18.

Self-check model questions for enabling objective #3

1. Decide where and how to mix the quantitative and qualitative strands while discussing the findings and which findings to take priority and discuss analytically. True False
2. Not necessarily write significant conclusions consistent with the findings. True False
3. When does a researcher mix quantitative and qualitative strands in an MMR, when he/she decides on an independent level of interaction?
4. How should the references be organized? Why?
5. Why should the researcher decide what recommendations to make to both practitioners and researchers by proposing attractive and innovative recommendations that are consistent with the findings?

4.8. Self-check model answers

Directions: Compare your answers to the self-check with the model answers provided below.

Table 19.

Self check model answers for enabling objective #3

1. True	
2. False	The researcher only mixes the two strands when drawing conclusions in the overall interpretation at the end of the study.
3. False	During quantitative data analysis data are organized in terms of numbers based on the results of experiments, quasi-experiments, questionnaires, scales, tests.
4. Model Answer	The researcher should organize the references in numerical or alphabetical order, taking into account the guidelines for authors of the journal you are submitting to and its guidelines for writing manuscripts. Failure to do so may result in the manuscript being rejected or returned to you for revision by the reviewers and editors of a journal.
5. Model Answer	As a scholar, published manuscript can influence future researchers, so he/she can lead them, and can lead fellow scientists in the field.

Level of Performance: The responses given to the items on the Self-Check must match the Self-Check Model Answers. If some points are missed or questions arise, the Information Sheet should be consulted, or, if necessary, the mentor should be approached for guidance.

4.9. Practice Exercise

You should follow the directions below for the practice exercise for enabling objective #3:

- The following activities are to be conducted under the checklist provided.
- It is imperative to continue practicing until a 'Yes' rating is achieved for each item on the checklist provided in this Practice Exercise.
- A colleague should then check the activities using the checklist below.

Table 20.

Practice test for enabling objective #3

Analyzing MMR-DACUM Data			
Actions	Level of Performance		
	Yes	With Help	No
When discussing and concluding results of a MMR-DACUM data, the learner...			
1. Discuss the findings using key themes according to the results of the qualitative and quantitative data collected according to the MMR design.			
2. Explain why this study is being done and its implications			
3. Report recommendations for both practitioners and researchers			
4. Order references systematically and consistently			
5. Keep appendices for outer reliability			

Level of performance: By the end of this exercise, you should be able to discuss and carry out each of the actions in this exercise with confidence. Your ratings on the checklist for this exercise should be 'Yes' for all items. If you have received ratings of 'With Help' or 'No' for any of the items, review your performance with your mentor.

5. Performance Test

You are to complete the task of developing an MMR-DACUM manuscript based on the SCID as required. Your mentor will assess your performance using the criteria in the Performance Test and Performance Standards in Table 21 and Table 22 below.

Table 21.

Performance test for developing a MMR manuscript.

Learner's Name:	Date
Competency: <i>Developing a MMR-DACUM manuscript based on SCID.</i>	Test Attempt 1 st 2 nd 3 rd
Mentor's Signature/Approval	Overall Evaluation
	Level Achieved
Directions: The mentor will provide the researcher with one or more opportunities to write an MMR manuscript, and the researcher will be responsible for taking the necessary actions to deal with the situation in a way that meets the researcher's academic requirements and research ethical practices. The mentor will assess the researcher's performance using the criteria below.	Performance Levels
	4 – Can perform this skill without supervision and with initiative and adaptability to problem situations.
	3 – Can perform this skill satisfactorily without assistance or supervision
	2 – Can perform this skill satisfactorily, but requires some assistance and/or supervision.
	1 – Can perform parts of this skill satisfactorily but requires considerable assistance and/or supervision.
	Mentor will initial level achieved.

5.1. Performance standards

Following the completion of the task of developing a MMR-DACUM manuscript, the next step is to complete the performance standards. If any item receives a 'NO' response, consultation with a mentor is required to determine the additional activities necessary to achieve competency in the weak area(s) of developing a MMR-DACUM manuscript based on SCID.

Table 22.

Performance standards for developing a MMR manuscript based on SCID

For acceptable achievement, all items should receive a 'Yes' or 'N/A' response.	Yes	No	N/A
<i>When developing a MMR manuscript, the learner...</i>			
1. Defined the research problem and aim clearly,			
a. Tied to the relevant literature,			
b. Up to date,			
c. Completed with literature review with appropriate references			
2. Determined research questions appropriate with research aim for both quantitative and qualitative strand of research			
3. Explained what mixed typed designs and variants chosen:			
a. The convergent parallel design: The parallel-databases variant, The data transformation variant, the data-validation variant			

-
- b. The explanatory sequential design: Follow-up explanations model, participant selection model
 - c. The exploratory sequential design: Instrument-development variant, theory-development variant
 - d. The embedded design: Embedded experimental model, embedded correlational model, embedded instrument development and validation variant
 - e. The multi-phase design: large-scale program development and evaluation projects, multi-phase studies, single mixed-methods studies combining both concurrent and sequential phases
 - f. The transformative design: the feminist lens transformative variant, the disability lens transformative variant, the socio-economic class lens transformative variant.
 - g. Action study: Technical Action Study, Participatory Action Study, Emancipatory Action Study
-
- 4. Selected mixed methods design consistent with the aim of the research
 - 5. Explained sampling methodology, selecting the correct sample size for both quantitative and qualitative research.
 - 6. Explain the data collection method for both quantitative and qualitative strands of the research.
 - a. Qualitative strand: interviews: individual and focus group, participatory observations, documents.
 - b. Quantitative area: experiments, questionnaires, scales, tests, annual statistics, etc.
 - 7. Steps taken to ensure the reliability and validity of the study for both quantitative and qualitative aspects of the research.
 - 8. Accurately reported ethical procedures (e.g. avoiding plagiarism, ensuring anonymity of participants, obtaining written consent from participants, formal approvals, Institutional Review Board (IRB)).
 - 9. Analyzed MMR data separately or together, taking into account the interaction, timing, priority and mixing of qualitative and quantitative data, based on mixed design or variant choices.
 - a. Organized qualitative data - interviews: individual and focus group, participatory observations, documents - categorical and chronological, repeatedly reviewed, continuously coded.
 - b. Organized quantitative data - experiments, questionnaires, scales, tests, annual statistics, etc. - in terms of numbers.
 - 10. Discussed findings using main themes of findings from qualitative and quantitative data collected according to MMR design choices via:
 - a. Qualitative strand: Interviews - individual and focus group, participant observation, documents
 - b. Quantitative strand: Experiments, questionnaire, scales, tests, annual statistics etc.
 - 11. Outlined why this study is done and its implications
 - 12. Reported recommendations both for practitioners and researchers
 - 13. Ordered references systematically and consistently
 - a. Kept appendices for outer reliability
-

Level of Performance: It is requisite that all items receive a YES or NO response. In the event of any items receiving a NO response, consultation with the relevant mentor is required in order to ascertain the additional activities necessary to achieve competency in the weak area(s).

6. Conclusion

This study presents a learning package that provides the necessary knowledge, attitudinal information and practice opportunities to enable the development of a MMR-DACUM manuscript based on SCID (Norton & Moser, 2013). The package is designed to impart the knowledge and skills required to perform the task of developing a MMR-DACUM manuscript based on SCID.

The learning package has been designed to facilitate understanding of complex concepts, skills and attitudes, with the objective that these can be accepted and applied by all learners in the process of developing a MMR-DACUM manuscript. The learning package has been developed to suggest basic steps in developing a MMR-DACUM manuscript that academic staff and master/doctoral students in the social sciences can follow. The package is designed to be practised by the learner in order to facilitate understanding of how to perform the task of developing a MMR-DACUM manuscript effectively.

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Conflicts of Interest

No conflict of interest has been declared by the author

Author Contribution

Corresponding author Tarkan Duzguncinar: Conceptualization, data curation, investigation, methodology, writing original draft, review & editing.

Declaration of Competing Interest

This research did not receive any specific grant from funding agencies in the public, commercial or non-profit sectors.

Ethics Approval

In the writing process of the study titled “**Systematic curriculum and instructional development for a mixed methods DACUM research: SCID MMR-DACUM**”, the rules of scientific, ethical and citation were followed; it was undertaken by the author of this study that no falsification was made on the collected data. “Journal of Action Qualitative & Mixed Methods Research and Editor” had no responsibility for all ethical violations to be encountered, and all responsibility belongs to the author and that the study was not submitted for evaluation to any other academic publishing environment.

Institutional review board (IRB) approval

Institutional Review Board (IRB) approval of this research is not required.

Data Availability Statement

Anonymized data from this study can be made available on request from t.duzguncinar@antalya.edu.tr

APPENDIX 1 Duty/Task: SCID for a MMR-DACUM

STEPS (Required to Perform the Task)		PERFORMANCE STANDARDS (Observable & Measurable Criteria)		TOOLS, EQUIPMENT, SUPPLIES & MATERIALS (Needed)		REQUIRED KNOWLEDGE AND SKILLS (Math, Science, & Language)		SAFETY (Concerns)	
1	Determine the title of the manuscript.	1	Determined title appropriate with the manuscript	1	Reference books, articles, dissertations	1	Master / PhD degree in the related field	1	N/A
2	Write the abstract and key words.	2	Completed abstract and key words that reflected the content accurately	2	Database searching engine	2	Decision Making,	2	N/A
3	Review the literature.	3	Defined the research problem clearly, tied to the relevant literature, up to date, completed with literature review with appropriate references	3	Textbooks, articles, dissertations	3	Knowledge of research problem in theory and philosophy of social sciences (the paradigm on which the method of the research is based),	3	Avoiding plagiarism
4	Explain the research aim and write research questions for both quantitative and qualitative strands of research.	4	Determined research questions appropriate with research aim both quantitative and qualitative strands of research	4	Textbooks, articles, dissertations related to research aim and questions	4	Knowledge of how to state main and sub research questions for both quantitative and qualitative strands of research	4	N/A
5	Explain what mixed typed designs chosen.	5	Selected mixed typed design consistent with the aim of the research	5	Reference books and articles on mixed typed research methods	5	Knowledge of mixed typed research methodology	5	N/A
6	Explain sampling methods and techniques for both quantitative and qualitative strands of research.	6	Explained sampling methodology and chosen sampling size for both quantitative and qualitative strands of research	6	Reference books and articles on research random and purposive sampling methods	6	Knowledge of random and purposive sampling methods and techniques for research	6	N/A
7	Explain data collection methods and techniques for both quantitative and qualitative strands of research	7	Explained data collection method through qualitative and qualitative forms and instruments	7	Reference books on both quantitative and qualitative research methods, surveys, scales, Voice recorder, Camera, Computers, Laptop, Software	7	Knowledge of using voice recorder and video, verbatim transcript, qualitative and statistical software	7	Ensure your personal safety when travelling to and from the research site and make sure that someone you can trust knows where you will be collecting data.
8	Explain reliability and validity of the research for both quantitative and qualitative strands of research	8	Followed steps to ensure reliability and validity of the study for both quantitative and qualitative strands of research	8	Reference books on quantitative and qualitative research validity and reliability, qualitative data analysis and quantitative data analysis software	8	Knowledge of how to supply reliability and validity of the research for both quantitative and qualitative strands of research	8	Guarantee objectivity of measuring instruments, reliability and validity for both quantitative and qualitative strands of research, anonymity of the participants, obtain participants' written consent
9	Report ethical process for both quantitative and qualitative strands of research	9	Accurately reported ethical procedures (e.g. Avoided plagiarism, formal permissions, institutional Review Board (IRB) approval guaranteed anonymity of the participants, obtained participants' written consent)	9	Ethical regulations by the committee of the institutions you worked for, Plagiarism Detection Software	9	Using Plagiarism Detection Software to avoid plagiarism, preparing consent form for individual and focus group interviews	9	Keep data securely until destroyed
10	Analyze the data for both quantitative and qualitative strands of research	10	Organized data in terms of average scores in quantitative strand and categorically and chronologically, reviewed repeatedly and continually coded in qualitative strand by determining priority, timing, mixing and the level of interaction between the quantitative and qualitative strands either independently or interactively	10	Reference books on quantitative and qualitative research methods, questionnaires, scales, transcripts, qualitative software, statistical software	10	Knowledge of preparing questionnaires, scales, organizing experimental design, semi-structured preparing interview forms, observation forms and documents related to research topic, collecting and analyzing both artificial and real life documents	10	N/A
11	Discuss the findings for both quantitative and qualitative strands of research	11	Discussed findings using main topics according to how data are collected: experiments, questionnaires, scales and tests in quantitative strand and individual interviews, focus group interviews, observations and documents in qualitative strand.	11	Tests, questionnaires, scales in quantitative strand and transcripts, observation notes and documents in qualitative strand	11		11	N/A
12	Summarize and conclude	12	Outlined why this study is done and its implications	12	The results of whole manuscript	12	Analytical thinking, critical thinking	12	N/A
13	Report recommendations	13	Reported recommendations both for practitioners and researchers	13	The results of whole manuscript	13	Doing research with new ideas, taking charge of his or her ideas	13	N/A
14	Write references and add appendices	14	Ordered references systematically and consistently and kept appendices for outer reliability	14	Reference books, articles, dissertations and forms	14	Consistent and well organized references	14	N/A

APPENDIX 1 Duty/Task: SCID for a MMR-DACUM (Con't.)

WORKER BEHAVIORS (Important to Worker Success)		DECISIONS (Identify Decisions that Must be Made by the Worker)		CUES (Identify the Data Needed for Making Correct Decisions)		ERRORS (Indicate What May Result if Incorrect Decisions are Made)	
1	Expert and professional	1	What is the correct and comprehensive title for the research?	1	Research aim	1	The title does not reflect the whole manuscript and does not make a sense
2	Goal driven	2	What and how many key words should I use to reflect the entire research?	2	Search data bases of research field	2	Key words do not reflect the whole manuscript and does not make a sense
3	Hard working, patient, dedicated to finish long-term projects, self-motivated	3	Which reference books, articles, dissertations should I review? Which scientific search engines should I use?	3	Review data bases of research field related to your research aim carefully to contribute the research field	3	Literature does not support your research aim and research questions. Readers do not understand why you do this research and what contribution you do to research field
4	Detail oriented, flexible, goal driven	4	Which and how many research questions should I write for both quantitative and qualitative strands of research to reach the aim of the research?	4	Experience, review the literature related to research topic	4	The data you collected, and your findings may not answer the research questions and keep you away from the research aim
5	Flexible	5	Which mixed typed design should I choose? Why?	5	Experience and reference book suggestions of mixed typed research methods	5	The design you choose does not comply with your research aim and you may mislead readers who are studying on it
6	Proactive	6	Which random and purposive sampling methods and techniques should I choose? Why?	6	Experience and reference book suggestions of quantitative and qualitative research methods	6	The data you collected from the sampling do not support your aim and may mislead you
7	Cautious, punctual, good listener	7	How should I collect data? What materials should I use to collect data? How should I ensure my personal safety?	7	Experience, rely on both the results of objective data collection methods by focusing on measuring and the results of subjective data methods by focusing on the participants' thinking, supply triangulation	7	You lose both the objectivity of measuring instruments and your objectivity and thus the results may mislead others, and your biases may mislead you
8	Trustworthy, professional, careful	8	What should I do to support reliability and validity of for both quantitative and qualitative strands of the research?	8	Do pilot study for reliability and validity of the study for both quantitative and qualitative strands	8	Your manuscript submitted to a journal can be rejected due to poor reliability and validity
9	Ethical Reliable, safety- oriented	9	What steps should I follow to conform to the ethics committee of social science research?	9	Keep up with the steps in the ethical regulations form of the ethical committee and get ethical approval before doing your research	9	Bad reputation and you do your research in vain
10	Detail oriented, open-minded	10	Where and how should I mix the quantitative and qualitative strands while analyzing the findings? How should I code quantitative data in terms of numbers and qualitative data in terms of main themes and sub themes? Which quantitative analysis (t- test, anova, regression etc.) and qualitative analysis (thematic, descriptive, content) should I use?	10	Focus on scores as a result of experiments, scales and questionnaires in quantitative strand and participant views in transcript, participant observation notes and documents in qualitative strand Take interaction, timing, priority and mixing of qualitative and quantitative data into consideration while analyzing the findings?	10	You lose nomothetic characteristic of quantitative data or ideographic characteristic of qualitative data
11	Accurate and objective	11	Where and how should I mix the quantitative and qualitative strands while discussing the findings? Which findings should I take priority and discuss analytically?	11	Take interaction, timing, priority and mixing of qualitative and quantitative data into consideration while discussing the findings. Focus on which of your findings contribute to the research literature you are working on and what are the similarities and difference between your research and studies done so far	11	You cannot contribute to relevant research literature
12	Open minded	12	Which significant conclusion should I write?	12	Focus on significant conclusion consistent with your findings?	12	Readers who has a quick look to review literature may have no idea on your research and do not cite your research
13	Adaptable	13	Which recommendations should I put forward both for practitioners and researchers?	13	Suggest attractive and innovative recommendations consistent with your findings	13	Your published manuscript may not influence prospective researchers, and you cannot lead them and you cannot be a familiar scientist in your own field
14	Accurate and careful	14	How should I organize references (number or alphabetical order)? Which journal should I submit my manuscript?	14	Take care of author guidance of the journal you will submit for publication and its manuscript writing guidelines	14	Rejection of the manuscript by the reviewers and editors of a journal

Source: Adapted by Gunbayi (2020).

Thematic density and methodological trends in peer bullying theses in Turkey: A text mining study

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Abstract. In this study, English abstracts of 424 master's and doctoral theses on peer bullying in Turkey, which included the term peer bullying in their abstracts, were examined using Latent Dirichlet Allocation, a text mining method. In order to conduct an in-depth examination of theses written on peer bullying, English stopwords, general concepts on peer bullying, and academic research concepts were excluded from the analysis and text mining was applied. Four Topics were reached as a result of the analysis. Topic-1, which constitutes approximately 32% of the studies, consists of studies focusing on emotional problems of individuals and cyberbullying. Topic-2, which constitutes approximately 26% of the studies, is qualitative studies investigating bullying based on ethnic and cultural differences and their solutions in the classroom and on the basis of school administrators. Topic-3, which constitutes approximately 17% of the theses, is studies focusing on clinical/psychological problems and risks that cause peer bullying and occur as a result of bullying. Topic-4, which constitutes approximately 25% of the studies, is the studies focusing on the differences in demographic dimensions of peer bullying. Correlation analysis was conducted to examine the relationships between the Topics and positive relationships were reached. The results obtained show that peer bullying is a concept that should be examined not only individually but also socially.

Keywords: Peer, bullying, text mining

Introduction

Peer bullying is a recurring process in which individuals are subjected to physical or verbal violence due to the lack of power balance between individuals, especially in social environments such as schools (Nishina 2004). This phenomenon is not only related to personal characteristics, but also to interpersonal social relations, group dynamics, and the cultural norms of the society in which the person lives (Bradshaw & Johnson 2011). Bullying acts occur in the form of direct and indirect actions such as mocking and threatening, as well as physical attacks by the bully against the victim (Hong & Espelage 2012). Peer bullying behaviors, which begin to be observed especially in childhood and adolescence, can have long-term effects on the lives and psychological development of individuals (Hunter et al., 2007).

It can be seen that peer bullying is evaluated according to the Ecological System Theory, which is formed by the combination of many interactions that occur at the individual, family, school and social levels (Hong & Espelage, 2012). For this reason, in addition to examining the situation of bullying individually, it should also be examined as a systematic relationship problem between individuals (Lambe et al., 2019). According to Duffy & Nesdale (2009), the concept of bullying is a concept that is examined and explained in line with approaches such as social learning theory, social identity theory and social ecological models. In order to understand bullying, it is important to understand the dynamics of the group the individual is in and the role of the individual within the group (Salmivalli, 2010). Studies

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on bullying show that the action is not only between the victim and the bully, but also the supportive, intervening and observing roles are extremely important (Rosen et al., 2020). Therefore, the concept of bullying should be examined as a social phenomenon within society and intervention should be made at the group level for groups where bullying occurs.

Current studies on bullying focus on issues such as individuals' resistance to bullying and peer advocacy for individuals who are bullied within a group, and are expanding the field of study (Healey, 2003). In addition, research has shown that individuals' emotional levels of coping with bullying and their skills in social relationships are extremely important in protecting themselves from bullies (Postigo et al., 2013).

In recent years, studies in this area have gained great importance, especially with the increase in the number of peer bullying that occurs in schools in Türkiye. The meta-analysis review applied to studies in the field of peer bullying in Turkey suggests that individuals in high school are bullied or bullied at least twice a year (Talu & Gümüş, 2022). This situation, together with today's developing world and technology, has allowed peer bullying to be transferred to digital environments and has created a new concept of peer bullying examined under the title of "cyber bullying". Studies reveal that bullying in digital environments has become an extremely important problem. In addition, findings show that cyber bullying is more common among high school students in adolescence (Ercan & Özcebe, 2020; Topçu et al., 2013).

Studies conducted among primary school students in Turkey emphasize that the level and frequency of individuals being subjected to peer bullying vary depending on demographic characteristics. In particular, the gender of the individual, having low academic success, socio-economic level and birth order are extremely effective in individuals being subjected to peer bullying or doing bullying (Şahin & Sarı, 2010; Ayhan et al., 2019). When studies on the effect of gender on peer bullying are examined, it is revealed that girls are indirectly bullied, while bullying is more directly applied to boys (Arslan et al., 2011). In addition, peer bullying has been found to be associated with health-related factors such as obesity and low self-esteem (Ercan & Özcebe, 2020).

Bayraktar (2012) in his study, as a result of the structural equation modeling he established to determine the variables that are effective in explaining bullying behavior, revealed that administrative elements of education such as teacher attitudes and school climate and individuals' relationships with their peers are extremely important. He also revealed that there is a negative relationship between children's academic motivation levels and bullying tendencies (Ayhan et al., 2019).

It is seen that studies on preventing peer bullying in schools are not sufficient, and especially teachers and school administrations have a lack of knowledge on this issue (Rodop et al., 2022). In recent years, an increasing number of studies have shown that psychological variables such as emotional regulation skills and self-compassion are important in predicting bullying behaviors (Özen, 2023). These findings show that peer bullying in Turkey is a multidimensional problem shaped by the interaction of both individual and contextual variables, and that prevention studies should be designed by taking these dimensions into account.

The increase in the number of postgraduate theses on peer bullying in Turkey shows that the knowledge base in the field has expanded significantly. However, systematic analysis of this growing literature has become quite difficult with classical methods (Yang et al., 2023). At this point, text mining stands out as an indispensable tool for extracting meaningful information from large data sets (Ferreira-Mello et al., 2019).

Text mining provides great convenience in identifying research trends and topics by automating processes such as topic modeling, extraction of key concepts and content classification on text data in theses (Bayer et al., 2010). Especially algorithms such as Latent Dirichlet Allocation (LDA) are frequently preferred in educational research and allow the discovery of hidden topics in thesis abstracts (Benedict, 2019).

The reviews show that text mining can be successfully integrated in the field of education, especially in text source selection, determination of analysis techniques and obtaining their structures (Yang et al., 2023). In addition, the most commonly used techniques in educational text mining applications are document clustering, document classification and information extraction (Upshall, 2014). These methods allow the systematic grouping and analysis of data obtained from thesis abstracts (Spatiotis et al., 2018).

Another important point is that text mining allows not only information extraction but also the examination of thesis content (Zhang et al., 2015). In this way, it is possible to monitor dynamic changes such as which concepts or methods come to the fore in certain years. Research also shows that natural language processing (NLP) tools play an important role in the pre-processing steps of text mining processes, especially the importance of these tools for language originality and context extraction (Grobelnik et al., 2002).

As a result, the use of text mining techniques is essential for systematically addressing peer bullying-themed theses in Turkey, in terms of exploring the literature and creating new research opportunities (Kobayashi et al., 2018).

The increase in the number of theses on peer bullying in Turkey has created the need for a systematic and comprehensive review in the literature. However, traditional methods are insufficient to analyze the general trends, concepts used and methodological approaches of these theses in a holistic manner. Therefore, text mining techniques come to the fore (Yang et al., 2023).

The aim of this study is to analyze the themes, concepts and methods in theses on peer bullying prepared in Turkey using text mining and to create a general conceptual map (Salloum et al., 2018). In addition, it provides a methodological framework on how text mining techniques can be used in educational research (Lee et al., 2014). In this direction, the research questions of the study are determined as follows;

1. What are the main themes and concepts that stand out in theses on peer bullying in Turkey?
2. In which conceptual areas are the identified themes distributed and what kind of a pattern does this distribution exhibit?
3. What is the distribution of the methodological preferences (quantitative, qualitative, mixed) of the theses examined?
4. What is the distribution of the theses in terms of number over the years and are there any periods of significant increase or decrease?
5. Which academic disciplines do theses on peer bullying focus on?

The effectiveness of the text mining methods used in the study in the analysis of education and social sciences literature is also supported by previous studies (Delen & Crossland, 2008). In conclusion, this study aims to contribute to understanding the current status of peer bullying research in Turkey, determining their conceptual density, and providing systematic suggestions for future studies.

Methodology

This research was conducted using a mixed methods approach with data-transformation variant of convergent parallel design based on functionalist paradigm for quantitative phase and interpretive paradigm for qualitative phase (Gunbayi, 2020a; Gunbayi, 2020b). Mixed methods is a research design in which quantitative and qualitative data collection and analysis techniques are used together in order to examine a research problem in a more comprehensive and holistic way (Creswell & Plano Clark, 2018; Teddlie & Tashakkori, 2009).

The quantitative dimension of the research focused on analyzing thematic data obtained from thesis abstracts using the Latent Dirichlet Allocation (LDA) method and examining the relationships between

these themes using correlation analysis. In this way, the structural patterns that emerged in theses on peer bullying were described through numerical data (Mimno et al., 2011; Blei, Ng & Jordan, 2003).

The qualitative dimension of the research was carried out with the document analysis method, which includes systematic examination of the content of theses. Document analysis is a qualitative data analysis technique that aims to extract meaningful content from written materials (Bowen, 2009; O'Leary & Hunt, 2014; Rapley, 2018). In this context, the findings regarding the conceptual themes, key concepts and methodological preferences of postgraduate theses addressing the subject of peer bullying in Turkey were evaluated qualitatively.

Sampling and data collection

In order to examine the concept of peer bullying in postgraduate theses conducted in Turkey, the term "peer bullying" was written in the abstract field in the detailed search section of the YÖKTEZ website and 429 master's and doctoral theses were reached. The English titles, publication years, author names and English summaries of the theses were taken from the data set created for the text mining application. Since there were no English summaries for five theses, these studies were removed from the data set and text mining application was performed for 424 theses. The distribution and areas of the theses determined for the research by year are given in Figure 1.

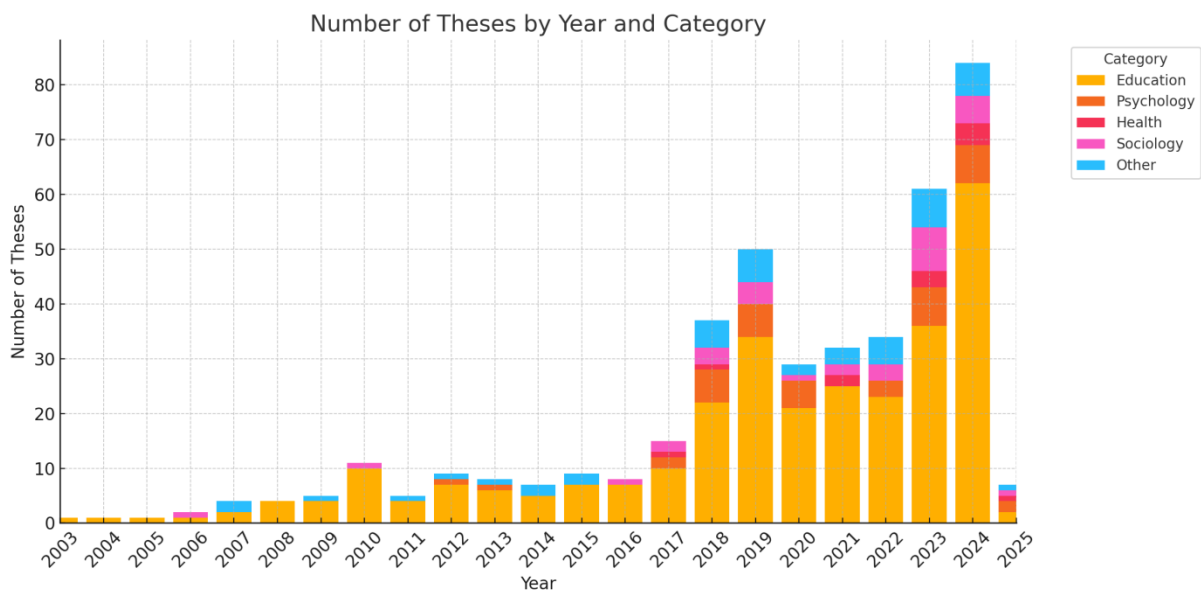


Figure 1. Distribution of peer bullying theses by year and field

When Figure 1 is examined, it is observed that the number of studies on peer bullying has increased in recent years. In addition, it was observed that approximately 70% of the studies were written in the field of education ($n=295$), 9.4% in the field of psychology ($n=40$), 2.8% in the field of health ($n=12$), 7.5% in the field of sociology ($n=32$) and 10.6% in other fields ($n=45$). It is an extremely important finding that most of the peer bullying studies were conducted in the field of education. It is thought that the decrease in peer bullying studies between 2019 and 2020-2023 is due to the COVID-19 pandemic. The frequency of peer bullying studies continued to increase with normalization after 2022.

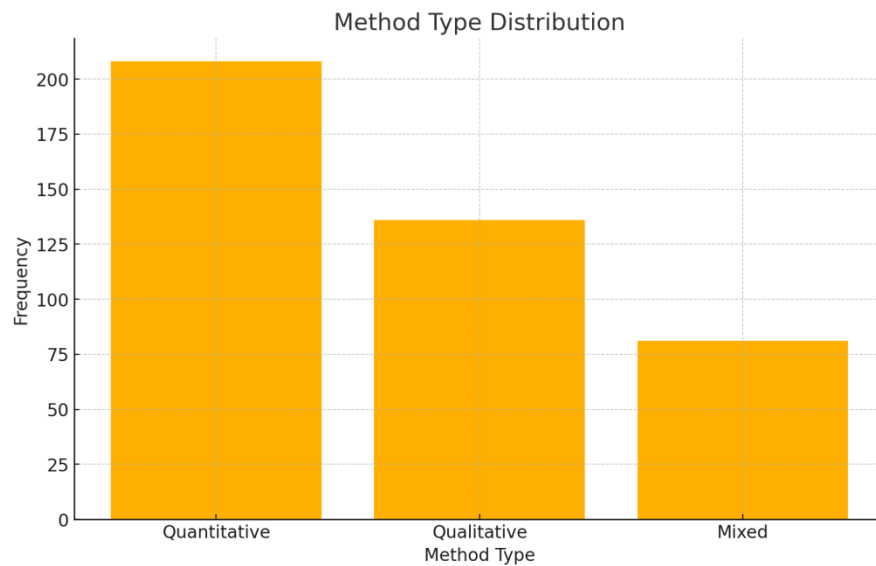


Figure 2. Distribution of peer bullying theses according to methods

When the methods of the studies on peer bullying were examined, it was observed that 49% of the studies were written using quantitative (n=208) methods, 32% were written using qualitative (n= 136) methods, and 19.1% were written using mixed (n=81) methods. The frequent use of quantitative methods in peer bullying studies stands out as an important finding.

The text mining study was implemented in the R (2023) package program. The “dplyr” (Wickham et al., 2023) package was used for operations such as selection, counting and filtering on the data, and the “stringr” (Wickham, 2023) package was used for cleaning punctuation marks in the text and editing text characters. For the LDA application, the “tm” (Feinerer & Hornik, 2025), “tidytext” (Silge & Robinson, 2016) and “topicmodels” (Grun & Hornik, 2024) packages were used to examine and visualize the data as DTM.

Before starting the text mining application, it is of vital importance to preprocess the data. For this process, first, English stop words were separated with the “tidytext” package. Then, methodological expressions such as “scale”, “data”, “method” were removed from the analysis in order to better understand the structure in the thesis abstracts. In addition, concepts such as “bullying”, “victim”, “students” related to peer bullying and concepts such as “significant”, “difference” and “found” commonly used in research were removed from the analysis. Since these words are used in all studies, they cause an indistinguishable noise in the established models. In this case, it prevents the concept of peer bullying from being examined in depth. In order to better understand this situation, the word cloud created based on word frequency before the words were removed is given in Figure 3.

Validity and reliability of the research

In this study, various precautions were taken at both methodological and analytical levels to ensure the validity of the data and the reliability of the findings. Validity refers to the collection of data appropriate to the research purpose of the study and the correct answering of the research questions by the obtained results. In this context, the fact that the data were obtained from a reliable and verifiable source such as the YÖK Thesis Center increased the internal validity of the study (Noble & Smith, 2015; Morse et al., 2002; Creswell & Creswell, 2017). In addition, the clear reporting of the methods used in the analysis process and the transparency of the analysis steps also contributed to the provision of external validity (Shenton, 2004).

Reliability refers to the consistency of research results and the possibility of obtaining similar results when repeated. In this context, the document analysis used in the examination of thesis abstracts allowed for the systematic evaluation of structured written data and ensured integrity in data analysis (Morgan, 2022; O'Leary & Hunt 2014; Lincoln & Guba, 1985). In addition, the application of numerical methods such as LDA and correlation analyses strengthened analytical reliability by testing the statistical consistency of structural relationships between themes.

Findings

The results regarding the distribution of publications in the themes created to examine the issue of peer bullying are given in figure 4.

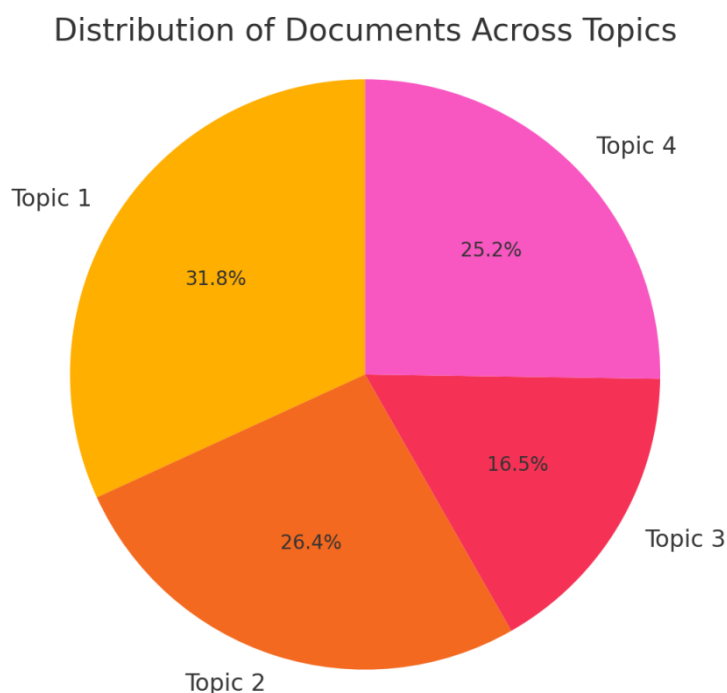


Figure 4. Distribution of theses regarding themes

When looking at figure 4 in order to examine the findings regarding the distribution of theses written on peer bullying according to topics, it was observed that 31.8% of the studies were effective in the formation of topic-1 (n=135), 26.4% in topic-2 (n=112), 16.5% in topic-3 (n=70) and 25.2% in topic-4 (n=107). Word clouds containing the 20 words that made the highest contribution to the formation of topics are given in the range of figures 5-8.



Figure 5. Word cloud regarding the most effective words in the formation of topic-1 (20 words)

When figure 5 is examined, it is seen that the words that contribute the most to the formation of topic-1 are words such as “skills”, “self”, “adolescent”, “emotional”, “cyber”, “anxiety”. In this context, the theme reveals the emotional expressions that peer bullying elicits in adolescent individuals. In this context, it shows the skills, tendencies and concerns they reveal. It also reveals the relationship between cyberbullying and the emotions that emerge.

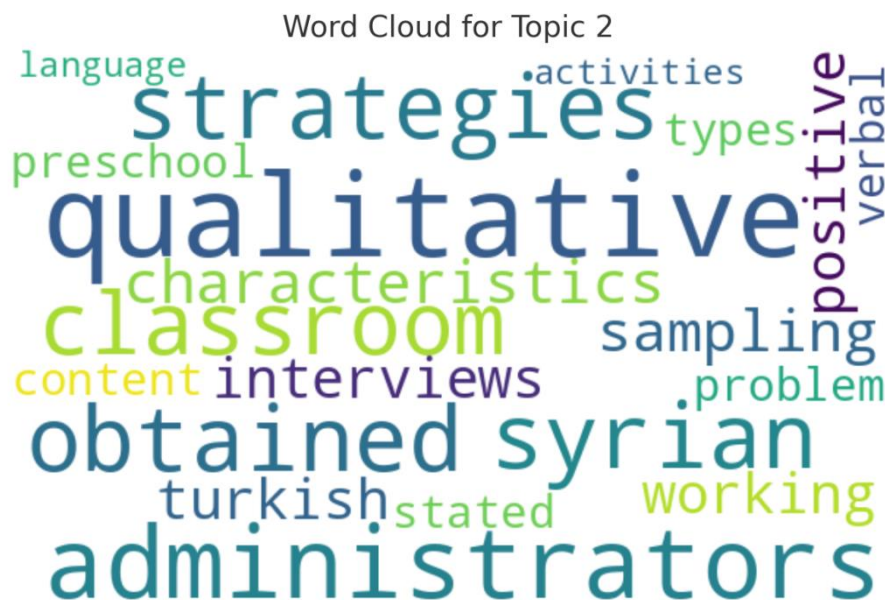


Figure 6. Word cloud regarding the most effective words in the formation of topic -2 (20 words)

When figure 6 is examined, it is seen that the words that contribute the most to the formation of topic-2 are words such as “qualitative”, “administrators”, “syrian”, “strategies” and “classroom”. When the topic that emerged in this context is examined, it shows that the studies conducted mainly address the situation of peer bullying being based on ethnic origins. In addition, it can be said that these studies consist of

qualitative studies where the classroom environment is kept in the foreground and the reactions of school administrators and the strategies they implement are examined.

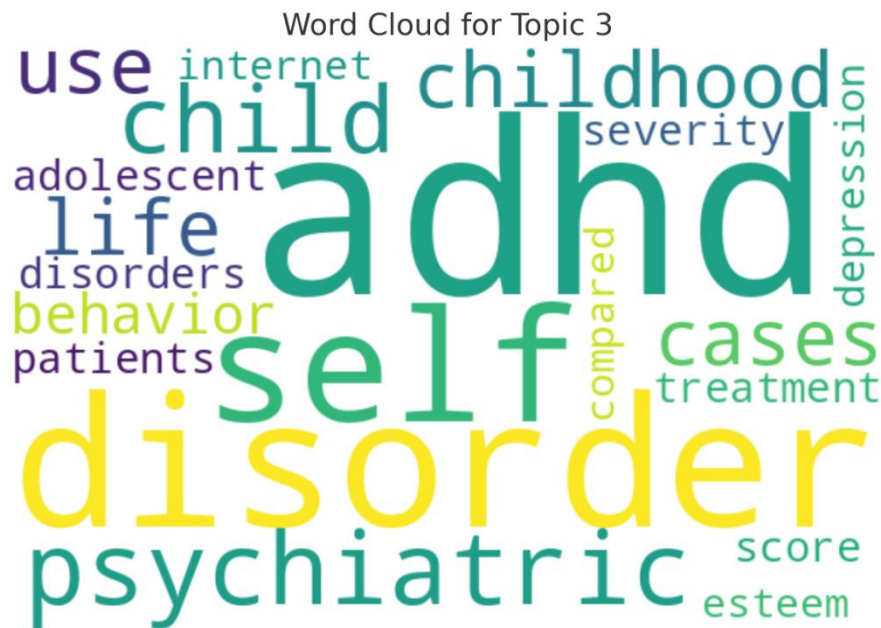


Figure 7. Word cloud regarding the most effective words in the formation of topic -3 (20 words)

When figure 7 is examined, it is seen that the words that contribute the most to the formation of topic-3 are words such as “adhd”, “disorder”, “psychiatric”, “depression” and “classroom”. In this context, it can be said that the topic that emerged focuses on psychiatric problems caused by peer bullying. In addition, in these studies, the effects of psychological problems on the individual's life and behavior were studied in a clinical-psychological context.

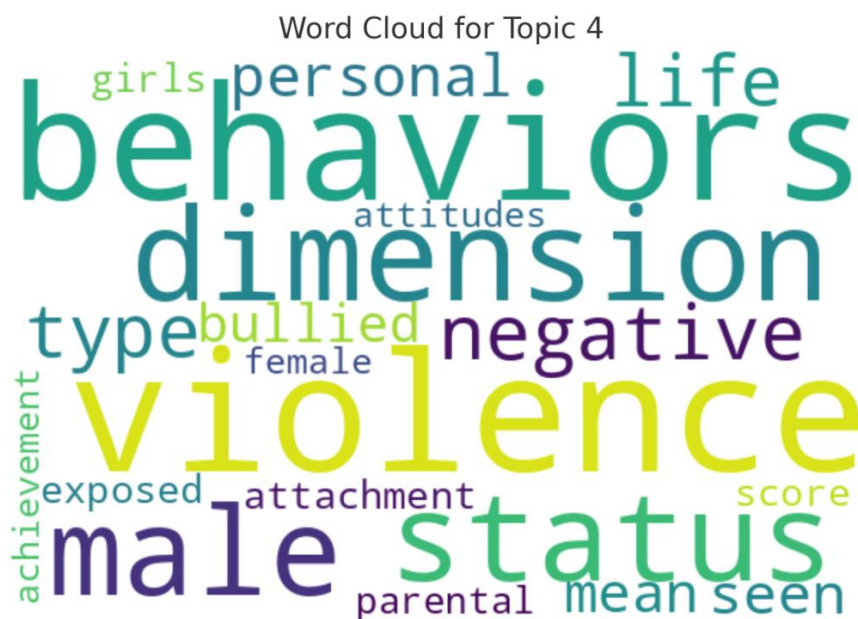


Figure 8. Word cloud regarding the most effective words in the formation of topic -4 (20 words)

When figure 8 is examined, it is seen that the words that make the highest contribution to the formation of topic-4 are words such as “behaviors”, “dimension”, “violence”, “male”, “female”, “status” and

“parental”. In this context, it can be said that the thesis studies that are effective in the formation of the topic are the studies that examine peer bullying in terms of demographic variables. The studies are studies that examine peer bullying through concepts such as gender, family structure and in-group role. The heat map of the Pearson correlation analysis results conducted to examine the relationships between the themes is given in figure 9.

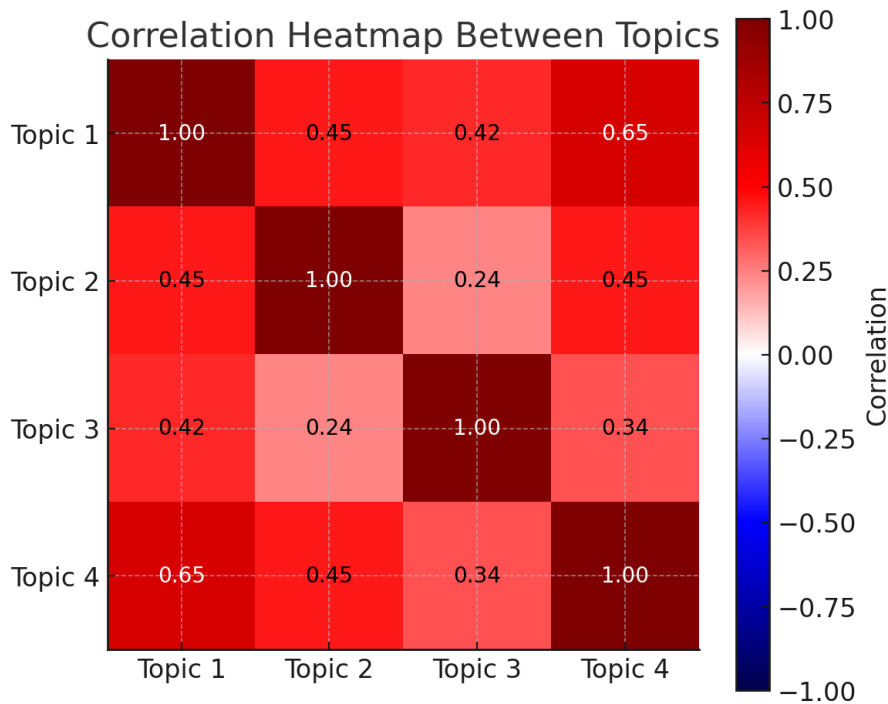


Figure 9. Heat map of relationships between topics

When figure 9 is examined, it is seen that all topics have a statistically significant and positive correlation with each other. When the correlations between the topics are examined, a moderate relationship ($r=0.45$) was found between topic-1 and topic-2, a moderate relationship ($r=0.42$) between topic-1 and topic-3 and a strong relationship ($r=0.65$) between topic-1 and topic-4. A weak relationship ($r=0.24$) was found between topic-2 and topic-3 and a moderate relationship ($r=0.45$) between topic-2 and topic-4. A weak relationship ($r=0.34$) was found between topic-3 and topic-4.

Discussion, Conclusion and Recommendations

As a result of the text mining study conducted for the purpose of the research, 424 master's and doctoral theses written in Turkey and containing the concept of peer bullying in their abstracts were examined under four topics. The topics reached as a result of LDA used for the text mining study were examined in the context of individuals' psychological states and types of peer bullying, bullying status originating from ethnic and cultural factors and its examination in the classroom and administrative sense, psychiatric clinical findings based on peer bullying and peer bullying status in the context of demographic variables.

Thesis studies on peer bullying, which are effective in the formation of the first topic, focus on the emotional problems of individuals who are subjected to peer bullying and the self-efficacy skills they have while struggling with this peer bullying. In addition, the fact that one of the prominent words in the theses is cyber bullying reveals that the way bullying is implemented is extremely important in addition to its effects and consequences. These findings are similar to studies that reveal that peer bullying will cause emotional problems such as low self-esteem, anxiety and depression in individuals (Postigo et al., 2013; Arslan et al., 2011; Hunter et al., 2007). In addition, it is emphasized in studies

that cyber bullying is especially widespread among adolescents studying in high school and that digital environments enable new forms of bullying (Topçu et al., 2013; Ercan & Özcebe, 2020).

Thesis studies on peer bullying, which were effective in the formation of the second topic, were the studies in which the classroom studies and administrative activities of the school were examined with qualitative methods in the fight against peer bullying. In addition, the words "Syrian" and "Turkish", which were effective in the emergence of this topic, also reveal that peer bullying is caused by ethnic differences. This finding is similar to the studies suggesting that problems based on cultural and ethnic differences in schools in multicultural societies can cause peer bullying (Salmivalli, 2010; Duffy & Nesdale, 2009).

It has been observed that thesis studies on peer bullying, which are effective in the formation of the third topic, examine psychiatric disorders that cause or may occur as a result of peer bullying. In this context, the concept of peer bullying has been studied in terms of psychiatric problems such as attention deficit and hyperactivity disorder (ADHD) and depression. The existence of psychological problems observed in the emergence and result of peer bullying has also been revealed in clinical studies (Hong & Espelage, 2012; Bradshaw & Johnson, 2011).

Thesis studies on peer bullying, which are effective in the formation of the fourth topic, focus on the differences and emergence of peer bullying according to demographic variables. In this context, how and in what way the act of bullying occurs according to demographic variables is extremely effective in the formation of the topic. Studies have shown that bullying is based more on direct physical interventions in male students, while it is based on indirect actions such as insults, gossip and isolation in female students. These findings are consistent with the results of studies investigating bullying based on demographic variables (Şahin & Sarı, 2010; Arslan et al., 2011).

When thesis studies on peer bullying are examined, it is observed that quantitative methods are mostly used in the studies. It is seen that the use of qualitative and mixed methods is less preferred compared to quantitative methods. This finding is parallel to the studies that reach the conclusion that quantitative research is still heavily preferred in educational research (Yıldırım & Morgül., 2013). Due to the fact that the concept of peer bullying includes many variables of individuals and the society they live in, it is emphasized in the literature that this problem should be investigated more with qualitative methods (Lambe et al., 2019).

The determination of statistically significant correlations between the topics that emerged with the use of text mining methods in the research findings reveals the interconnected and multidimensional structure of peer bullying concepts examined in the theses that constitute the topics. It was observed that the highest relationship between the topics was between topic-1, which examined the emotional problems and cyber bullying experienced due to peer bullying, and topic-4, which examined the differences of peer bullying according to demographic variables. The lowest relationship was between topic-2, which included practices carried out to solve peer bullying in schools and studies on peer bullying arising from ethnic-cultural differences, and topic-3, which included studies focusing on psychological disorders that may cause peer bullying or emerge after bullying. In this context, the concept of peer bullying is a phenomenon that should be examined not only as an individual action but also in terms of its social status and group structure within the dynamics of society (Salmivalli, 2010; Delen & Crossland, 2008).

This study has revealed general trends in peer bullying theses in Türkiye and analyzed thematic patterns. Future studies should examine the individual and contextual aspects of bullying in depth with more widespread use of qualitative methods. In addition, interdisciplinary studies focusing on issues such as cultural diversity, types of digital bullying, and teacher intervention strategies should be encouraged. Education policies, school-based prevention programs, and teacher training processes should be restructured based on the findings of this research; digital analysis methods such as text mining should be used more effectively.

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Author Contribution

Alper Tosun and Alper Sinan conceived the idea for this manuscript and contributed to the writing and editing of the review. Alper Tosun: data curation, writing, conceptualization and methodology, Alper Sinan: supervision, writing-reviewing and editing.

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Ethics Approval

In the writing process of the study titled “**Thematic density and methodological trends in peer bullying theses in Turkey: A text mining study**”, the rules of scientific, ethical and citation were followed; it was undertaken by the author of this study that no falsification was made on the collected data. “Journal of Action Qualitative & Mixed Methods Research and Editor” had no responsibility for all ethical violations to be encountered, and all responsibility belongs to the author and that the study was not submitted for evaluation to any other academic publishing environment.

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Anonymized data from this study can be made available on request from alpertosun.003@gmail.com

Playing to start: EGIDEV and the power of simulation in entrepreneurial education

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Abstract. This article autoethnographically explores the development and implementation of EGIDEV- the Educational Game in Digital Entrepreneurship for VET Students - through the eyes of one of its partners. EGIDEV is not merely a game; it is a journey that empowers learners to test ideas, confront real-life business dilemmas, and build a foundation for entrepreneurial action. Grounded in experiential learning, the project encourages aspiring entrepreneurs to validate and verify their ideas before entering the marketplace. This reflection situates EGIDEV within the wider European context of the entrepreneurial intention-action gap and argues for a more immersive, skill-based approach to entrepreneurship education.

Keywords: Entrepreneurship, experiential learning, educational games, VET, validation, startup mindset, EU trends, intention-action gap

Why EGIDEV?

Entrepreneurship in Europe faces a paradox. On one hand, there is no shortage of interest in launching new ventures. According to the Global Entrepreneurship Monitor (GEM, 2023), 19% of individuals in Europe express an intention to start a business within the next three years. Yet the actual rate of early-stage entrepreneurial activity (TEA) lags far behind, at just 9.2%.

This discrepancy — the intention-action gap — is especially evident among young people and students. Although 50% of European students report interest in becoming entrepreneurs (European Commission, 2020), only 6% follow through after graduation. Even more tellingly, Eurostat data shows that while 33% of youth aged 18–34 are drawn to entrepreneurship, only 10–15% ever take concrete steps like registering a business (Eurostat, 2023).

What causes this gap? Key barriers include:

- Fear of failure, affecting one in three young entrepreneurs.
- Limited access to funding and mentorship.
- Lack of practical business skills, especially among STEM graduates.
- Cultural risk aversion and bureaucratic complexity (GUESS, 2023)

As a response, EGIDEV was created not just to inspire, but to equip. Its purpose is to simulate the entrepreneurial journey from idea to execution — and help learners bridge the critical gap between intention and action.

In a nutshell, the goal of the game is to choose an industry and a set of problems for that industry. Ten industries are listed, which are among the EU's top 10 digital startup domains, then develop an entrepreneurial initiative based on the solutions to these problems and prepare an investment proposal to

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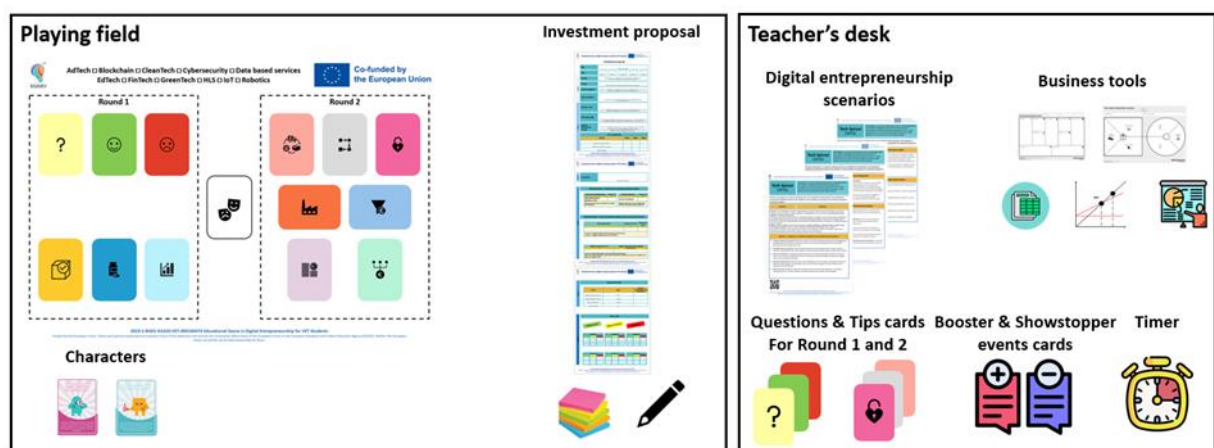
Tech Sprout Capital. In the game, Tech Sprout is a venture company that invests in cutting edge digital technologies. Tech Sprout has identified promising areas of development and defined Data Base of problems to solve. Young entrepreneurs can choose area and problems and apply to Tech Sprout to fund a startup which solves these problems (EGIDEV, 2025).

EGIDEV's design and pedagogical strategy align closely with established experiential and constructivist learning theories, particularly Kolb's Experiential Learning Cycle (1984), which emphasizes learning as a process whereby knowledge is created through the transformation of experience. The four stages of the EGIDEV simulation — THINK!, IMPLEMENT, MONEY TALKS, and NOW OR NEVER — mirror Kolb's model: concrete experience, reflective observation, abstract conceptualization, and active experimentation. For instance, students begin with role definition and idea exploration (concrete experience), reflect on market needs and validation (reflective observation), design business models and forecasts (abstract conceptualization), and finally pitch their ideas (active experimentation). This cyclical and iterative model fosters deep learning by engaging students in a process of doing, reflecting, and adapting.

Moreover, EGIDEV is underpinned by principles of constructivist learning, where knowledge is actively constructed rather than passively absorbed. Vygotsky's (1978) theory of social constructivism is especially relevant, as EGIDEV encourages collaborative, team-based learning in which students co-construct meaning through dialogue, feedback, and shared problem-solving. The game environment facilitates what Vygotsky termed the "Zone of Proximal Development" by offering scaffolding through booster cards, facilitator guidance, and peer feedback, enabling students to achieve higher levels of entrepreneurial thinking than they might individually.

By grounding the simulation in these frameworks, EGIDEV not only delivers content knowledge but also fosters metacognitive skills, resilience, and adaptive expertise essential for real-world entrepreneurship.

From Idea to Action: The four rounds of EGIDEV



2023-1-BG01-KA220-VET-000160474 Educational Game in Digital Entrepreneurship for VET Students

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EGIDEV transforms entrepreneurship education into an immersive, team-based simulation structured around four progressive stages:

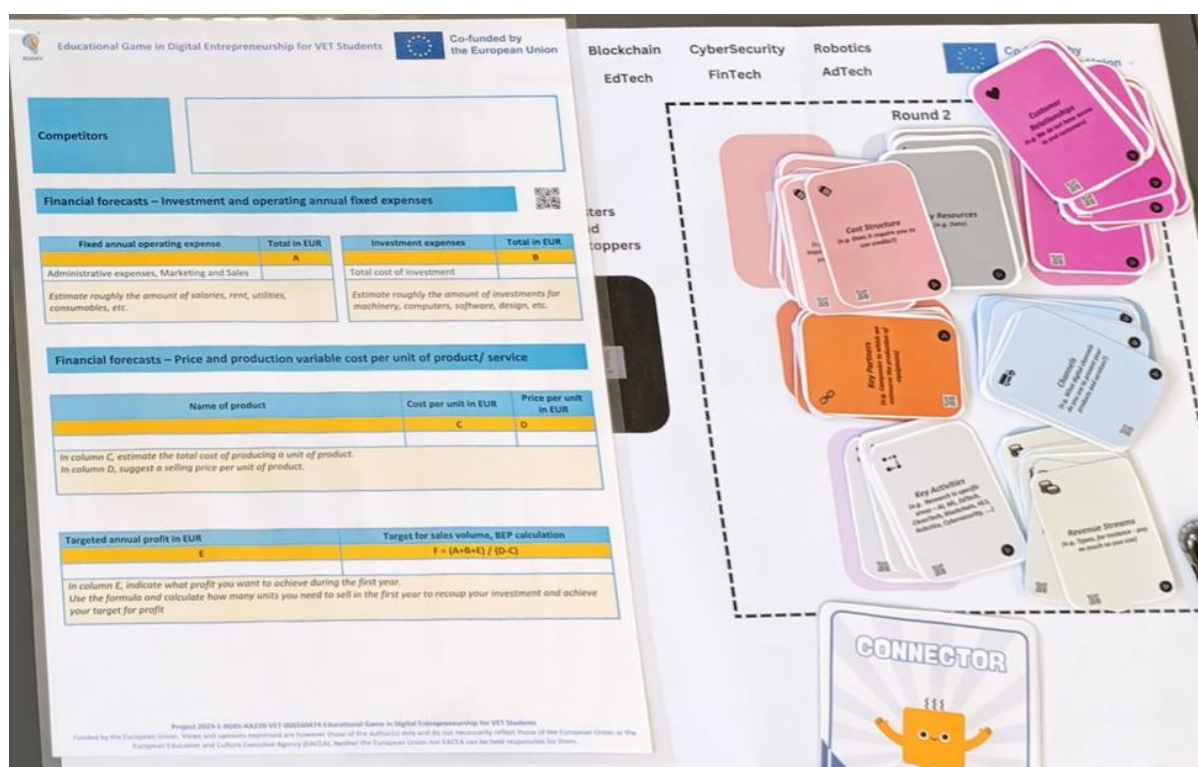
Round 1 THINK!

Form a team and decide who you are within that team, i.e. pick a role. Then the teams define their venture's concept by selecting and developing an idea from the suggested scenarios in digital entrepreneurship or by proposing a business idea of their own.



Round 2 IMPLEMENT

Participants build a full business model and explore revenue strategies, competitors, and go-to-market plans — all while dealing with real-life surprises through "booster" and "show stopper" event cards. The business model should describe how your venture will create and deliver value to customer segments, society, and your company.



Round 3 MONEY TALKS

Financial forecasting becomes the centerpiece, as students confront cost structures, break-even points, and investment requirements.

Round 3

Financial forecasts – Investment and operating annual fixed expenses

Fixed annual operating expense	Total in EUR	Investment expenses	Total in EUR
	A		B
Administrative expenses, Marketing and Sales		Total cost of investment	
Estimate roughly the amount of salaries, rent, utilities, consumables, etc.		Estimate roughly the amount of investments for machinery, computers, software, design, etc.	

Financial forecasts – Price and production variable cost per unit of product/ service

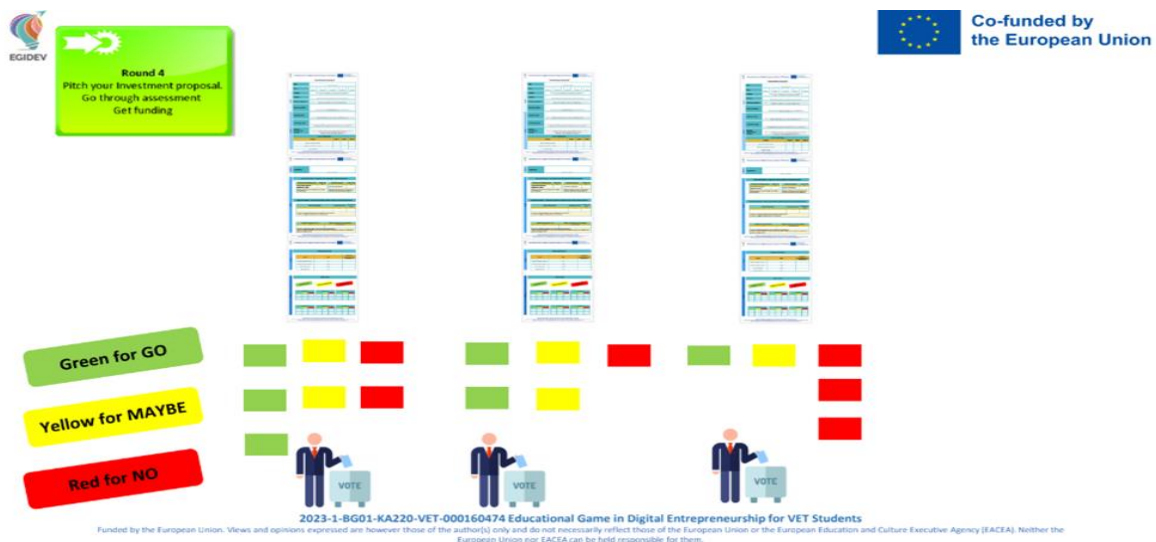
Name of the product	Cost per unit in EUR	Price per unit in EUR
	C	D
In column C, estimate the total cost of producing a unit of product. In column D, suggest a selling price per unit of product.		

Targeted annual profit in EUR	Target for sales volume, BEP calculation
E	F = (A+B+E) / (D-C)
In column E, indicate what profit you want to achieve during the first year. Use the formula and calculate how many units you need to sell in the first year to recoup your investment and achieve your target for profit	

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Round 4 NOW OR NEVER

Teams pitch their projects to their peers acting as Tech Sprout Capital investors, receiving feedback and ratings through a simple red-yellow-green assessment system.



The entire process mirrors real-world startup life — iterative, unpredictable, and highly collaborative. Unlike traditional business planning exercises, EGIDEV forces learners to think critically, act fast, and adapt.

Learning Through Failure: My Startup, Your Case Study

My connection to the EGIDEV project isn't just professional — it's deeply personal.

Years before participating in this project, my husband and I had founded a startup in Bulgaria. Inspired by what worked in his native Ireland, also in the US, and the UK, we believed that if we imported this healthy lifestyle trend and the related to it food products into our market, success will replicate itself.

We were wrong.

We failed to check whether local consumers truly wanted what we offered. We assumed immediate interest, ignored cultural preferences, and failed to check customer need and desire. While our products were high-quality, introducing the trendy healthy lifestyle, they felt foreign and detached from everyday eating habits in our region. We did the mistake so many people do- we liked our idea, those close to us liked our idea, we created that optimistic bubble and got too emotionally attached. In hindsight, we skipped the "Round 1" of the EGIDEV game: validating the problem, profiling customers, understanding needs, behaviors. We assumed people would adapt to our product — when, in fact, we needed to adapt to them. Just assuming is not enough. Just assuming is painful and expensive.

This is the very trap EGIDEV helps to prevent. It encourages learners to ask: "Is this idea truly viable?" "Do you solve anyone's problem?", "Do you fulfill someone's need?", "Do you provide much needed solution?" Not in theory — but in a tangible, context-aware way.

Empowering Action: Closing the Education and Confidence Gap

Another driver behind EGIDEV's design is the educational readiness gap across Europe. Only 23% of surveyed graduates feel prepared for entrepreneurship, and many innovators struggle to monetize their knowledge due to weak business strategy skills (OECD, 2021). EGIDEV helps fill this space by:

- Translating intangible talents into marketable propositions;
- Allowing students to fail safely, reflect, and iterate;
- Making the entrepreneurial process accessible, interactive, and fun.

Additionally, research shows that only 12% of EU students plan to launch a business immediately after graduation (compared to a global average of 17.8%). Through EGIDEV, participants can rehearse entrepreneurship before high stakes are involved. This reduces fear of failure, increases self-confidence, and reveals entrepreneurial potential they might never have discovered otherwise.

A Game That Teaches Reality

I witnessed firsthand how EGIDEV changed learners. Participants began to see themselves as capable entrepreneurs, not just students. The polls after the game sessions have shown that over 80% of the participants showed confidence that they could be entrepreneurs. They shifted from passive listeners to active creators. We have students, people who's played the game reaching out with feedback how the game helped them, also with additional questions about the tools they can use. This is one of the additional perks of the EGIDEV project- on the website you can find business tools to support your business venture all the way through.

Educators, too, transformed. No longer lecturers, they became facilitators — setting the stage, triggering disruptions, and guiding teams through decision-making.

Our transnational team of partners brought different strengths: game design, pedagogy, technology, evaluation. Together, we co-created a tool that lives beyond the classroom.

EGIDEV isn't about winning. It's about rehearsing. It bridges the space between "I have an idea" and "I'm making it happen", in other words- bridges the intention- action gap.

Games as Bridges to Action

If entrepreneurship is a mindset, then EGIDEV is a mindset trainer. It gives learners tools and structure to move from vague aspirations to clear decisions.

It also gives educators a method to bridge the intention-action gap in Europe — four rounds, one pitch, one simulation at a time.

Most importantly, it validates the learner, not just the idea. It says: "Here's how you can test your voice, your plan, your resilience — and still enjoy the process." And sometimes, the best way to start something serious...is to play.

Conclusion

EGIDEV represents a transformative step in bridging the entrepreneurial intention-action gap among European youth, particularly vocational education and training (VET) students. Through its immersive, experiential learning design, the simulation game offers a dynamic framework for students to test, validate, and refine entrepreneurial ideas in a low-risk environment. The four-stage structure—from ideation to pitching—mirrors real-world entrepreneurial processes, allowing learners to develop key competencies such as critical thinking, financial literacy, and resilience.

The project's strength lies in its dual emphasis on experiential realism and pedagogical innovation. By combining gamified learning with structured business modeling, EGIDEV not only demystifies the entrepreneurial process but also nurtures the confidence and strategic thinking necessary to act on business intentions. Moreover, the inclusion of practical tools and transnational collaboration enhances its accessibility and applicability across diverse European contexts.

Autoethnographic reflection reinforces the importance of validating ideas early and underscores the value of failure as a learning tool. In this light, EGIDEV stands not merely as an educational intervention but as a mindset catalyst—an opportunity for learners to envision themselves as proactive agents of change.

Recommendations

Based on the autoethnographic reflection on the development and implementation of EGIDEV through my eyes, following recommendations can be put forward:

1. Expand EGIDEV Integration Across Curricula

To maximize impact, EGIDEV should be systematically integrated into entrepreneurship and business modules within VET institutions and higher education curricula. Facilitators should be trained to guide reflection and ensure learning outcomes align with national and EU-level entrepreneurial education objectives.

2. Support Post-Game Engagement

Establish follow-up mechanisms such as mentorship programs, idea incubation support, or access to startup toolkits. These additions can help students transition from simulated success to real-world implementation.

3. Facilitate Multilingual and Inclusive Access

To ensure broader adoption, EGIDEV should continue to expand its linguistic and cultural adaptability. Tailoring the platform to reflect local startup ecosystems and regional entrepreneurial challenges will further enhance learner engagement and relevance.

4. Conduct Longitudinal Impact Studies

Future research should investigate the long-term outcomes of EGIDEV participation on students' entrepreneurial trajectories. Tracking participants over time could provide valuable data on how experiential learning influences actual business creation and self-employment rates.

5. Foster Transnational Collaboration and Dissemination

Sharing best practices and student outcomes across participating countries can strengthen EGIDEV's credibility and scalability. Establishing a pan-European network of educators and alumni may sustain momentum and foster continuous improvement of the tool.

EGIDEV proves that simulation can be a powerful pedagogical device to move learners from passive aspiration to confident action. If entrepreneurship begins with mindset, then EGIDEV equips the next generation with the right one — playfully, purposefully, and powerfully.

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Author Contribution

Corresponding author Galina Nolan: Conceptualization, data curation, investigation, methodology, writing original draft, review & editing.

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Data Availability Statement

Anonymized data from this study can be made available on request from galinanolan@gmail.com

Insights into college students' perceptions of cooperative learning in college classrooms: A mixed methods approach

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Abstract. This mixed-methods study aimed to investigate college students' perceptions of cooperative learning (CL) and its relationship with their academic success and social development. The study employed a convergent mixed-method design. One hundred twenty-two (122) college students were sampled for the quantitative phase of the study, while seven participated in the qualitative section. The qualitative analysis revealed that students benefit immensely from cooperative learning (CL), as it improves their academic success, fosters friendships, enhances critical thinking skills, and promotes positive interdependence. Additionally, students develop the social skills necessary for their future careers. Both the qualitative and quantitative analyses revealed that the role of instructors is crucial in affecting students' attitudes toward CL. Students develop positive attitudes toward CL if instructors effectively discharge their roles to maximize learning. Failure on the part of instructors to discharge their expected roles leads students to develop negative attitudes toward CL.

Keywords: Cooperative learning, collaborative learning, interdependence, instructors, constructivist

Introduction

There has been a dramatic change in student composition in colleges and universities over the past 40 years (Naz & Murad, 2017). This results from students with different ethnic, racial, cultural, socioeconomic backgrounds, physical abilities, sexual orientations, ages, religious beliefs, political beliefs, and learning styles (Naz & Murad, 2017). This kind of diversity in classrooms calls for new discussion and pedagogy if all students are to achieve their goals in education. The primary question is, what pedagogy type (s) will be appropriate for instructors to help everyone learn effectively and efficiently in this modern age of technology and artificial intelligence? Also, recent research in teaching and learning supports constructivist philosophy and is very popular among educators worldwide (Rudhumbu, 2024; Nanor, Hanson, & Mahama, 2024). This perspective was advocated by Piaget (1896-1980), Dewey (1938/1964), and Vygotsky (1896-1934), representing a paradigm shift from teacher-centred instruction associated with behaviourism to a learner-centred approach that relates to cognitive theory (Gudinge, 2018). Constructivists believe learners construct their knowledge and understanding by interacting with their environment. Vygotsky (1978), the Russian psychologist's social constructivism perspective (socio-cultural theory), states that learning takes place in a context where the construction of understanding results from interacting with others in the social environments in which knowledge is to be applied (Gudinge, 2018; Nanor et al., 2024; Rudhumbu, 2024). The constructivist paradigm empowers the learner in the teaching and learning process. The role of the teacher is to engage learners to discover knowledge and allow them to reflect upon what is learnt. Again, the world has become a global village where goods and services are moved. Individuals can take up any job appointment anywhere at any time. In the workplace, businesses stress performance because jobs and tasks have been integrated. Collaboration, teamwork, and interpersonal communication skills are

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emphasized (Rudhumbu, 2024; Slavin, 1996). Cooperative learning is considered an instructional strategy to help students develop the necessary social skills to succeed in the world of work.

Historically, collaborative learning was used in elementary and high schools, thus compelling researchers to research it so much. Still, in the 1980s, it surfaced as a significantly higher education pedagogy (Cabrera et al., 2002). As such, collaborative learning (group projects) in undergraduate and graduate courses has recently gained popularity. For thirty years, research has dramatically increased about using cooperative learning at the university level (Rodger, Murray & Cummings, 2007; Nhan & Nhan, 2019; Ogalloh, Wamocho & Otube, 2018). It is regarded as one of the most extensively researched instructional strategies (Molla & Muche, 2018; Onwuebudzie & DaRos-Voseles, 2001).

Cooperative learning as an instructional strategy has its roots in the social interdependence theories of Morton Deutsch and Kurt Lewin (Onwuebudzie & DaRos, 2001). These theories and other studies have stated that social interdependence positively influences individual interaction in each situation, “which subsequently affects the outcomes of that interaction” (Onwuebudzie & DaRos, 2001, p.61). Positive goal interdependence occurs when learning is cooperative, and students see their success to be enhanced by the success of other students (Onwuebudzie & DaRos, 2001). On the other hand, negative interdependence is created in a competitive environment, and students tend to compete with one another and view their chances of success to be diminished by the success of their colleagues. In contrast, neutral interdependence occurs in an environment where students learn individually so that one student’s success is independent of the other (Onwuebudzie & DaRos, 2001).

Many theories and methods, including constructivism (social learning theory) by John Dewey (1938), sociocultural theory by Vygotsky (1978), cognitive development theory by Jean Piaget (1936), Kohn’s (1996) student-directed learning theory (SDLT), the humanistic approach, and theories on second language acquisition, have shaped and anchored the theoretical basis of the CL notion (Alhebaishi, 2019; Nannor et al., 2024; Rudhumbu, 2022/2024). CL emphasizes the core principles of the humanistic approach, including the importance of student autonomy and a supportive learning environment in the educational process. When students collaborate, they help each other, pay attention to one another, accept differences, and work together to solve problems (Alhebaishi, 2019; Nanor et al., 2024). This approach reduces anxiety and tension, thereby enhancing motivation. According to the sociocultural paradigm, learning occurs through interpersonal interactions and is seen as a social process rather than an individual one (Alhebaishi, 2019; Nanor et al., 2024). Dewey (1938) noted that individuals often learn new things and create meaning by engaging with peers in a safe environment and through personal experiences. Similarly, Piaget (1964) argued that social experiences, knowledge, language, norms, morality, and values are all gained through social contact (Alhebaishi, 2019; Nanor et al., 2024). Additionally, Vygotsky (1978), in his sociocultural and constructivist perspectives on learning, asserted that in a CL setting, students can share ideas and information to achieve common goals (Alhebaishi, 2019; Gudinge, 2018; Rudhumbu, 2024). He further stated that social interaction fosters a positive learning environment, thereby elevating the overall achievement of the group (Alhebaishi, 2019; Gudinge, 2018). Learners can negotiate meaning in a CL context by listening to one another, asking questions, sharing ideas, discussing problems, elaborating on concepts, and defending their positions. This environment facilitates a high level of comprehensible input and optimizes student conversation, which helps in learning (Alhebaishi, 2019). According to the theory, when learners interact socially, meaningful information is constructed. This theory is relevant to the study because it supports the basic idea that teachers, students, and facilitators need to acknowledge and value different points of view in the classroom without limiting social interaction. This fosters an environment where students can actively participate in constructing their knowledge, which leads to successful learning outcomes (Nanor et al., 2024). Also, Kohn’s (1996) SDLT theory influences the current study when the five dimensions of CL are deployed successfully in colleges and universities (Rudhumbu, 2024). According to Kohn (1996), student-directed learning encourages students to learn and educates them to delegate duties and responsibilities to one another (Rudhumbu, 2024). To engage students in CL behaviour and foster a deeper comprehension of what they will be studying, the SDLT capitalizes on their curiosity and innate drive for competence (Lynch, 2018; Rudhumbu, 2024). According to Kohn’s (1996) SDLT, lecturers

should employ a range of structured learning activities to ensure that students are completely engaged during CL. Students should be allowed to actively confront and question one another in their groups, share and discuss their ideas, and adopt their preferred group learning techniques through these learning activities (Rudhumbu, 2024). According to this theory, lecturers must design group learning exercises that are creative, open-ended, intellectually demanding, and require higher-order thinking skills to inspire students to learn (Kohn, 2021; Rudhumbu, 2024).

According to the Cooperative Learning Center at the University of Minnesota, cooperative learning involves relationships among students. Five elements must be satisfied: positive interdependence, individual accountability, interpersonal skills, face-to-face interaction, and processing out (Jones & Jones, 2008; Nanor et al., 2024). These elements have emerged as the essential pillars of cooperative learning outlined by Johnson and Johnson (1999) as an instructional strategy (Ait Hattani, 2024; Jones & Jones, 2008; Nanor et al., 2024; Rodger et al., 2007; Onwuebudzie & DaRos-Voseles, 2001; Ogalloh et al., 2018). First, face-to-face interaction pertains to situations where students actively engage with one another to contribute to group performance. Second, individual accountability requires participants to take responsibility for their portion of the work, ensuring that no single person or a few individuals are left to handle all tasks. Third, interpersonal skills are crucial for effective cooperative learning. Fourth, group processing encourages members to assess their goal achievement. It is more effective when instructors establish clear objectives, allow sufficient time for group work, and provide explicit expectations regarding group performance (Nanor et al., 2024; Rudhumbu, 2024). Fifth, positive interdependence arises when students cooperate, support, and help one another in the group to achieve success (Jones & Jones, 2008; Rudhumbu, 2024). In positive interdependence, students learn from the ideas and contributions of their group members such that “group members sink or swim together” (Jones & Jones, 2008, p. 66). This interdependence is fostered by establishing mutual learning goals, enabling students to learn the assigned material and ensuring that their peers do the same. In this study, the researcher examined college students’ perceptions of CL and its relationship with their academic success and social development. Additionally, it investigated how instructors influence students’ attitudes toward cooperative learning.

Campbell and Li (2006) examined Asian students’ perceptions of collaborative learning concepts in the form of group work and group assignments. Twenty-two Asian students participated in one-hour individual semi-structured interviews. The study revealed that Asian students had high value for “classroom group discussions where they could interact with students from other cultures and backgrounds, improve their English language skills, enhance their cultural understandings and provide them with opportunities to make friends” (Campbell and Li, 2006, p.78). However, they expressed negative views about group assignments where marks were shared to determine the performance of the group. Factors that affected group dynamics included members’ attitudes and willingness to cooperate and contribute as a team, the composition of the group, students’ competing demands on students’ time and attention, heterogeneity from the natural abilities of students, and the varying cultural values and beliefs held by group members (Campbell & Li, 2006, p.78). Most Asian students were frustrated with having to complete such compulsory group assignments.

A meta-analysis conducted by Johnson et al. (1998) using students who were 18 years and older found that the use of CL in the classroom enhanced “greater liking among students than does competing with others (effect size = 0.68) or working on one's own (effect size = 0.55)” (p.33). They contended that this was even pronounced among students from different ethnic, cultural, language, social class, ability, and gender groups. The result revealed that college students who engaged in cooperative learning perceived greater social support about academic and personal from both peers and instructors than students who worked competitively (effect size = 0.60) or individually (effect size = 0.51) (Johnson et al., 1998).

Jebson (2012) studied the impact of the cooperative learning approach on selected senior secondary schools in Adamawa State in Nigeria, with 120 students aged between 16-19 offering mathematics at senior secondary school two (SS 2). The study employed a quasi-experimental design where samples were grouped into A and B-experimental and control groups. The result indicated that the experimental

group (cooperative group) performed better than the control group. The implication is that the “cooperative learning approach has a significant effect on students’ performance in secondary school mathematics” (Jebson, 2012, p.107). The study also revealed “that sex difference or gender has no significant influence on the performance of students in mathematics when taught using or not using cooperative learning approach ($p < 0.05$)” (p.107).

Moore (2010) conducted a mixed-method study to examine students’ perceptions relating to the use of cooperative exams in an introductory leadership class at Texas A&M University during the Fall 2009 semester. Participants were all students who enrolled in ALED 201 –Introduction to Leadership. Seventy participants were selected for the study. The study employed a concurrent design. The following results were outlined: (1) Many students ($n=63$, 98.4%) stated that there were advantages to the use of cooperative exams, while more than half ($n=38$, 59.4%) indicated that there were disadvantages to the use of cooperative exams; (2) Four broad themes were revealed through the qualitative analysis concerning the advantages of using cooperative exams, “the opportunity for discussion to increase understanding, the opportunity to increase the overall grade on the exam, the opportunity for collaboration and teamwork, and increased individual accountability” Moore, 2010, p.78). In a concurrent mixed method approach, Kupczynski et al. (2012) compared the effectiveness of online CL strategies in discussion forums with traditional online forums conducted at a Hispanic-serving institution with 56 participants, 35 females and 21 males. The quantitative results revealed no significant differences in students’ success between CL and traditional formats. It was observed from the qualitative data that “students in the CL groups found more learning benefits than the traditional group” (Kupczynski et al., 2012, p.81).

Problem Statement

CL has been researched extensively. While studies on the benefits, implementation, and problems of cooperative learning (CL) have been conducted, limited studies have been conducted on college students’ perceptions of CL and how it helps them achieve their learning outcomes. Also, instructors’ roles in students’ group learning or projects (CL) greatly influence students’ attitudes. However, there are limited studies in this area. Chapman and Aiken (2001) alluded to this: “While a litany of research has described group projects’ implementation, benefits, and drawbacks, no empirical research has yet addressed the instructor’s role and its ancillaries in influencing students’ attitudes toward group work” (p.117). Therefore, more studies must be conducted to ascertain the positive and negative effects on students’ learning. Again, there is limited research employing a mixed methods approach to study college students’ perceptions of cooperative learning. The few mixed methods research studies that have been conducted have failed to mix data from both qualitative and quantitative sources. Burrows (2013) argued:

Without mixing, the study becomes a multi-method study with qualitative and quantitative data analyzed to tell two distinct stories. By not including mixing, the primary concepts of a combined methodology and one that builds upon its parts to enhance its strength are lost (p. 38).

The study aims to explore college students’ perceptions of CL as an instructional strategy, its effectiveness on their learning outcomes and social development, and the instructors’ role in developing college students’ attitudes towards CL.

The following research questions guided the study:

- (1) How effective do college or university students find cooperative learning regarding their learning outcomes?
- (2) What skills and attitudes do college/university students learn when they engage in cooperative learning?
- (3) How do college/university students perceive the instructors’ role in cooperative learning?

- (4) How do college students' perceptions regarding the role of instructors in cooperative learning impact their attitudes toward cooperative learning?

Methodology

Method and paradigm of research

This mixed-methods study with a convergent mixed design focused on data transformation. Mixed methods study integrates qualitative and quantitative approaches to provide a broader understanding within a single study (Creswell & Plano-Clark, 2017; Creswell & Plano-Clark, 2010; Şimşek & Buldukoğlu, 2024; Stupnisky et al., 2014). Using qualitative and quantitative methodologies in collecting and analyzing data helps compensate for each methodology's weaknesses rather than one method alone (Cohen, Manion & Morrison, 2018; Creswell & Plano-Clark, 2010). The convergent mixed design approach is a research method that collects data simultaneously, analyzes it individually, and compares the results from qualitative and quantitative databases. The qualitative component is in the discourse analysis pattern and is shaped by the interpretive paradigm, and the quantitative component is also in a descriptive survey design and is shaped (Gunbayi, 2020; Şimşek & Buldukoğlu, 2024) by the pragmatism paradigm.

Sampling

Seven students were sampled for one-on-one semi-structured interviews through a purposeful sampling approach in the quality phase of the study. The demographic characteristics of the participants were four males and three females, while in the quantitative phase of the study, a sample of one hundred twenty-two (N= 122) students participated based on a simple random sampling.

Data collection

The study was conducted in one large Midwestern university in the United States of America. In the qualitative phase of the study, seven students were sampled for interviews; each interview lasted approximately one hour, and all were recorded for transcription. The demographic characteristics of the participants were four males and three females. In the quantitative phase of the study, a paper and pencil survey was administered to a sample of one hundred twenty-two (N= 122) students to examine their perceptions of CL quantitatively. The survey took about 20 minutes to complete. The study adopted a survey instrument from Chapman and Auken (2001) for the quantitative phase. The instrument has been validated. Scale reliability was conducted to ensure the reliability of the instrument. Internal reliability was sufficient for all the scales ($\alpha = .83$ to $.91$). The paper and pencil survey contained demographic variables to describe the sample. The survey contained 32 items created on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) to measure the perceived benefits of cooperative learning, attitude toward cooperative learning, work and grade equity concerns, and perceived social skills learned in CL. The instructor's role in CL was measured with a five-point Likert scale (1 = never, 2 = not very often, 3 = sometimes, 4 = quite often, 5 = always) (See Table 2). Perceived benefits of cooperative learning were assessed with nine items, and participants responded to statements such as: "Cooperative learning enhances my communication skills" and "Cooperative learning prepares me to work in a company" on a 5-point scale (1 = strongly disagree, 5 = strongly agree). The internal reliability was found to be sufficient ($\alpha = 0.91$). Six items measured participants' attitudes toward cooperative learning with statements such as, "My attitude towards cooperative learning is positive" and "Working cooperatively with other students is desirable to me" on a 5-point scale (1 = strongly disagree, 5 = strongly agree). The internal reliability was found to be sufficient ($\alpha = 0.88$). Participants were asked to report on their experiences of how they felt working in CL groups. This was assessed with five items, and participants responded to statements such as, "I do the work of others in cooperative learning" and "I worry about my grade in cooperative learning" on a 5-point scale. The internal reliability was sufficient ($\alpha = 0.83$). Perceived social skills learned in cooperative learning were assessed on a 5-point

Likert-type scale anchored by 1 = strongly disagree to 5 = strongly agree, which was used to measure participants' perceptions of the social skills they learn when they engaged in cooperative learning. Eight items were used, and participants responded to items such as, "I learn to respect the opinion of others in cooperative learning groups," and "Working cooperatively advances my interpersonal relationships with other students. Internal reliability was sufficient ($\alpha = 0.87$). The rate with which instructors discussed group management and evaluation methods with students in cooperative learning was measured on a 5-point frequency-of-use scale (1 = Never, 2 = not very often, 3 = sometimes, 4 = quite often, 5 = always). Five items were used, and participants responded to items such as "Instructors tie cooperative learning to course objectives" and "Instructors communicate the benefits of cooperative learning to students." Internal reliability was sufficient ($\alpha = 0.87$).

Ethics statement

On March 21st, 2024, the University of North Dakota's institutional review board (IRB) granted permission for the study with an assigned number UND-551. Written permissions were sought from instructors about involving their students in a study. When permissions were granted, students who decided to participate in the research were educated about the purpose of the study and the confidentiality of the data before filling out the data-collecting forms, and their signed and verbal consent was obtained. During the interviews, audio recordings were made with the students' agreement. All student information was collected and stored under the principle of confidentiality. When transcribing the interviews, codes were used instead of actual names.

Data analysis

In the qualitative phase of the study, an initial analysis started by transcribing all seven interviews into a Word document and then began with open coding by reading the transcripts line by line to identify codes or significant statements and highlighting and writing the codes in the margin of the transcripts. Thereafter, the codes/significant statements were transferred onto an Excel spreadsheet for categories or patterns and themes that emerged from the data to be developed. A phenomenological approach of inquiry with deductive, generative, and constructive was used to analyze the interviews (Onwuebudzie & DaRos-Voseles, 2001). A method of constant comparison (Glaser & Strauss, 1967) was used to categorize units that appeared the same in content (Onwuebudzie & DaRos-Voseles, 2001). To ensure that the codes, categories, and emerging themes were correct, the researcher gave the data sheet to two colleagues to check it. After that, we met to discuss the codes, categories, and emerging themes to agree on the themes. The following steps were taken to ensure the accuracy and trustworthiness of the study (Lincoln & Guba, 1985). First, the researcher transcribed the interviews verbatim and compared the transcripts to the original tape. This was done to ensure that the words of the participants were represented. Second, member checking was utilized, where the researcher returned the transcripts and the analysis to participants to verify if the findings accurately represented what they had shared. This procedure demonstrates to the participants that the researcher values their perceptions and contributions (Robson, 2002). Third, peer debriefing was conducted to compare the codes and the emerging themes from the one-on-one interview. All the names that appeared in the analysis are pseudonyms.

In the quantitative phase of the study, data were analyzed using the Statistical Package for Social Sciences (SPSS) version 28. Descriptive statistics, such as frequencies and percentages, and inferential statistics, including logistic regression and correlation, were computed to describe participants' demographic and other sample characteristics.

Findings

The following themes emerged from the data concerning the effectiveness of cooperative learning on college students' learning outcomes in the qualitative phase of the study.

Positive interdependence

Positive interdependence has been dubbed as the first major requirement for an effective and successful CL activity among members of the group (Onwuebudzie & DaRos Voseles, 2001). Each member has a unique role to play in the group effort. In positive interdependence, members learn from the ideas and contributions of each member in such a way that “group members sink or swim together” (Jones & Jones, 2008, p. 66). Participants overwhelmingly noted that in CL, group members learn from each other since, in class, one might learn something better than others. John stated,

“If people come together, it is like the jigsaw. You put your pieces together to make up the whole. So cooperative learning is like you learn from me, and I learn from you and at the end, we all learn the same thing.” Ben also reiterated, “If you get along in the group, you learn or help each other.”

John noted,

“Honestly speaking, I think collaborative learning is the best learning for me because if an assignment is given or a piece of work is given to do it as a group, I think there are certain things I might not know that other members of the group will know and there are equally certain things that some members will not know that I will know. So we are going to blend our knowledge. I will learn from the members of the group while they will also learn from me. Their vacuums will be filled by knowledge from me and my vacuums filled by the knowledge from them.”

Communication skills

Participants stressed that working cooperatively in learning groups helps develop their communication skills in groups, and how to talk in a group. Ben stated, “I think one of the skills is communicating with other people. Is kind of you learn when to talk in a group and when to listen?” Not only learning how to communicate but also how to communicate for members to better understand, since members may come from different cultural backgrounds. Dora noted, “We learn communication skills because you have to be able to communicate well for the other members to understand.”

Advances in academic achievement

Participants stressed that engaging in cooperative learning advances their academic success as they learn from each other, and this can be translated into courses. Sarah stated, “So it advances your academic learning in the sense that the group members can help you to understand something you could not understand in class. I guess in a group we bring what we learn in class and try to discuss it even more.” Also, participants stated that cooperative learning could either improve their grade (s) in courses or not, depending on the type of group in which they find themselves. If the group members are committed and have the same work ethic, then their learning outcomes/grades will improve. But if the group members are not committed enough, obviously, their grades or learning outcomes would be low. Ben emphasized,

“I think at times I feel like it has enhanced my grade because the group was good. It depends on the group. If there is a group where you get along and you collaborate and everybody does their part, it does help your grade. But if you are in a group where some people kind of pull back or they don't do anything or they don't listen to your suggestions, then it kind of hurts your grade.”

Better understanding

Cooperative learning also promotes a better understanding of content materials among students. Participants indicated that sometimes, in the classroom, some instructors explain in complex terms, and therefore, they find it difficult to understand. Also, in cooperative groups, some members may

understand things better than others in the classroom, and they can explain clearly to the understanding of members. John confirmed, *“You know, some instructors don’t know how to explain things. So when we get into cooperative groups, some members of the group explain more lucidly and more clearly than some instructors, and there I am able to understand. Some members in cooperative learning groups simplify it to the understanding of each other.”*

Learn about the culture of group members

Ansari (2006), citing Johnson and Johnson (2005), emphasized that the utilization of CL builds a culturally pluralistic society within the four walls of the school. Johnson and Johnson, 2005) stated:

Cooperative learning promotes greater efforts to achieve, more positive relationships, and greater psychological health than do competitive and individualistic learning. These outcomes indicate that when cooperative learning is used the majority of the school day, diversity among students can be a potential source of creativity and productivity (p. 16).

Participants stressed that in cooperative learning, they just don’t end up doing academic work, but are also able to socialize and learn from each other’s culture, especially when the class is diverse. Dora had this to say, *“I get to know their culture better because of group work.”* Noah also posited, *“We also learn about other people’s culture.”*

The world of work

Participants stated that CL helps to prepare them for the world of work. In the current job market, businesses in their advertisements for hiring stress that they want people who can work as a team player. The concept of cooperative learning prepares students when they work with other people to develop their skills. Sarah stressed,

“Right now, if you read most of the job descriptions, one keyword that runs through is a team player, be a team player. We work in groups and so just the idea of presenting yourself and trying to work with the group helps you to build your life. You know, when you go outside the school, you are going to work with a lot of people.”

Themes that emerged from the social skills learned when engaged in CL were:

Positive attitudes

Research has shown that engaging in CL by students “promotes more positive attitudes toward learning, the subject area, and the college experience than does competitive or individualistic learning” (Johnson et al., 1998, p. 34). The authors stressed that several social psychological theories also “predict that students’ values, attitudes, and behavioral patterns are most effectively developed and changed in cooperative groups” (p.34). Participants emphasized that working cooperatively with other students instilled in them positive attitudes toward group members, the course assignment, and the promotion of their academic success. Dora confirmed,

“...and so the first one was a positive attitude, and students can have the right frame of mind to know that we can do it because we are in a group. There are people available who are ready to make up for our differences, and so we will be able to present a common front.”

Learn to respect the views of others

Participants demonstrated that in cooperative learning, they learn to respect the views and opinions of members. Noah stated, *“You also learn to accept other people’s point of view because I am looking at it from a different angle, others will also look at it from a different angle. But at the end of the day, you must come to a compromise position. You must disagree to agree because you must present something.”*

The following themes emerged from the perceived role of instructors:

Participants' views of instructors' roles in CL

Participants believed that the instructors should perform the role of facilitators if students were to enjoy the maximum benefits of cooperative learning. Doreen stated, *"From my perspective, I think the instructor should have facilitation responsibility. The instructor needs to explain the goal of this activity, explain responsibility, and what he/she wants us to do. First, explain the goal, explain the activity, and give more instructions about the activity."*

They also stressed that some instructors do not perform this role effectively. Ben noted, *"They assign the group and make you work. They are not facilitators. They just kind like trust that you would do your work."*

Supervision

Participants stressed that instructors should supervise students' work when working cooperatively. They noted that some instructors do that while others do not. Sarah confirmed, *"Yes, I think a few of them supervise. A few of them will visit from group to group and offer suggestions like, what about this line? Why don't you think about this line too? Some do, and some do not so much. Some put you into groups and go out and do other things."*

Explain the purpose or goal of the activity

Participants emphasized that instructors should explain the purpose and goal of the assignment. The type of skills and concepts they want students to achieve at the end of the assignment. What do you want students to achieve at the end of the class or assignment? They should give clear and specific guidelines on how to complete the project.

Themes that emerged on how instructors' roles influence students' attitudes toward cooperative learning were:

Good organization

Participants emphasized that some instructors could organize cooperative learning well, which positively influences their attitudes toward cooperative learning. On the other hand, some instructors don't organize and manage cooperative learning well, that had made them have a negative attitude toward cooperative learning. They expressed issues concerning group formation. Some tell students to form their groups, and they see students gravitating towards those they know, leaving others stranded. Some would tell them to form their groups and present them to them, and they ensure that every member has a group. John had this to say,

"They don't know how to do it. Some of them will just say, look for partners and do this. No supervision. Some will go and cloud somewhere, some will not have partners. That is not good management. But some say to get your group and present them to me. So, when students form groups and present them to him, he will make sure that everybody has a group and all groups are even and then he will say go and work. That is the best. So, I think those who behave like that are the best and those who say look for groups and do it, they don't know what they are doing."

Also, Dora stressed, *"For those who manage it well, it makes me to enjoy it and to suck all the juices from it. Those who manage it poorly, it is just like a car."*

Clear guidelines

Giving clear guidelines or not by instructors during cooperative learning impacts students' attitudes both positively and negatively. Doreen stated,

"For all my experience, I remember exactly all the courses that we have used cooperative learning. All the instructors increased my motivation by giving more instruction during cooperative learning and more information and engaged the groups for three or four minutes. They are very helpful and supportive for students to have the confidence that they are on the right track. This has helped me to develop a good attitude towards cooperative learning."

The theme that emerged from how instructors could design cooperative learning to build students' experience was to allow them to choose/select their members. They noted that this would not be feasible in the classroom. Noah had this to say,

"I was about to say that oftentimes, they have to allow us to choose group members but is not realistic because if you go to the corporate world you are not going to select people that you want to work with. But I believe that if you have the opportunity to select group members yourself or decide which group you want to belong to because you know them, and you know their schedule everything will work out well. But it becomes difficult when the group members are imposed on you or the instructor decides who you have to work with. Because like my class now one is in Canada, Maryland, and we have others from Washington DC, I mean all over the place, collaborating becomes difficult. So if instructors will allow us to decide our group members, even though it is not feasible, it is going to be difficult, but it will help us."

In the quantitative phase of the study, participants were made up of 99 females and 23 males. The average age for undergraduates was 21.5, and that of graduates was 37.4. One was missing, and 93.4% spoke English as their first language. The participants represented 15 disciplines (mode = 79 teaching and learning), eighty-two percent (82%) were undergraduates, and 18% were graduates. On how often participants engaged in CL in their classes, 54.1% noted that they were quite often involved in CL, and 28.7% said sometimes. Forty-nine percent (49.2%) showed that they sometimes engaged in cooperative learning outside classes.

Correlations

Several significant correlations were found among the scales or variables. This has significant implications for the study (see Table 2).

Table 1.

Cooperative Learning: Descriptive statistics and correlations

Scales	1	2	3	4	5
1. Students attitude	-				
2. Instructors role	.411**	-			
3. Social benefits	.616**	.324**			
4. Perceived benefits	.805**	.346**	.724**		
5. Students grade.	.457**	.276**		.321**	
Range	8-30	9-30	8-30	10-40	8.27
M	22.31	17.82	22.69	31.33	16.00
SD	5.02	3.41	3.76	5.55	3.76
Skewness	.67	.37	-.95	-.72	.36
Kurtosis	.35	-.14	1.84	1.28	.47
Cronbach alpha	.89	.83	.87	.91	.83

** p < .01 (2-tailed)

Significant positive correlations were recorded among the scales or variables. One of the correlations was a positive relationship between instructors' role in cooperative learning and students' attitudes towards CL, indicating that if instructors discharge their roles effectively, it positively influences students' attitudes toward cooperative learning. Failure on the part of instructors to perform their roles in cooperative learning may affect students' attitudes toward cooperative learning negatively. Another positive association was between perceived social skills learned during cooperative learning and students' attitudes toward cooperative learning, suggesting that students put to good use the social skills they learn when working with their colleagues. This might include respecting each other's views and showing good interpersonal relationships, among others. It also suggests that the possibility of students exhibiting these skills in the world of work in the future would be high. Also, perceived benefits of cooperative learning correlated positively with students' attitudes toward cooperative learning, showing that students would develop a love to work cooperatively with others because they derive enormous benefits from it. A bad attitude, on the other hand, means students derive little value when they work cooperatively with others. Again, there was a positive association between work and grade equity concerns and students' attitudes towards cooperative learning, suggesting that good grades influence students' attitudes to engage positively in cooperative learning and vice versa. Good grades in courses determine students' success in college, which might guarantee employment in future, and low grades determine failure in college. In addition, instructors' roles correlated positively with perceived social skills learned in cooperative learning. This demonstrates that the instructor's role- e.g., supervision, explanation of group dynamics, and communication of the benefits of cooperative learning to students develop their social skills to work with others. Furthermore, instructors' roles correlated significantly with the perceived benefits of cooperative learning. This suggests that instructors can help students to accrue the benefits of working cooperatively with other students. More so, there was a positive association between instructors' roles in cooperative learning and work and grade equity concerns in cooperative learning. This means that instructors explaining the benefits of cooperative learning and tying cooperation to course objectives can assist students in maximizing the benefits of working cooperatively. Work and grade equity concerns correlated positively with perceived social skills learned during cooperative learning, demonstrating that skills developed can help students do their fair share of the work to improve the quality of good grades. There was an association between work and grade equity concerns and the perceived benefits of cooperative learning. Surprisingly, there was no association between work and grade equity concerns and perceived benefits of cooperative learning.

Regression

Regression analysis was conducted to examine how well the independent variables or scales—perceived benefits of cooperative learning, work and grade equity concerns, perceived social skills learned in CL, and how instructors' role predicted attitude towards cooperative learning as the dependent variable (see Table 2).

Table 2.

Regression of attitude variables and cooperative learning scales

	Instructors' role	work and grade	Perceived benefits	Perceived social role
Attitudes	.10	.21	.64	.09

Note: Numbers in the table are standardized beta (β) coefficients.

The overall model with attitude towards cooperative learning as the dependent variable and perceived benefits of cooperative learning, work and grade equity concerns, perceived social skills learned in cooperative learning, and instructors' role as the independent variables was statistically significant ($R^2 = .72$, $p < .001$). Work and grade equity concerns predicted significantly students' attitudes toward cooperative learning ($\beta = .21$, $p < .001$). Also, perceived benefits of cooperative learning predicted

significantly with students' attitudes toward the cooperative learning group ($\beta = .64, p < .001$). Surprisingly, the instructors' role ($\beta = .10, p > .05$) and perceived social skills learned in cooperative learning ($\beta = .09, p > .05$) failed to predict students' attitudes toward cooperative learning.

Mixing Data

The study employed a side-by-side comparison to merge the data in a summary table, as shown in Table 3 below.

Table 3.

Mixing of qualitative and quantitative data

Research questions	Qualitative Results (One-on-one interview)/Themes	Quantitative Results (Survey)
(1) How effective do students find cooperative learning in terms of their learning outcomes? (How cooperative learning promotes students learning outcomes (benefits).	<ul style="list-style-type: none"> University students learn to develop communication skills in CL which promote their learning. CL prepares students for the world of work. College students learn to respect the views of others CL promotes better understanding of content of courses. 	<p>(a) There are positive relationships between the benefits of CL and social development of university students.</p> <p>(b) There is positive relationship between benefits of CL and university students' attitudes towards CL.</p>
(2) How does instructor's role influence college/university students' attitudes towards cooperative learning?	<ul style="list-style-type: none"> The involvement of instructors: (a) Students develop positive attitude if instructors get involved in cooperative learning activities. University students develop negative attitudes in cooperative learning if instructors don't get involved by explaining the nitty gritty of cooperative learning activities. 	<ul style="list-style-type: none"> There is a positive relationship between instructors' role and university students' attitudes towards cooperative learning activities (see correlation table (1)).
(3) Relationship between instructor's role, perceived benefits of CL, students' attitudes, and social skills.	<ul style="list-style-type: none"> Good management: If instructors supervise, give clear directions- students enjoy CL and enhance their learning outcomes (academic achievement). 	<ul style="list-style-type: none"> Instructors' role did not predict students' attitudes towards CL in the regression analysis. There is discrepancy between the qualitative and quantitative results.

Discussion

CL as an instructional strategy has been studied extensively due to its enormous benefits to students in college/university classrooms. This is demonstrated in both the qualitative and quantitative analyses in this study. Across topic areas and educational levels, much research has investigated how CL affects academic achievement. For instance, Johnson and Johnson's (2014) and Slavin's (2015) meta-analyses

have repeatedly shown how CL improves students' academic performance (Khan et al., 2024). Also, peer tutoring, active involvement, and critical thinking are all encouraged by cooperative learning, and these factors enhance student learning. Cooperative learning fosters the growth of higher-order cognitive abilities like metacognition and problem-solving, which improves conceptual comprehension and knowledge retention (Khan et al., 2024). Again, a study by Rudhumbu (2024) revealed that CL significantly and favourably affects university students' academic performance. The findings indicate that instructing students in CL under the following circumstances—individual accountability (IA), group processing (GP), promotive interaction (PI), also known as face-to-face interaction, positive interdependence (PDI), and social and interpersonal skills (SS)—significantly improves university students' academic performance (Rudhumbu, 2024). In addition, Nanor, Hanson, and Mahama's (2024) study found that the Students Team Achievement Division (STAD) cooperative learning paradigm considerably enhanced students' learning outcomes in hydrocarbon nomenclature. The STAD cooperative learning model was found to be a successful learning paradigm for raising student learning results. The STAD cooperative learning paradigm created an atmosphere that encouraged learners to actively participate, leading to the meaningful production of knowledge (Nanor, Hanson, & Mahama, 2024).

The results of the study demonstrated that students working cooperatively with others not only help them to achieve academic success but also imbibe in them the necessary social skills for the future world of work. Cooperative learning has been shown to improve students' social behaviours and interpersonal abilities in addition to their academic performance (Khan et al., 2024). Through the development of communication, cooperation, and conflict-resolution skills, collaborative activities create a welcoming and inclusive learning environment. In a study by Roseth, Johnson, and Johnson (2008), CL improves peer relationships and social engagement, which lowers social isolation and improves classroom dynamics. Cooperative learning also fosters empathy, perspective-taking, and respect for diversity, all of which assist in shaping well-rounded people who can function successfully in different social settings (Khan et al., 2024). Similarly, Lou et al. (2012) examined how cooperative learning affected students' capacity for empathy and perspective-taking and found that those who participated in cooperative learning activities significantly improved their social-emotional skills (Khan et al., 2024). Socio-cultural theory emphasizes the social nature of learning and how it happens through social interaction, stressing the importance of cooperative activities in promoting knowledge production and cultural mediation (Khan et al., 2024; Rudhumbu, 2024; Vygotsky, 1978).

Once again, the study showed that instructors play a crucial role in supporting students' academic success in CL. Their roles, especially effective management, supervision, explaining group dynamics and formation, providing clear guidelines, and discussing the benefits of CL in serving multiple learning objectives — whether when assigning work or not — influence students' attitudes either positively or negatively. This finding aligns with Chapman and Van Auken's (2001) study, which demonstrated that instructors significantly impact students' attitudes, perceived benefits, and concerns about fairness in work and grades related to group work, as confirmed by a path-analytic model. The study indicates that students are more likely to view group work positively if their instructors address group dynamics and employ techniques like peer assessments to evaluate each member's performance within their groups. Additionally, the results showed that the instructors' role and the development of social skills in CL did not predict students' attitudes toward CL. One possible reason for this could be that college or university students felt their instructors did not manage or supervise them effectively during CL activities and failed to provide clear instructions, which hindered the development of students' social skills. This is supported by the study of Chapman and Van Auken (2001), which confirms that instructors generally did not do enough to support their students' group experiences. This, in turn, influences students' attitudes toward CL.

The results further revealed that group formation in CL was critical in the qualitative phase, as students preferred to form their groups compared to instructors forming the groups. They believe forming their groups would help them to work effectively since they know themselves and have the same level of commitment. However, they expressed how unfeasible this might be in the classroom, where some

students might not have members to work with. A contribution of this study is the use of a mixed methods approach to study students' perceptions of cooperative learning and its relationship with their academic success to provide a better understanding in the literature since limited studies have been conducted using this approach, and failure to mix both the quantitative and qualitative data. As noted by Creswell and Plano Clark (2011) and Burrows (2013), researchers need to mix the two methods (qualitative and quantitative) instead of collecting data for both strands and keeping them separate throughout the study. Therefore, the mixing of data in this study demonstrates a unique contribution in this area. Also, the study confirms existing research.

Conclusion

The study was conducted to understand college students' perceptions regarding the impact of CL on their academic achievement and social development. It was observed that CL as an instructional strategy enhances the academic performance of students through higher-order thinking and problem-solving skills. Also, CL helps students develop the requisite 21st-century social skills and behaviours needed for the world of work. Again, group formation during the CL process is crucial, and college students prefer forming their groups instead of being formed by instructors. In addition, instructors play a critical role in shaping the attitudes of students positively during CL if they explain the group dynamics and provide vivid guidelines, group formation, and benefits and vice versa.

Recommendations

Since employers seek workers who demonstrate skills such as better understanding, friendliness, empathy, the ability to contribute to group efforts, communicate ideas effectively to justify their position, persuade others, and work well with people from diverse cultural backgrounds, students need to develop these skills through cooperative learning activities in college or university classrooms. Working effectively in a group is one of the most vital interpersonal skills a person can acquire, as it influences productivity, employability, and professional success. Therefore, there are strong reasons to teach students how to collaborate and foster positive attitudes towards the process. To achieve this, it is recommended that instructors effectively fulfill their roles to prepare students for the workplace by incorporating cooperative learning (CL) as an instructional strategy in their classrooms. It is also advised that future researchers consider using an exploratory sequential design to investigate how groups are formed in cooperative learning and how this impacts students' attitudes towards CL.

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Appendix

Students' perceptions of the cooperative learning scale

Name	Items	M	SD
Perceived benefits			
pbcl1_1	Cooperative learning enhances my communication skills.	2.95	.72
pbcl1_2	Cooperative learning stimulates what I will experience in the work world.	4.1	.76
pbcl1_3	I make new friends when I engage in cooperative learning.	3.95	.86
pbcl1_4	I learn best when I work cooperatively with other students on assignments.	3.52	.1.1
pbcl1_5	Cooperative learning helps me to better understand course materials.	3.72	.1.0
pbcl1_6	I exchange knowledge with other students through cooperative learning.	4.1	.74
pbcl1_7	In college classrooms, working cooperatively stimulates my critical thinking skills.	3.8	.93
pbcl1_8	Cooperative learning improves my academic performance. **	4.0	3.8
pbcl1_9	Cooperative learning prepares me to work in a company.	4.0	.81
Attitudes toward cooperative learning			
atcl1_1	My attitude towards cooperative learning is positive.	3.81	1.07
atcl1_2	Working cooperatively with other students is desirable to me.	3.46	1.06
atcl1_3	I am satisfied with cooperative learning in terms of my learning outcomes.	3.77	.95
atcl1_4	Cooperative learning is a waste of my time. R	2.15	1.10
atcl1_5	I find little value in working cooperatively with other students. R	2.26	1.08
atcl1_6	I enjoy working cooperatively with other students on course assignments.	3.68	.98
Work and grade equity concerns			
wg1_1	I do the work of others in cooperative learning. R	3.34	.96
wg1_2	In CP, other members do not do their fair share of the work.	3.29	.87
wg1_3	I worry about my grade in cooperative learning. R	3.47	1.05
wg1_4	Assignment should rather be graded on individual performance instead of group performance. R	3.58	1.04
wg1_5	It is difficult getting members in cooperative learning groups to actively participate in tasks. R	3.32	.90
wg1_6	Everyone in my cooperative group does his/her equal share of the work. R	3.04	.88
Perceived social skills leaned in CP			
pss1_1	Cooperative learning enhances my independence.	3.06	.93
pss1_2	I learn to be patient in cooperative learning.	3.85	.79
pss1_3	I develop the ability to listen and judge correctly in cooperative learning.	3.86	.71
pss1_4	Working cooperatively develops my discipline and self-control behaviours.	3.79	.79
pss1_5	I learn to respect the opinions of others in cooperative learning groups.	4.10	.76
pss1_6	Working cooperatively advances my interpersonal relationships with other students	4.01	.81
Instructors' role in cooperative learning			
irel1_1	I can go to the instructor with problems about the cooperative learning group.	3.46	1.0
irel1_2	Instructors tie cooperative learning to course objectives.	3.73	.75
irel1_3	Instructors communicate the benefits of cooperative learning to students.	3.33	.94
irel1_4	Instructors promote positive attitudes about groups.	3.82	.75
irel1_5	Instructors explain group dynamics in cooperative learning	3.46	.93

Note. Participants responded on a scale ranging from 1 = Strongly disagree to 5 = Strongly agree (For perceived benefits of cooperative learning, attitude towards cooperative learning, work and grade equity concerns, and perceived social benefits).

1 = Never to 5 = always (For instructors' role)

"R" indicates that the item was reverse-coded.

* Indicates removed during analysis

Conflicts of Interest

No conflict of interest has been declared by the author

Author Contribution

Corresponding author George Atta: Conceptualization, data curation, investigation, methodology, writing original draft, review & editing.

Declaration of Competing Interest

This research did not receive any specific grant from funding agencies in the public, commercial or non-profit sectors.

Ethics approval

In the writing process of the study titled “**Insights into college students’ perceptions of cooperative learning in college classrooms: A mixed methods approach,**” the rules of scientific, ethical and citation were followed; it was undertaken by the author of this study that no falsification was made on the collected data. “Journal Action Qualitative & Mixed Methods Research [JAQMER] and Editor” had no responsibility for all ethical violations to be encountered, and all responsibility belongs to the author, and the study was not submitted for evaluation to any other academic publishing environment.

Institutional review board (IRB) approval

On March 21, 2024, the University of North Dakota's Institutional Review Board (IRB) approved this project under the number UND-551.

Data Availability Statement

Anonymized data from this study can be made available on request from georgeprinceatta@gmail.com

Conflict management in organizations: A systematic review

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Abstract. The aim of this study is to systematically review the literature on conflict management in organizations in Turkey between 2005 and 2025, a period chosen because the full texts of one study from 2003 and another from 2004 were unavailable, resulting in their exclusion from the analysis. This study is a systematic review. The document analysis method was used as the data collection technique. Among the purposive sampling methods, the criterion sampling technique was preferred. In line with the aim of the research, articles published in Turkey between 2005 and 2025 and included in the TR Index database on the topic of conflict management in organizations were systematically examined. The population of the study consists of a total of 65 articles found in TR Index. The study reached the full count of these articles. The findings of the study indicate that the number of studies on conflict management in organizations have increased over the years, with the highest number of publications occurring particularly in and after 2020. The most frequently addressed topics in the examined articles were "conflict and its management" and "school climate." The most cited article received 25 citations. Quantitative studies were more numerous than qualitative and mixed-method studies. Based on these findings, it is expected that the topic of conflict management in organizations will continue to maintain its importance in the future.

Keywords: Organizational conflict, education, school management, systematic review

Introduction

Conflict is an inevitable part of organizational life. Whether it leads to growth or disruption depends on how it is managed. When approached constructively, conflict can strengthen relationships and improve problem-solving capacity (Raines, 2013). In every organization, conflict is inevitable; however, adopting the right approach significantly increases the likelihood of resolving disputes before they escalate out of control (Hasson, 2006). Conflict can be viewed not only as a destructive and harmful issue requiring resolution, but also as a constructive, challenging, and dynamic process that serves as an opportunity to initiate change (Steward, 1998).

Conflict management refers to addressing disputes that arise from differences in goals, interests, or competition for resources. When left unmanaged, conflicts can cause stress, inefficiency, and relationship breakdowns. However, effective conflict management transforms these challenges into opportunities for cooperation and trust (Luecke & Patterson, 2008). It relies on three core principles: efficiency, equity, and voice. Efficiency focuses on reducing harm to productivity and ensuring the effective use of resources. Equity ensures fair, evidence-based outcomes and appropriate responses to rights violations. Voice emphasizes inclusive participation, allowing all parties to express their perspectives and contribute to the resolution process. Together, these principles support sustainable and just outcomes (Budd & Colvin, 2014). In practice, conflict management focuses on developing long-term, mutually acceptable solutions rather than suppressing differences. It encourages a shift from individual perspectives toward shared understanding. Through open dialogue and constructive interaction, it strengthens relationships, improves communication, and supports better conflict resolution

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in the future. Success depends on creative options and sustainable agreements that satisfy all parties (Sıgri, 2018).

The initial conceptualization of interpersonal conflict management in organizational settings was proposed by Follett (1926/1940). She argued that conflicts could be managed through domination, compromise, and integration, while also suggesting that secondary strategies such as avoidance and suppression might be employed. Building on this foundation, Blake and Mouton (1964) categorized conflict management styles into five types; forcing, withdrawing, smoothing, compromising, and problem solving based on the degree of concern managers show for production and for people. Later, Thomas (1976) expanded this model by redefining conflict management along two behavioral dimensions: the tendency to engage in cooperativeness and assertiveness. Subsequently, Rahim and Bonoma (1979), and later Rahim (1983a), developed a refined framework that evaluates conflict management styles in terms of concern for self and concern for others. This dual-dimensional model reflects the motivational orientations of individuals during conflict interactions. Further validation of these two dimensions was provided by empirical studies conducted by Ruble and Thomas (1976) and Van de Vliert and Kabanoff (1990). Based on the intersection of these two core dimensions, Rahim and Bonoma (1979) proposed five distinct conflict management styles, a model that has since become foundational within contemporary conflict management theory.

Integrating style is a collaborative conflict management approach that places high importance on both oneself and others (Rahim, 2023). According to Follett (1926/1940), the fundamental rule of this style is to explicitly reveal the conflict and establish transparent communication between the parties. Gray (1989) describes it as a collaborative process in which the parties attempt to generate solutions that transcend their limited viewpoints by exploring different perspectives. According to Prein (1976), integration consists of two essential elements: confrontation to understand the causes of the conflict and problem solving to develop solutions that provide mutual satisfaction for the parties.

Obliging style is a conflict management approach in which the individual places the needs of the other party above their own. Aiming to satisfy the other party by minimizing differences and emphasizing common ground, this style may manifest as sacrifice, obedience, or altruistic generosity (Rahim, 2023). According to Boulding (1962), individuals who adopt the obliging style act as “conflict absorbers,” responding minimally to hostile behavior and even displaying a friendly attitude.

Dominating style is a competitive conflict management approach in which individuals prioritize their own interests while disregarding the expectations of the other party. Based on a win-lose perspective, this style involves assertive and forceful behavior aimed at defending one’s position or protecting one’s rights. Individuals who adopt the dominating style may use their power to achieve goals, ignore the needs of others, and resort to strategies such as deception, bluffing, or appealing to superiors when necessary. Especially those in positions of authority may adopt this style to compel subordinates into compliance. Dominating manifests in two forms: respectful and exploitative. While respectful domination can be effective in certain institutional contexts, exploitative domination undermines the balance of power by taking advantage of the other party (Rahim, 2023).

Avoiding style is a conflict management approach in which individuals disregard both their own needs and the expectations of the other party, preferring to stay away from conflict situations. Also known as suppression, this style may manifest as avoidance of responsibility, evasion of the issue, or withdrawal from threatening situations. Individuals with an avoidant style prefer to delay or ignore the conflict rather than resolve it, thereby satisfying neither their own interests nor those of the other party. Often displaying an indifferent attitude, such individuals may avoid publicly acknowledging the existence of conflict and may refuse to engage with the issue (Rahim, 2023).

Compromising style is an approach in which individuals moderately value both their own interests and the expectations of the other party, relying on the principle of mutual concession. In this style, parties partially relinquish their demands to reach an acceptable outcome, thereby establishing balance and quickly finding middle ground. The compromising style involves more sacrifice than dominating, but

less than obliging. Similarly, it addresses the issue more directly than avoiding but does not explore it as thoroughly as integrating (Rahim, 2023).

The effective management of conflicts that arise at various levels within organizations depends on individuals' knowledge of appropriate methods and strategies, as well as their ability to implement them. Determining which method to use in a given situation largely relies on the extent to which the parties involved are familiar with and competent in these strategies. Educational institutions are no exception to this dynamic. Like other organizations, schools may also experience conflicts of various types and intensities, and the management of such conflicts is directly related to individuals' knowledge and application of effective resolution methods (Günbayı & Karahan, 2006). Considering the significance of conflict management in the organizational context, the aim of this study is to present a systematic review of scholarly articles on conflict management published in Turkey within the scope of TR Index. In addition to evaluating these studies from methodological and ontological perspectives, the study also seeks to shed light on the historical development and future trends of conflict management in the Turkish context. Accordingly, the research aims to identify gaps in the existing literature and offer theoretical contributions to academic discourse. In this context, the study seeks to answer the following questions through an evaluation of articles published in Turkey about conflict management:

1. What is the annual distribution of articles published by journals in the field of conflict management?
2. What is the number of published articles according to data collection techniques (empirical or non-empirical)?
3. Which research methods (quantitative, qualitative, mixed, or literature review) have been employed in the published articles?
4. What research designs have been used in the published articles?
5. What is the annual distribution of empirical studies (quantitative, qualitative, mixed)?
6. Which published articles have contributed to the field through citations?
7. How have the subject headings of published articles changed over the years?

Methodology

Method and paradigm of research

In this study, articles published on the subject of conflict management between the years 2005 and 2025 were examined. The research employed the systematic review design, one of the qualitative research patterns, using the systematic analysis method. Systematic review is a method that aims to rigorously collect and analyze similar studies conducted within a specific field of research based on predefined methodological criteria, and to comprehensively summarize research trends and overall findings derived from the collected data (Karaçam, 2013). Systematic analysis is a method that helps make sense of large volumes of information through a structured and orderly examination. Moreover, it enables researchers to assess whether sufficient studies have been conducted on specific themes and to identify areas where further research is needed (Petticrew & Roberts, 2008).

The concept of “worldview” is considered a set of fundamental beliefs that guide individuals' actions and decisions (Guba, 1990). In the literature, this concept has been referred to in various ways: some researchers define it as a paradigm (Lincoln et al., 2011; Mertens, 2010), while others associate it with epistemological and ontological assumptions (Crotty, 1998). On the other hand, Neuman (2009) treats worldview as the methodological framework that shapes the overall structure of a study. The intellectual orientations adopted by researchers before beginning a study reflect their philosophical foundations and shape all stages of the research process. A paradigm is linked to the laws of nature that attempt to explain

the order of the universe, and each paradigm seeks to provide its own internal response to these laws. By offering the opportunity to approach the same phenomenon from different perspectives, a paradigm determines the researcher's point of view. In other words, a paradigm encompasses the nature of reality (ontology), the source of knowledge (epistemology), and the analysis of methods (methodology) (Gunbayi & Sorm, 2020). The belief systems held by researchers often lead them to clearly prefer one of the qualitative, quantitative, or mixed methods (Creswell, 2021). The worldview underlying this study, which was conducted using a qualitative research approach, is the interpretivist paradigm (Burrell & Morgan, 1979; Günbayi & Sorm, 2018). This perspective allows the researcher to interpret and define reality based on their knowledge, experiences, and the context in which reality exists. This approach acknowledges the existence of multiple realities, suggesting that different individuals may perceive the same situation in different ways, and therefore, reality is constructed within a social context (Büyüköztürk et al., 2020).

Sampling

The population of the study consists of 65 articles included in the TR Index. The study employed criterion sampling, one of the purposive sampling methods, and a complete enumeration of the population was achieved.

Data collection

This research is a systematic review. The studies on conflict management selected for analysis were evaluated through a holistic approach based on specific criteria. Document analysis was used as the data collection technique. The literature review was conducted in the TR Index on January 23, 2025. To ensure alignment with the research objective, the keyword search was limited to two terms: conflict and teacher. According to the literature review, a total of 77 articles were identified within the TR Index. One article was a correction notice, and nine articles despite matching the keywords were found to be unrelated to conflict management. Additionally, two articles published in 2003 and 2004 could not be accessed due to access restrictions. As a result, 65 full-text articles were included and analyzed in this study.

Data analysis

In this study, descriptive analysis, one of the qualitative data analysis methods, was employed. Descriptive analysis is an analytical approach that involves summarizing and interpreting data obtained through various data collection instruments within the framework of pre-established thematic categories (Gunbayi, 2023).

Findings

The annual distribution of articles published by journals in the field of conflict management

Table 1.

Number of articles by year

Years	n	%
2005-2009	6	9.23
2010-2014	12	18.46
2015-2019	22	33.85
2020 and beyond	25	38.46
Total	65	100.00

Examining the articles written in Turkey on conflict management in five-year periods is significant in terms of demonstrating the development of this field over time. In this study, the years 2005–2009 constitute the first period, 2010–2014 the second period, 2015–2019 the third period, and 2020 and beyond the fourth period. While the first three periods each cover a five-year span, the last period encompasses a six-year timeframe. According to the findings of the systematic review, the fewest number of articles on conflict management were published between 2005 and 2009 (9.23%). The number of articles increased during the periods 2010–2014 (18.46%) and 2015–2019 (33.85%), indicating a growing interest in the topic. The years 2020 and beyond (38.46%) were identified as the period in which the highest number of publications in the field of conflict management appeared.

The number of published articles according to data collection techniques

Table 2.

Distribution of articles by data collection techniques

Data collection techniques	n	%
Empirical Studies	63	96.92
Non-Empirical Studies	2	3.08
Total	65	100.00

In this study, the articles were categorized into two groups based on their data collection techniques, following the classification proposed by Büyüköztürk et al. (2020): empirical (observational, experiential, or experimental) and non-empirical (documentary or textual). Empirical studies collect data using instruments such as surveys, observations, and interviews, whereas non-empirical studies gather data from written and electronically recorded sources such as curricula, regulations, books, newspapers, and reports. An analysis of articles written in Turkey reveals that the majority are empirical studies (96.92%). In contrast, the number of non-empirical studies (3.08%) is significantly lower.

Distribution of articles by research methods

When the distribution of articles by research methods is evaluated, the studies are grouped into empirical and non-empirical categories. In the classification of empirical studies, the framework proposed by Tashakkori and Teddlie was taken into account (Murphy et al., 2007). When the findings of the articles are examined as empirical studies, it is observed that quantitative research (64.62%) significantly outnumbers qualitative (27.68%) and mixed-method (4.62%) studies. When the findings of the articles are evaluated as non-empirical studies, it is found that literature reviews (3.08%) are a rarely used method. Since no theoretical analysis studies were identified, they were not included in Table 3.

Table 3.

Distribution of articles by research methods

Research methods	n	%
Empirical studies		
Quantitative	42	64.62
Qualitative	18	27.68
Mixed methods	3	4.62
Non-empirical studies		
Literature review	2	3.08
Total	65	100.00

Research designs used in empirical studies

Table 4.

Research designs used in empirical studies

Analysis of empirical studies	n	%
Quantitative		
Descriptive	38	60.32
Experimental	2	3.17
Casual comparative	2	3.17
Qualitative		
Case study	9	14.29
Phenomenology	9	14.29
Mixed methods		
Convergent parallel design (parallel databases variant)	2	3.17
Embedded design (experimental variant)	1	1.59
Total	63	100.00

An examination of the findings of the articles reveals that, according to Table 3, most studies on conflict management in the field of education in Turkey are empirical studies. Therefore, the research aimed to explore which research designs were used in these empirical studies. Empirical studies were first divided into three categories (quantitative, qualitative, and mixed methods) and then further grouped according to their specific research designs. Quantitative studies were classified into three categories. According to this classification, among empirical studies, descriptive research is the most frequently used design within quantitative methods, accounting for 60.32% of the empirical studies. Experimental designs make up 3.17%, and causal comparative designs also constitute 3.17% of the empirical studies. Among the empirical studies employing qualitative research methods, two types of research designs were identified based on the findings: case study and phenomenology. According to the analysis, case study design accounts for 14.29% of the empirical studies, while phenomenological design also represents 14.29% of the total. Empirical studies utilizing mixed methods were categorized into two types: convergent parallel design (parallel databases variant) and embedded design (experimental variant). There are two articles employing the convergent parallel design, comprising 3.17% of empirical studies. The embedded design (experimental variant) was used in only one article, representing 1.59% of the empirical studies. Mixed methods designs include eight core types, as defined by Creswell and Plano Clark (2011) and Günbayı and Sorm (2018): convergent parallel design, explanatory sequential design, exploratory sequential design, embedded design, multiphase/ the evaluation design, transformative/ participatory social justice design, case study design, and action study design.

The annual distribution of empirical studies

Table 5.

Annual distribution of empirical studies (quantitative, qualitative, mixed methods)

	2005-2009		2010-2014		2015-2019		2020 and beyond		Total	
	n	%	n	%	n	%	n	%	n	%
Quantitative	3	50.00	10	83.33	17	77.27	12	52.17	42	66.67
Qualitative	1	16.67	2	16.67	4	18.18	11	47.83	18	28.57
Mixed methods	2	33.33	-	0.00	1	4.55	-	0.00	3	4.76
Total	6	100.00	12	100.00	22	100.00	23	100.00	63	100.00

Table 5 presents the distribution of empirical studies in Turkey over time. It focuses on how quantitative, qualitative, and mixed method studies have been distributed across different time periods. Accordingly, quantitative research methods were used in 3 articles between 2005–2009, 10 articles between 2010–2014, 17 articles between 2015–2019, and 12 articles in 2020 and beyond, totaling 42 articles. Using qualitative research methods, only 1 article was published between 2005–2009, 2 articles between 2010–2014, 4 articles between 2015–2019, and 11 articles in 2020 and beyond, resulting in a total of 18 articles. Regarding mixed methods research, 2 articles were published during 2005–2009 and 1 article during 2015–2019. No mixed methods studies were conducted in the other periods. Thus, the total number of articles employing mixed methods is 3.

Articles that have contributed to the field through citations

Table 6.

Articles that have contributed to the field through citations

Cite	First author	The title of the article	Year
25	Zembat, R.	A Study on Preschool Teachers' Perceived Conflict with School Administrators, Colleagues and Parents	2012
21	Arslantaş, H. İ.	An Investigation of Conflict Management Strategies of The Principals as Perceived by Primary School Teachers	2012
17	Kartal, H.	Bullying and School Climate from the Aspects of the Students and Teachers	2009
17	Türnüklü, A.	Students' Conflicts, Causes, Resolution Strategies and Tactics in High Schools	2007
15	Konak, M.	According to the Teachers' Opinions the Relationship between the Ethical Leadership Behaviors of the Elementary School Principals and Their Conflict Management Strategies	2015
12	Koçak, S.	The Effectiveness Levels of Conflict Management Methods Used by School Administrators	2013
11	Köklü, M.	Participations in Decision Making, Desires for Participation, Job Satisfaction and Conflict Management Styles of Secondary Education Teachers	2012
11	Çinkır, Ş.	Teachers Opinions about the Professional Working Relationships in Schools	2010
10	Arslantaş, H. İ.	The Relationship Between School Principals' Instructional Leadership and Their Use of Constructive and Destructive Dimensions of Conflict Management	2012
10	Aydın, İ.	Sources of Conflict Between Primary School Principals and School Counsellors in Turkey	2011
9	Bartan, M.	Opinions of Mothers, Whose Children Continue Their Preschool Education, Towards the Process of Having Values Acquired to Them	2020
9	Karahan, T. F.	The Effect of Human Relations and Communication Course on the Conflict Resolution and Empathic Skill Levels of Prospective – Teachers'	2006
8	İvrendi, A.	Predicting 5-6 Years Old Children's Number Concept Skills in Terms of Parent and Teacher Variables	2017
8	Tatlilioğlu, K.	Violence and Tyranny at Schools: Risk Factors, Services of Protect, Prevent and Interfere: The Sample of The Konya	2016
8	Seçer, Z.	The Comparison of 68-72 Months Pre-School and Primary School Children's Relationships with Their Teachers and Their School Adjustment	2015
8	Sargın, N.	Examining Prospective Teachers' Conflict and Violence Awareness Levels by Some Variables	2010
8	Türnüklü, A.	Examination Of High School Managers' Conflict Resolution Strategies and Tactics from The Social Constructivist Perspective	2005
6	Ercengiz, M.	An Examination of The Relationship Between Academic Procrastination Behavior and Social Media Dependency of The Faculty of Education Students in Terms of Different Variables	2017
5	Ergul, M.	Educational Problems Experienced by Refugee Students: A Delphi Study from the Teachers' Perspective	2022

5	Tunç, B.	Examining the Relationship between School Administrators' Conflict Management Strategies and School Culture According to Teachers' Views	2020
5	Dönmez, B.	Desicion-Making, Leadership and Conflict in Primary Schools as Loosely Coupled System	2011
4	Korkmaz, F.	The Role of Work-Family Enrichment in Professional Vitality Gain: Structural Equality Model Analysis	2021
4	Ası, D. Ş.	Turkish Adaptation of Student-Teacher Relationship Scale-Short Form	2018
4	Nural, E.	Conflict Management Methods Used by the School Principals According to Perceptions of Teachers	2012
3	Tican, C.	Pre-Service Teachers' Entrepreneurship Characteristics and Views of Career Stress	2020
3	Bayır, Ö. G.	Perception of Peace in Students' Drawings	2016
3	Şahin, A.	The Relationship Between Interpersonal Communication Skills and Conflict Management Strategies of Primary School Administrators	2010
3	Argon, T.	Stress Factors Affecting First Level Primary School Teachers	2007
2	Küçüker, E.	Human Relations Problems of Secondary School Teachers Faced during the Emergency Distance Learning Process	2022
2	Usta, I.	Examining the Relationship Between Participative Climate Perception and Organizational Dissent	2020
2	Koç, M. H.	Classroom Teachers' Opinions on Strategies for Coping Difficult Parents	2020
2	Gencel, İ. E.	A case study on Argumentation Based Teaching	2019
2	Gül, İ.	Investigation of Administration and Conflict Resolution Skills of Differences of School Administrators by Teacher's Vision	2018
2	Demirdağ, S.	The Relationship Between Primary School Administrators' Ethical Leadership and Conflict Management Strategies: The Perceptions of Substitute Teacher	2016
2	Okçu, V.	Examining the Relationship between Communication Skills and Conflict Management Styles of School Administrators According to Perceptions of Primary and Secondary School Teachers	2016
2	Altınok, V.	Psychological Violence of Managers Intensity in Educational Institutions	2014
2	Türnüklü, A.	Examination of Teachers' Conflict Resolution Strategies and Tactics from The Perspective of Social Constructivism	2006
1	Yüksel, S.	Investigation of the Relationships Between the Conflict Resolution Strategies Used by School Principals and Teachers' Motivation and Organizational Commitment	2022
1	Atik, U.	Difficulties Encountered in Sound-Based Primary Literacy Teaching According to Teachers' Views	2022
1	Sağbaş, N. Ö.	Teachers' Views on the Effect of the Conflict on the Teaching Performance	2022
1	Kahraman, S.	The Analysis of the Relationship Between the Organisational Climate and Organisational Learning Perceptions of Both Teachers and Principals Working at Schools	2021
1	Öntaş, T.	Implications of Teaching Controversial Issues for the Field of Classroom Education	2021
1	Çatal, U.	The Investigation of Prospective Teachers' Conflict Action Style According to The Levels of Their Emotional Self-Efficacy	2019
1	Akış, G.	An Investigation of the Predictors of School Adjustment in 5-6 Year-Old Preschools	2018

Another objective of this research is to identify the articles that have contributed to the field. For this reason, articles related to conflict published within the scope of the TR Index were listed and evaluated based on the number of citations they received. The articles were ranked from the most cited to the least cited.

According to the research findings, the article titled A Study on Preschool Teachers' Perceived Conflict with School Administrators, Colleagues and Parents by Zembat stands out as the most cited study in the field of conflict, having received 25 citations. Following this, the second most cited article, written by Arslantaş and Özkan, titled An Investigation of Conflict Management Strategies of The Principals as Perceived by Primary School Teachers, received 21 citations. In third place, both receiving 17 citations,

are Bullying and School Climate from the Aspects of the Students and Teachers by Kartal and Bilgin, and Students' Conflicts, Causes, Resolution Strategies and Tactics in High Schools by Türnüklü.

Another noteworthy article is According to the Teachers' Opinions the Relationship between the Ethical Leadership Behaviors of the Elementary School Principals and Their Conflict Management Strategies by Konak and Erdem, which received 15 citations. The article The Effectiveness Levels of Conflict Management Methods Used by School Administrators by Koçak and Baskan Atanur followed with 12 citations. Additionally, Participations in Decision Making, Desires for Participation, Job Satisfaction and Conflict Management Styles of Secondary Education Teachers by Köklü and Teachers Opinions about the Professional Working Relationships in Schools by Çınkır and Çetin Kuru each received 11 citations.

Two other influential studies The Relationship Between School Principals' Instructional Leadership and Their Use of Constructive and Destructive Dimensions of Conflict Management by Arslantaş and Özkan, and Sources of Conflict Between Primary School Principals and School Counsellors in Turkey by Aydın et al. received 10 citations each. The articles Opinions of Mothers, Whose Children Continue Their Preschool Education, Towards the Process of Having Values Acquired to Them by Bartan and Arıcı, and The Effect of Human Relations and Communication Course on the Conflict Resolution and Empathic Skill Levels of Prospective Teachers' by Karahan et al. were both cited 9 times.

Five articles each received 8 citations: Predicting 5-6 Years Old Children's Number Concept Skills in Terms of Parent and Teacher Variables by İvrendi and Güleç, Violence and Tyranny at Schools: Risk Factors, Services of Protect, Prevent and Interfere: The Sample of The Konya by Tatlılıoğlu, The Comparison of 68-72 Months Pre-School and Primary School Children's Relationships with Their Teachers and Their School Adjustment by Seçer et al., Examining Prospective Teachers' Conflict and Violence Awareness Levels by Some Variables by Sargın, and Examination Of High School Managers' Conflict Resolution Strategies and Tactics from The Social Constructivist Perspective by Türnüklü.

The article An Examination of The Relationship Between Academic Procrastination Behavior and Social Media Dependency of The Faculty of Education Students in Terms of Different Variables by Ercengiz et al. received 6 citations. Articles with 5 citations include Educational Problems Experienced by Refugee Students: A Delphi Study from the Teachers' Perspective by Ergul and Arslan, Examining the Relationship between School Administrators' Conflict Management Strategies and School Culture According to Teachers' Views by Tunç and Özkara, and Desicion-Making, Leadership and Conflict in Primary Schools as Loosely Coupled System by Dönmez et al.

The study titled The Role of Work-Family Enrichment in Professional Vitality Gain: Structural Equality Model Analysis by Korkmaz received 4 citations. Similarly, Turkish Adaptation of Student-Teacher Relationship Scale-Short Form by Ası and Karabay, and Conflict Management Methods Used by the School Principals According to Perceptions of Teachers by Nural et al. also received 4 citations. Three citations were recorded for the following articles: Pre-Service Teachers' Entrepreneurship Characteristics and Views of Career Stress by Tican, Perception of Peace in Students' Drawings by Gürdoğan Bayır and Cengeli Kose, The Relationship Between Interpersonal Communication Skills and Conflict Management Strategies of Primary School Administrators by Şahin, and Stress Factors Affecting First Level Primary School Teachers by Argon and Ateş.

Several studies received 2 citations each: Human Relations Problems of Secondary School Teachers Faced during the Emergency Distance Learning Process by Küçükler and Dernek Uzun, Examining the Relationship Between Participative Climate Perception and Organizational Dissent by Usta and Karalar, Classroom Teachers' Opinions on Strategies for Coping Difficult Parents by Koç, A Case Study on Argumentation Based Teaching by Gencil and İlman, Investigation of Administration and Conflict Resolution Skills of Differences of School Administrators by Teacher's Vision by Gül and Türkmen, The Relationship Between Primary School Administrators' Ethical Leadership and Conflict Management Strategies: The Perceptions of Substitute Teacher by Demirdağ, Examining the Relationship between Communication Skills and Conflict Management Styles of School Administrators

According to Perceptions of Primary and Secondary School Teachers by Okçu et al., Psychological Violence of Managers Intensity in Educational Institutions by Altınok, and Examination of Teachers' Conflict Resolution Strategies and Tactics from the Perspective of Social Constructivism by Türnüklü.

Each of the following articles received 1 citation: Investigation of the Relationships Between the Conflict Resolution Strategies Used by School Principals and Teachers' Motivation and Organizational Commitment by Yüksel et al., Difficulties Encountered in Sound-Based Primary Literacy Teaching According to Teachers' Views by Atik and Sağrılı, Teachers' Views on the Effect of the Conflict on the Teaching Performance by Sağbaş and Özkan, The Analysis of the Relationship Between the Organizational Climate and Organizational Learning Perceptions of Both Teachers and Principals Working at Schools by Kahraman and Usta, Implications of Teaching Controversial Issues for the Field of Classroom Education by Öntaş et al., The Investigation of Prospective Teachers' Conflict Action Style According to the Levels of Their Emotional Self-Efficacy by Çatal and İkiz, and An Investigation of the Predictors of School Adjustment in 5–6 Year-Old Preschools by Akış and Alakoç Pirpir. Additionally, 21 articles published between 2015 and 2024 have not yet received any citations. Citation counts for all articles are presented in Table 6.

The change in topics of the published articles by year

Table 7.

The change in topics of the published articles by year

Topics	2005-2009		2010-2014		2015-2019		2020 and beyond		Total	
	n	%	n	%	n	%	n	%	n	%
Conflict and management	4	66.67	10	83.33	7	31.82	13	52.00	34	52.31
School Climate	2	33.33	2	16.67	15	68.18	12	48.00	31	47.69
Total	6	100.00	12	100.00	22	100.00	25	100.00	65	100.00

Another aim of the study is to identify how the topics related to conflict have changed over the years. Table 7 presents the topic categories and the number of articles published in each period. An examination of the subjects and article counts reveals that, in the field of conflict and management, 4 articles (66.67%) were published between 2005–2009, 10 articles (83.33%) between 2010–2014, 7 articles (31.82%) between 2015–2019, and 13 articles (52%) in 2020 and beyond. Regarding the topic of school climate, 2 articles (33.33%) were published between 2005–2009, 2 articles (16.67%) between 2010–2014, 15 articles (68.18%) between 2015–2019, and 12 articles (48%) in 2020 and beyond.

Discussion

The purpose of this study is to examine the articles published within the TR Index in Turkey on the theme of conflict management in terms of research methods and addressed topics, and to provide a historical development analysis to guide future research.

In this context, the first research question addressed is the distribution of studies on conflict management in Turkey over the years. Based on an analysis of the articles in five-year periods, it was found that the number of articles published between 2005 and 2009 was quite limited; however, this number has increased significantly in the following years. The limited number of studies in the early period may be due to the fact that conflict management was not yet a prominent topic in educational sciences at that time and the number of researchers specialized in this field was relatively low. The period after 2020 stands out as the time when the highest number of studies on conflict management was published. This finding indicates that the topic of conflict management is gaining increasing importance in Turkey and is being addressed more intensively in academic circles. At the same time, this suggests that conflict management research in Turkey is still an emerging, dynamic, and much-needed area.

Another research question examined in this study concerns the distribution of articles based on data collection techniques. Accordingly, all articles published within the scope of TR Index were classified as either empirical studies (based on observation, surveys, or interviews) or non-empirical studies (documentary or archival research). The findings revealed that the number of empirical studies is considerably higher than that of non-empirical ones. This suggests that observational or experimental methods are more frequently preferred in conflict management research conducted in Turkey.

Another key dimension examined in the study is the distribution of articles based on their research methodologies. Accordingly, empirical studies were classified as quantitative, qualitative, and mixed-method research, and each was evaluated within the framework of the paradigm it reflects. This categorization of research designs provides important insights into the methodological orientations of conflict management studies conducted in Turkey. When examining the history of research, it is evident that for a long period, the quantitative research paradigm dominated many disciplines. This paradigm incorporated various quantitative research models and was regarded as the only valid approach (Gökçek et al., 2013). However, during the 20th century, some scholars began to challenge the assumptions and principles of the quantitative approach and gradually adopted qualitative research paradigms (Kıral & Kıral, 2011). According to Denzin and Lincoln (2000), the early stages between 1900 and 1950 were highly significant for the development of qualitative research. During the 1960s, the mixed methods paradigm emerged, advocating the simultaneous use of both quantitative and qualitative approaches within a single study. This paradigm, which is based on the integration of qualitative and quantitative methods in a single research process, began to establish its foundational framework during this period (Leech & Onwuegbuzie, 2009). In subsequent years, mixed methods research gained greater theoretical significance and became more widely applied in practice (Creswell, 2003; Tashakkori & Teddlie, 1998, 2003). The findings of this study reveal that quantitative research dominates the field of conflict management in Turkey. This reflects the continued influence of the positivist paradigm in academic research. The positivist approach assumes that reality exists independently of the researcher and that an objective reality exists outside the individual. According to this view, reality is observable, measurable, and can be analyzed using objective methods. Researchers who adopt quantitative research methods generally believe that facts can be separated from emotions and that the world consists of a single, objectively discoverable reality (Büyüköztürk et al., 2020). However, in recent years, there has been an increase in qualitative research based on anti-positivist approaches. The social constructivist paradigm assumes that individuals attempt to understand the world through the social and cultural contexts in which they live. According to this perspective, individuals construct subjective and object-oriented meanings based on their lived experiences. These constructed meanings are diverse and multifaceted; therefore, rather than reducing participants' perspectives to a few categories, researchers aim to reveal their complexity and diversity. The main goal of such research is to gain an in-depth understanding of participants' viewpoints regarding the studied phenomenon. Within this framework, the researcher's intention is to explore and interpret how individuals make sense of the world (Creswell, 2021). The research findings also indicate that studies using mixed methods are present in the literature. Researchers with a pragmatic perspective have developed the mixed methods approach. This method is proposed as an alternative when neither the outcome-oriented focus of quantitative studies nor the process-oriented evaluations of qualitative studies alone are sufficient. In cases where the nature of the research problem necessitates the holistic integration of both process and outcome dimensions, and when sufficient resources are available to support this approach, the use of mixed methods becomes a highly appropriate and effective choice (Büyüköztürk et al., 2020). On the other hand, non-empirical studies were treated as a separate category in this research. Among these, studies based on the literature review were found to be the least preferred research method. Furthermore, no theoretical analysis studies were identified among all the articles reviewed.

Another notable finding that emerged from the research relates to the research designs used in empirical studies. Quantitative designs were categorized into three groups: descriptive, experimental, and causal comparative research. Descriptive research aims to explain the phenomenon under investigation in detail, evaluate it across different standards, and uncover potential relationships between variables (Gunbayi, 2023). The analysis showed that descriptive research constitutes the majority of quantitative studies in

this field. Experimental research refers to studies in which the researcher systematically manipulates independent variables in a controlled setting to test their effect on dependent variables. The primary objective of this design is to investigate the impact of systematically altered independent variables on dependent variables in order to establish a valid and reliable cause-and-effect relationship. Causal-comparative research, on the other hand, seeks to identify the causes of an event or condition that has already occurred, as well as the variables that may influence these causes (Büyüköztürk et al., 2023). According to the research findings, both experimental and causal comparative studies are minimally represented within the broader group of quantitative research. Qualitative designs were evaluated according to several categories, including case study, phenomenology, grounded theory, ethnography, critical discourse, discourse analysis, narrative inquiry, action research, and systematic review (Lapa et al., 2018). The findings revealed that among the qualitative designs, only case study and phenomenology were utilized in the reviewed articles. It was observed that case study and phenomenology were employed with equal frequency within qualitative research. Mixed method designs were classified into the following categories: the convergent parallel design such as the parallel databases variant, the data transformation variant, the data validation variant/the questionnaire variant and the fully integrated variant; explanatory sequential design including follow-up explanations variant, participant selection variant /case selection variant; the exploratory sequential design such as theory-development variant/ new variable development variant, instrument-development variant/ survey-development variant, intervention development variant, and digital tool development variant; the embedded design including embedded experimental variant, embedded correlational variant, and embedded instrument development and validation variant; the multiphase design/ the evaluation design used in large-scale program development and evaluation projects, multilevel statewide studies, or single mixed methods studies that combine both concurrent and sequential phases; the transformative design/ participatory social justice design incorporating the feminist lens transformative variant, the disability lens transformative variant, the socioeconomic class lens transformative variant; case study design including case study design with holistic single case design, case study design with embedded single case design, case study design with multiple case design, case study design with embedded multiple case design; and finally, action study design such as technical action study variant, participatory action study variant, and emancipatory action study variant (Creswell & Plano Clark, 2011; Günbayi & Sorm, 2018). According to the research findings, only two types of mixed method designs were identified in the articles: the convergent parallel design with the parallel databases variant and the embedded design with experimental variant. It has been determined that mixed method studies are quite limited among the empirical research examined.

Another key finding that emerged from the study concerns the distribution of empirical studies on conflict management in organizations over time. As presented in Table 5, a total of six studies were published during the period 2005–2009, half of which were conducted using quantitative methods (50%), while the remainder employed qualitative (16.67%) and mixed methods (33.33%). This period can be characterized as one in which the field was still represented by a limited number of research examples and methodological diversity was relatively constrained. During the period 2010–2014, the number of published studies increased to twelve, the majority of which (83.33%) were conducted using quantitative approaches. The proportion of qualitative studies remained at 16.67%. These findings indicate that the dominant research paradigm during this period was positivist, and that researchers preferred analyses based on measurable variables and numerical data. This trend can also be associated with a broader movement toward evidence-based practices in the fields of education and administration. In the years between 2015 and 2019, an increase was observed both in the number and methodological diversity of empirical studies. Of the 22 studies published in this period, 77.27% employed quantitative methods, 18.18% used qualitative methods, and 4.55% adopted a mixed-methods approach. Although quantitative studies continued to dominate, there was a noticeable rise in qualitative research as well, suggesting that researchers began to adopt a more contextual and in-depth understanding of conflict management. The post-2020 period represents a phase in which qualitative studies significantly increased compared to previous years. Of the 23 studies published in this period, 52.17% were quantitative, while 47.83% employed qualitative methods. This shift reveals a growing influence of the anti-positivist paradigm in the field of educational administration and organizational studies in Turkey, indicating a movement among researchers toward interpreting social phenomena through participatory perspectives and

interpretative frameworks. Mixed-methods research, however, remained underrepresented. Only three studies in total were conducted using a mixed-methods approach. In conclusion, the distribution of empirical research over time suggests that positivist approaches have long dominated studies on organizational conflict management in Turkey. However, since 2015, qualitative approaches have started to gain traction in the literature. For future studies, enhancing methodological diversity particularly through the broader application of mixed-method designs will contribute significantly to the depth and richness of the field.

Identifying the studies that have contributed to the field among the articles written on conflict management is significant for detecting trends over the years and guiding future research. In this study, the article with the highest number of citations was listed first. In this context, the analysis revealed that the most frequently cited studies generally focus on themes such as school-based conflicts, school climate, ethical leadership, and communication. The study conducted by Zembat (2012), which examines the conflicts perceived by preschool teachers from a multi-stakeholder perspective, received 25 citations and became the most cited research. This finding underscores the importance of conflicts experienced in the relationships among teachers, administrators, and families during early childhood education. Following this, the study by Arslantaş (2012), which investigates school principals' conflict management approaches through the perceptions of primary school teachers, has received 21 citations, establishing itself as a strong reference point in the field. Similarly, the studies by Kartal (2009) and Türnüklü (2007), each receiving 17 citations, focus particularly on student conflicts, bullying, and resolution strategies. These four studies reveal that conflict management is a complex process that affects all stakeholders within the school environment. Another noteworthy example is the study conducted by Konak (2015), which examines the relationship between primary school principals' ethical leadership behaviors and their conflict management strategies. With 15 citations, this research makes significant contributions to the field. Other studies by researchers such as Koçak (2013), Köklü (2012), and Çinkır (2010) have also gained visibility in the literature by receiving over ten citations. Most of these studies center on teachers' perceptions of administrators and focus on the practical implications of conflict management in organizational relationships. On the other hand, although some studies have received only one or two citations, they provide original contributions in terms of content. For instance, Demirdağ (2016) sheds light on field realities by addressing the relationship between ethical leadership and conflict management from the perspective of substitute teachers, while Usta (2020) adds a noteworthy dimension to the field by examining the relationship between organizational dissent and climate. Some studies have not yet received any citations. This may be due to the insufficient time elapsed since their publication for them to generate scientific impact.

One of the significant findings obtained from the study is the change observed over the years in the thematic focus of the articles published in the field. The data in Table 7 were evaluated within the framework of four distinct periods 2005–2009, 2010–2014, 2015–2019, 2020 and beyond, the trends throughout these periods were revealed. When these intervals are taken into account, it is observed that the research areas predominantly revolve around the themes of “Conflict and Management” and “School Climate.” An examination of the studies published between 2005 and 2009 shows that only six articles belonged to this period, and 66.67% of them were related to the theme of “Conflict and Management.” This finding indicates that the early literature was primarily focused on managing in-school conflicts. On the other hand, the fact that the theme of “School Climate” accounted for only 33.33% during this period reveals that interest in this area was still limited. This pattern suggests that the subject of conflict in organizations entered the literature relatively earlier, while studies on school climate began to gain momentum at a later stage. During the second period, from 2010 to 2014, a total of 12 articles were published, the vast majority (83.33%) of which were again associated with the theme of “Conflict and Management.” This finding indicates that the orientation emerging in the previous period was further reinforced, and that researchers' attention increasingly focused on the nature, types, and management strategies of organizational conflicts. However, the proportion of studies addressing the theme of “School Climate” during the same period remained at 16.67%, showing that conflict management-oriented approaches were still dominant in this phase, while processes such as school climate had not yet been sufficiently prioritized. The years between 2015 and 2019 emerged as a period marked by a noteworthy

transformation. Of the 22 studies published during this period, 68.18% were related to “School Climate” and 31.82% to “Conflict and Management.” This finding indicates a significant increase in academic interest in school climate and shows that it began to be valued as much as conflict management. One of the main reasons for this trend could be that school climate started to be addressed as a structure that influences organizational behavior, teacher-student relationships, and the overall quality of education. Finally, when the data from the post-2020 period are examined, it is noteworthy that both themes were addressed in a balanced manner. Among the 25 studies, 52% focused on “Conflict and Management” and 48% on “School Climate.” This balance suggests an increasing awareness that the organizational structure must be evaluated not only through crisis-time resolution strategies but also alongside preventive and supportive climate elements. Overall, it is seen that the theme of conflict and its management initially came to the forefront in the Turkish educational administration literature, but following 2015, school climate studies began to share this attention, and especially in the most recent period, both themes started to be addressed jointly. This trend signals a transition to a holistic approach that necessitates the evaluation of both the structural and procedural aspects of the school environment.

Conclusion

Although there has been an increase in the number of studies on conflict management in the context of educational administration in Turkey in recent years, the limited number of systematic reviews offering historical and methodological integrity in the field makes this study significant. In this context, articles published within the scope of TR Index were examined in detail in terms of their distribution over the years, methodological preferences, research designs, and thematic focus. In addition, periodical classifications made to make the findings more comprehensible, along with the justifications for these classifications, were clearly presented. The findings of the study reveal that research on organizational conflict management in Turkey has increased over time and that academic interest in this field has grown considerably, especially in the post-2020 period. However, it was determined that the quantitative research paradigm had been dominant for many years and that studies largely relied on measurable data. Nevertheless, it is noteworthy that after 2015, qualitative and mixed-method studies also began to find their place in the field. The findings of the study show that the themes of conflict management and school climate have undergone a transformation over the years, and that especially in the post-2015 period, these two areas have started to be addressed together, indicating a transition toward a more holistic understanding today. This suggests that focusing solely on crisis management in school environments is insufficient, and that preventive and supportive climate elements must also be considered.

Recommendations

- It is recommended that researchers adopt qualitative, quantitative, or mixed-method approaches, as conflict management is a multidimensional issue that cannot be adequately addressed through a single method. These designs allow for both in-depth insight and generalizable results.
- It is recommended that school administrators, teachers, and educational managers and planners not only focus on resolving existing conflicts but also consider preventive factors such as school climate when developing conflict management strategies.
- It is recommended that the scope of this study, which was conducted using the TR Index database, be expanded by incorporating other databases such as DergiPark.

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Conflicts of Interest

No conflict of interest has been declared by the author

Author Contribution

Corresponding author Pınar Küçük Akşit: Conceptualization, data curation, investigation, methodology, writing original draft, review & editing.

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Ethics Approval

In the writing process of the study titled “**Conflict Management in Organizations: A Systematic Review**”, the rules of scientific, ethical and citation were followed; it was undertaken by the author of this study that no falsification was made on the collected data. “Journal of Action Qualitative & Mixed Methods Research and Editor” had no responsibility for all ethical violations to be encountered, and all responsibility belongs to the author and that the study was not submitted for evaluation to any other academic publishing environment.

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Institutional Review Board (IRB) approval of this research is not required.

Data Availability Statement

Anonymized data from this study can be made available on request from pkucukaksit@gmail.com

COVID-19 and livelihoods status of people with disabilities in Northern Nigeria: A mixed-methods

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Abstract: The COVID-19 pandemic has ravaged the entire world with devastating consequences in collapsing global and local economies. PWDs are particularly exposed to the risks of the pandemic as well as to the policy measures meant to address its spread considering their underlying predicaments. This study aims at examining the differentiated impact of COVID-19 pandemic on livelihood status of PWDs in northern Nigeria based a sample size of 3,301 respondents. The study adopts both qualitative and quantitative approaches to data collection and analysis. The paired t-test results established a significance reduction in the respondents' levels of income and numbers of hours of work during COVID-19 pandemic and an insignificant difference between the available landed property and value of livestock owned by PWDs before and after the outbreak of COVID-19. The disaggregated analysis of the impact equally established differing impacts of COVID-19 policy measures across the three geo-political zones. The study argued that COVID-19 policy measures have further exposed PWDs to shocks and cut off their sources of social support without any special arrangements to address their peculiar predicaments. This implicates the need for proactive strategies and inclusive social protection programs tailored towards the needs of PWDs by healthcare and welfare agencies.

Keywords: Disability, livelihoods, welfare; COVID-19, social support, mixed-methods, disaster

Introduction

As the name scientifically and socially implies, Persons with Disabilities (PWDs) face demoralizing live problems and challenges that are differentiated according to peculiar disabilities and special needs of these individuals. In addition to this, various situational factors, such as poverty, environment, culture and social norms and values further compound these persons' life challenges. Natural disasters, expectedly and especially in the absence of functional institutional support mechanisms will only accentuate their 'troubles.' PWDs, historically and contemporarily are often isolated, incarcerated, observed, written off and of course "controlled to a degree probably unequal to that experienced by any other minority group" (Davis, 2006: xv). Socially, the 'identity', stereotype and crisis face by this minority group, arguably leave them on the edge and margin of human social life. In other words, according to Dunn and Burcaw (2013), the prejudice, which is attached to disability groups, contextualizes and marks them as members of a social group subjected to marginalization, discrimination and neglect. Thus, in the context of certain socio-cultural milieu, PWDs' identities could compound their problems by not only exposing their vulnerabilities but putting their lives in danger as well. The case of albino in Tanzania and other Southern African countries are case in point, where

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inadequate or no provision was made for their safety. From all perspectives—livelihood, human rights, public policy, healthcare, housing, social engagement and interactions, cultural multilateralism and civic life—PWDs are not only critically marginalized but also dauntingly vulnerable.

With these dynamic complexities, which are even more conflicted and compounded by institutional and politico-organizational deficit and predicament of developing societies, it means that the everyday life of the PWDs is one of helplessness, uncertainties and arguably often on the brink of ‘death.’ In situations of disasters of war, disease outbreak, flood, draught, earthquake, etc., their lives hang on the balance in the access to all sources of their livelihood—shelter, food, healthcare, social support—become dangerously (in-)accessible. For example, Park, Yoon and Choi (2019:1) report that following the 2017 Pohang earthquake in South Korea, the experience of persons with disabilities showed “absence of an evacuation system..., absence of disability-inclusive disaster information and the absence of disability disaster prevention drills and evacuation.”

If a regional earthquake could expose the lack of policy provisions against the vulnerabilities of PWDs, what could be the situation of these groups in the wake of COVID-19 pandemic that ravaged the entire world. Thus, not only the COVID-19 itself becoming a source of fear and death, but measures to curb its spread have become even more dangerous, in some cases, than the COVID-19 itself. Accordingly, both the COVID-19 and the measures to curb its spread have combined to make life for citizens and especially PWDs, who even in ‘normal times’ find life harrowingly difficult, would be dangerously push to the edge of total surrender to the ‘death’ as will cut-off all their livelihood supplies.

At the early stage of the outbreak of COVID-19, it was assumed to be a great leveller’, i.e. collapsing differences between groups, exposing them to the same risks and bridging inequality in the access to raw sources of livelihood and destroying discrimination. However, according to Sakellariou *et al* (2020:2), the COVID-19 pandemic deepened and exacerbated inequalities, with protection against the risk of infection, access to treatment and impacts of public health measures disproportionately affecting the most disadvantaged populations, including the poor, people in precarious employment, people with chronic conditions and people belonging to ethnic minorities. *Disabled people are particularly exposed to the risks of the pandemic as well as to the measures to address it and their impact*” (emphasis added). The impact of the pandemic could be measured by the magnitude and degree of the effects on livelihoods of factors of disability.

Accordingly, and in specific terms, COVID-19 pandemic mitigating measures and management policies would not only present new challenges and problems, but would also compound traditional ones (such as living in crowded environment, lack of community support) for PWDs, especially in societies with high rate of poverty, such as Nigeria and particularly Northern Nigeria. This research is meant to investigate the extent to which various measures imposed by Nigerian government through the National Centre for Disease Control (NCDC) and Presidential Task Force to mitigate the spread and control of COVID-19 impact the live experiences of PWDs in Northern Nigeria. Further to this, the research would disaggregate such impacts of COVID-19 policy measures on PWDs based on geo-political zones.

There are numerous relevant existing studies on the impacts of the COVID-19 pandemic on PWDs. For instance, Truk and McDermott (2020) looks at the outbreak of COVID-19 and the preparedness, associated isolation and protective measures on people with protective measures, while Audrey *et al.* (2021) focus on infection rate, testing, treatment, and mortality for people with disabilities, on wellbeing of PWDs (Sosencrans *et al.*, 2021; Sheunesu, Ayansola, Tendai & Mandla, 2023;), financial worries, health, and perceived organizational support of PWDs (Moniques *et al.*, 2021), COVID-19 policy measures and livelihoods of PWDs in Northeastern Nigeria (Olarinde *et al.*, 2024) and (Thompson, Chubo-Uzo, Rohwerder & Wickenden, 2021), however, none of these studies attempts to investigate the impact of COVID-19 policy measures on the livelihoods of PWDs except for Olarinde *et al.* (2024) indicating the limited scope of the majority of the existing literature. In the case of Olarinde *et al.*, (2024), the study is limited by its scope and approach. The study only focuses on a geo-political zone in Nigeria and the livelihoods status of PWDs after the pandemic. The present study differs both in approach and focus, the study covers three geo-political zones that made-up northern Nigeria, while at the same time

attempts a comparative analysis of the livelihood status of people with Disabilities before and after the COVID-19 pandemic based on a disaggregated analysis among the three regions. This is of essence to explore to explain the extent to which these measures compound their existing special predicaments, and the efficacy of socio-cultural and institutional strategies put in place to mitigate these challenges *vis-à-vis* ease their differentiated special life situations. The disaggregated analysis is important for a robust policy design that would be all-inclusive, comprehensive, and context specific especially those that would take care of their needs in abnormal times. Aside from this introduction, section 2 reviews existing literature, section 3 dwells on methodology while section 4 interprets and discusses results and section 5 concludes.

Review of Literature

Recent literature provided a mixed and contradictory approach to the understanding of disability. Disability is understood to be impairment, and anything (individual contextual factors, environment or personal) that limits/restricts individual activity and interaction within a society (Gupta, Anne and George, 2021). Wisner (1993) conceptualized PWDs based on a person's ability to effectively discharge ordained human activities. To Wisner (1993) a person whose ability to effectively perform certain ordained activities such as movement, perception, expression, and ability to reason is compromised either by injury, illness or societal limitations, in most cases rely on other for support and in worst cases for survival, is assumed to be disabled. In a broader view, the World Health Organization (2020) defines disability as "any condition of the body or mind that makes it more difficult for the person with the condition to do certain activities and interact with the world around them" (cited in Bernard et al., 2020:1). This shows that a person suffering from impairment has some elements of disability. This perspective underscores the conclusion by the United Nations Convention on the Rights of Persons with Disabilities [UNCRPD] (2006) that persons are considered disabled when they have "long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others" (cited in Mactaggart et al., 2018:1). Globally, 1.3 billion people equivalent to 16% of the world population are having one form of disabilities or the other, while in Nigeria the population of people with disabilities stood at 35.5 million (WHO, 2025; National Population Commission, 2024).

These variations in what constitute disability explain the plethora of different perspectives to the study of disability. Some theories and approaches were developed to address general issues of PWDs (Social model, systems theory of disability, critical disability theory, social Darwinist theory, social constructivism theory of disability, postmodernism theory of disability etc.) and in some cases the theories and approaches have specific practical applications to certain kinds of disabilities such as mechanistic theory of disability and deviance theory of disability.

The critical disability theory is based on anti-liberalism and anti-functionalist trend in the study of disabled people in society. Critical disability theory sees the problem of disabled people as a product of an unequal society (Oliver, 1999). The theory was developed on a different conception of social inequality, access to goods and polarization processes in communities. The main objective of critical theory is centered on how to change and reshape a new and better society. Thus, the theory seeks to explain what is wrong with current social reality, identify the actors that can change it and to formulate available targets of social change. Critical disability is typically concerned with achieving inclusion, equality and autonomy of people with disabilities in society (Sztobryn-Giercuskiewicz, 2017). In essence, critical disability theory opposes traditional assumptions that seek to oppress people with disabilities and violate their rights. The social model of disability on the other hands was developed in Britain by disabled activists from the Union of the Physically Impaired against Segregation (UPIAS). The central concern of the social model was elaborated in a document of UPIAS (1976) called Fundamental Principles of Disability. The basic thrust of social model of disability is that it enables disabled persons to look at themselves in a more positive way, which increases their self-esteem and independence. The model seeks to do away with the notion where disabled persons often feel that they are a burden on family and friends, and a problem for doctors who cannot cure them.

Fundamentally, the social model approach to disability sees the problems as society's barrier, rather than the individual's impairment. To this extent, it enables disabled individuals to take away the blame from themselves and place it on society. Thus, according to Barnes et al (2010:163) it is society "which disables people with impairments, and therefore any meaningful solution must be directed at societal change rather than individual adjustment and rehabilitation." In this regard, the social model of disability tries to empower disabled persons to demand from society to remove all kinds of barriers in their ways. The criticism of the social model is that it is euro-centric and did not take into consideration prevailing welfare conditions in Third World countries. Whereas the welfare level in some advanced liberal democratic countries is high, the same cannot be obtained in poor African countries with low level of welfare. In most African countries, particularly in Nigeria, it is the disabled persons or their families that cater for their immediate needs with little or nothing from the society.

Literature focusing on emergencies and its effects on PWDs are still evolving; however, the consensus among the researchers is that PWDs are barely put into consideration and as such they are mostly affected. For instance, during the SARS-CoV epidemic in France Chevance et al. (2020) attempts to provide policy document that will ensure proper mental health care during the epidemic based on content analysis of medical literature and scientific result in local initiatives. The study concludes that disorders either cognitive or behavioral, psychosocial impairments (including socio-economic living conditions) and old age made people with diagnoses of mental disorders vulnerable to infection during a pandemic, while closure of community health facility during pandemic worsened their case. As a policy response toward reducing the vulnerability of this group of people, Chevance et al. (2020) cited an instance where confederates (PWDs) under compulsory ambulatory care situations, are provided with specific case-management such as home visits to build their resilience to experience associated with lockdown that could trigger mental disorders. Their argument is predicated on the need to overhaul the organizational structure of the mental healthcare system in response to the SARS-CoV-2 epidemic.

Empirically, there are numbers of studies that have looked into relationship between welfare and disability (Foubert, Levecque, Rossem and Romagnoli, 2014; Lin and Lin, 2009) on one hand, and welfare consequences of natural disasters on persons with disabilities (Park, Yoon and Choi, 2019; Mazumdar, Mazumdar, Kanjilal and Singh, 2014) on the other hand. More importantly, studies looking at the impact of COVID-19 pandemic on PWDS are still evolving. Disappointedly, studies specifically looking at impact of COVID-19 measures on PWDS in Africa, particularly in Nigeria are hard to come by after a thorough search of the literature. Investigating the relationship between disability and livelihood opportunities through a comparative analysis Mactaggar et al, (2018) adopted a nested case control study of adults that are both able and disabled as research design. The study used Cameroon and India as case study based on a sample of 4,056 per country. A battery of econometrics techniques in the form logistic and multivariate logistic regression analyses were adopted as methods of data analysis, to compare participation in work between cases and controls stratified by various demographics characteristics like age, sex among others. It was revealed that PWDs in Cameroon have higher percentage of unemployed either in the form of informal economic activities or agriculture while in India lower percentages of cases (PWDs) were not engaged. This relationship persists even when the samples were stratified based on demographics characteristics across all social economic statuses. It was confirmed that demographics features are strong determinants of getting engaged in economic activities.

Relating to natural disasters and the livelihood of PWDs, Park, Yoon and Choi (2019), investigate the impact of 2017 Pohang city earthquake in South Korea on People with disabilities. The study adopts methodologies of interpretive description and Key Informant Interview (KII) using qualitative methods of data analysis. Based on ten key interviewees cutting across care giver, public officers, activists, PWDs with different forms of disabilities, the study confirmed that challenges faced by PWDs were compounded during the period and participants developed some sense of helplessness. It was further confirmed that evacuation during the period was made so easy based on the policies that were put in place, while the PWDs were left to be on their own, and this becomes more critical for those who have mobility impairments due to their exclusion from disaster education and drill which make them less resilience to shocks. The study recommends for a robust geographic database on information about the

location of each PWDs. In a related study, Sakellariou, Malfitano and Rotarou (2020) examine the level of PWDs inclusiveness of government measures to mitigate the spread of COVID-19 in four South American Countries: Argentina, Brazil, Chile, and Peru, using a documentary research design. The analysis of the 72 documents gathered was carried through a framework of analysis, it was found that despite the existence of robust policy measures, the implementation was not all-inclusive and failed to take into consideration the special needs of PWDs. One shortcoming associated with this study has to do with its methodology by relying solely on policy documents that may not be a true reflection of the documents of COVID-19 measures on PWDs.

Methodology

Research design

The study adopts Participatory Action Research (PAR) and design. This method is philosophically underscored and grounded in the realities of the PWDs and leads to action (Lewin, 1946, cited in Asaba and Suarez-Balcazar, 2018). The primacy of PAR, which informs its adoption, is that it is 'community-based' and directly involves local people at all stages of the project (Pain and Francis, 2005). In this context and given the nature of the study, PWDs affected by COVID-19 were involved in this work. In this way, communities affected by the COVID-19 measures served as the source of data for research and form the focal center of the policy formulation and implementation.

Sampling and Sampling Technique

This study adopts mixed methods of data collection and analysis, while multi-stage sampling technique was applied in sample selection. To get the sampling frame for the study, the study adopts 2018/2019 Nigeria Living Standard Survey conducted by National of Bureau of Statistics in collaboration with the World Bank. The survey reported an estimated population of males and females with disabilities in each state in percentages, calibrated to 2019 total population (NBS, 2020: 2). The percentages of disabled males and females' population in each state as reported by the survey, was transformed into actual figures, using 2019 population estimates. This was followed by the summation of total number of males and females PWDs in each state to arrive at an aggregate PWDs figure of 1,423,560 for the 19 states located in Northern Nigeria and this serves as sample frame for the study. To draw a sample from the frame, only PWDs from the age of 18years and above were considered. This is based on the intuition that people with disabilities from age 16 years and below is still dependent and as such not responsible for their own welfare. Although, people within the ages of 65 years and above are also part of non-working population, the categories of people are included in the study because disability is taken to be an increasing function of age.

Table 1a.

Distribution of Respondents Across the Selected States

Geo-Political Zone	Interview			Survey	
	State	KII	FGD	Sample Size	Sample size (%)
Northeast	Bauchi	5	3	378	11.45
	Gombe	5	3	376	11.39
	Yobe	5	3	379	12.03
Northcentral	Kwara	5	3	365	11.06
	Nasarawa	5	3	372	11.26
	Plateau	5	3	409	12.39
Northwest	Sokoto	5	3	392	11.88
	Kaduna	5	3	403	12.21
	Kano	5	3	209	6.33
Total	9	45	27	3,301	100

To scientifically select sample for the study, a multi-stage sampling technique was adopted *inter-alia*. From each Geo-political zone, three states were randomly selected from each zone, giving a total of 9 states. Each of the states selected were stratified into three senatorial districts and two LGAs were samples from each of senatorial districts, giving us a total of 18 LGAs. In each of the LGAs selected, a stratified random sampling procedure was applied to arrive at the final sample that spread across all the domains of disability in proportion to their sizes. Following the World Health Organization's International Classification of Functioning, Disability, and Health, the PWDs were categorized into six domains of disabilities: Hearing, vision, speech impairments, learning disabilities, physical disabilities, and mental disabilities (NPC, 2019). Those with more than one disability were grouped under multiple disabilities domain, giving a total of seven domains. A total of 3,301 respondents were sampled spread across the 18 LGAs. The final sample cut across all the seven main domains in proportion to their different sizes, 45 KIIs and 27 FGDs were conducted (See Table 1A).

Data Collection

For collection of data, this study relies heavily on participatory research tools using structured questionnaires, Focus Group Discussions (FGD and Key Informant Interview (KII). The structured questionnaire was used to obtain quantitative data, the KII and FGD on the other hand were used to collect qualitative data. For the structured questionnaire, the study adopts and modified the Coronavirus Disability Survey (COV-DIS) developed by the University of Michigan Centre for Disability Health and Wellness to generate data about the experience of PWDs during the outbreak of COVID-19 pandemic in the USA. Specifically, the instrument measures how the PWDs go about their daily activities required for daily living, employment and financial challenges, access to medical care, mobility and other general and psychological well-being. All these, which are fundamentally the focus of this study, are likely to exacerbate the condition and livelihood activities of PWDs (Ehrlich *et. al.*, 2020).

Inter lia, this study used both quantitative and qualitative methods of data analysis. This is with a view to complement and corroborates each other. The qualitative data were analysed using methodologies of interpretive description, which involves data immersion, coding, data reduction and interpretation (Hollway and Jefferson, 2000). Descriptive statistics and simple paired t-test were adopted to analyse the quantitative data. The hypothesis will be tested at $\alpha < 0.05\%$ level of significance. Before the data collection exercise, a pilot study was conducted in Sokoto state covering three LGAs located within the metropolis based on a sample size of 120 respondents (40 respondents per LGA). Reliability of the instruments was achieved a test and retest approach was adopted by administering the same set of instruments consistently to the respondents by the trained research assistants for consistency and accuracy. To ensure validity of the instruments, experts thoroughly validated the questionnaires before the pilot study. This ensures that the instruments are relevant and align with the study objectives.

Variables Definitions, Measurement and Procedures.

The Paired t- test, a non-parametric technique, was used to examine the differences in livelihoods status, of PWDs pre-COVID-19 and during COVID-19 periods. Livelihood is conceptualized as a means of living and assets needed to acquire it. Livelihood outcomes are higher income, increased welfare, human dignity, and food security among others (ADB, 2004). Therefore, the probability of an individual achieving improved welfare (livelihood outcome) depends on various livelihood assets. In other words, anything that affects household livelihood assets will automatically affect his welfare. Some of these assets are human, physical and total capital etc. (Gatiso *et al.*, 2018). The focus of this study is on household total capital, disaggregated into financial, natural and social capitals as proxy for level of PWDs welfare. Therefore, to examine whether there is significant difference in the livelihood's status of PWDs before and after the introduction of COVID-19 measures, the total capital (disaggregated into financial, natural and social capitals) available to the household before the outbreak of the pandemic were compared with available total capital at the post COVID-19 pandemic.

Table 1b.

Summary of Variables Measurement

Variable Name	Proxy	Indicator	Measurement
Livelihood Status	Livelihood Asset	Financial capital	Household total income, institutional support and stock of goods and livestock in naira value.
		Natural capital/ total asset	Possession of uncultivated land and other landed properties in naira value
		Social capital	Average working hours per day

Financial capital: This represents household total income and institutional support. The household's income includes available regular household cash income through wage employment, relatively liquid assets like stocks of goods and livestock, while aids, remittances, pension, charity, and other (DFID, 1999), can be categorized as institutional supports coming from Federal, State and Local Governments and Non-governmental organizations. The level of financial capital as an indicator of livelihood's status is measured as sum of household income from wage employment, aids, remittances, gifts, charity, value of livestock and other cash generating assets excluding land and other related assets in Naira.

Natural capital: These include land and other related assets (Nawrotzki, Hunter, and Dickinson, 2012; Gatiso *et al.*, 2018). The outbreak of COVID-19 might have forced people to go out of their way to dispose part of their land and other related properties, thereby, deteriorates the PWDs welfare. The selling of their landed properties and other related assets are predicated on the need to smoothen consumption expenditure and needed to cope with the stress associated with various measures introduced during the outbreak of the pandemic. The possession of uncultivated land and other landed properties (measured in Naira and converted into dollars for international comparison) are used as proxy (see Table 1B)

Social capital: Social capital explains the quantum of social support available to an individual. Glaeser, Laibson and Sacerdote (2001) defined social capital as norms, networks and other related, forms of social connection. The ability to confront poverty and vulnerability by an individual is dependent upon social support in the form of stock of social networks and civil associations available before such individuals (Woolcock, 1998). Various proxies have been used to measure social capital. In line with OECD, social capital is proxy by average working hours. This, we believe, is more relevant to this study. Measures like social distance and lockdown can reduce the support from people enjoyed by PWDs when at work and from medical personnel for those that require medical assistance. Therefore, individuals with little social support will spend lesser hours at work due to lack of support or worsened health status manifesting in inability to work for a longer period.

Ethical Statement

The study obtains ethical approval from the University Research and Ethics Committee (UDUS/UREC/2020/022) and research ethic has been duly followed. A verbal/written consent was obtained from each participant before commencement of data collection exercise.

Results and Discussion

The analysis of the quantitative data commenced with demographic characteristics of the respondents as shown in Table 2. Analysis of the nature of disability of respondents revealed that 25.9% of the respondents have hearing impairments while 9.6%, 10.40% and 32.92% account for respondents with cognitive, speech and physical disabilities respectively. Only 3.94% of the total respondents, equivalent to 127 PWDs are mentally disable while the remaining 540 (16.74%) respondents are visually impaired. The distribution of the respondents as shown in Table 4.1 clearly shows that majority of people with disability in Northern Nigeria are physically challenged while those with mental disability recorded the lowest frequency of 127 out total 3,212 total respondents. Disaggregated distribution of respondents by domains of disability and geo-political zones is presented in Table 2. From the table, the Northcentral and Northeast accounted for the larger percentage of PWDs with cognitive disability, recording 11.6% and 11.3% respectively. In terms of physical disability, the two regions (Northwest and Northcentral) ravaged by armed banditry accounted for the larger percentage of PWDs, 37.8% and 34.34% respectively. This further corroborates the earlier assertion that conflict in the zone could be the likely explanation behind the greater number of people with physical challenges in the two geo-political zones. Northcentral accounted for the zone with large percentage of PWDs with visual impairment followed by Northwest, while those with hearing disability are higher (37.22%) in Northeast.

Table 2.

Disaggregated distribution of respondents according to six domains of disability

Domain of Disability	Geo-political Zone			
	North-West (%)	North-East (%)	North-Central (%)	Total (%)
Cognitive Disability	7.46	11.31	11.58	9.64
Hearing disability	22.73	37.22	17.17	25.85
Speech Disability	8.59	5.48	19.00	10.47
Physical disability	37.80	27.30	34.34	32.89
Mental disability	3.16	4.78	3.74	3.96
Visual disability	15.80	14.09	20.37	16.78
Total				99.46

Source: Author's Computation using STATA 17, 06/05/2023.

In every micro analysis of livelihood status sex and age distribution are critical for policy design and implementation, thus Table 2 presents the distribution of respondents based on age and sex. The table indicates that 1,268 out of the 3,252 PWDs are females while 1,984 were males, equivalent to 38.99% and 61.0% of the total respondents, accordingly. The disaggregated analysis of the gender distribution of the respondents across the three geo-political zones indicates that male accounts for larger percentage of the total respondents in each of the zones with cumulative frequency of 58.64%, 62.77% and 61.32 in Northwest, Northeast and Northcentral, respectively. This result contradicts the National Bureau of Statistics 2022 projected population figures. Nigeria Bureau of statistics ([NBS], 2022) projected female population figure to be 108,432,971, slightly above that of male that stood at 108,350,410. However, Table 3 revealed that the number of disabled males is far above that of female in the North. This is obvious, males are usually exposed to risk more than their women counterpart. Females are confined to the corner of their homes in Northern Nigeria, while the males (in most cases husband) are solely responsible for daily needs of their family. In addition, in a conflict infected communities, the probability of male either being a victim, or an actor of conflict is higher compares to that of female. This and many other reasons might be attributed to the higher percentage of male PWDs in the study area.

Table 3.

Distribution of Respondents by Age and Sex

Age of the respondent						
	18 - 35 years	36 - 50 years	51 - 65 years	66 and above	Total	Total (%)
Zone						
North-West						
Female	229	158	21	6	414	41.64
Male	219	280	70	18	587	58.64
Total	448	438	91	24	1,001	100
North-East						
Female	238	131	37	21	427	37.23
Male	389	219	73	39	720	62.77
Total	627	350	110	60	1,147	100
North-Central						
Female	255	121	31	20	427	38.67
Male	329	253	65	30	677	61.32
Total	584	374	96	50	1,104	100
Gand Total						
Female	722	410	89	47	1,268	38.99
Male	937	752	208	87	1,984	61.0%
Total	1,659	1,162	297	134	3,252	100

Source: Author's Computation using STATA 17, 06/05/2023.

The age distribution of the respondents is equally presented in Table 3. The raw data presented in the table indicated that 722 respondents were female within the age bracket of 18 -35 years and 937 were male of the same age bracket. For those between the ages of 36 – 50 years, 410 were females and 752 were males, while for those between the age bracket of 51 – 65 years, 89 were female and 208 were males. Overall, 86.7% of the total respondents fall within the age bracket of 18 – 50 years while 23.3% were 51 years and above. This implies that the majority of the PWDs are within working age. Most disturbing is the fact that PWDs within the age bracket of 18 – 35 years recorded the highest frequency across all the three geo-political zones in the North. The Northeast takes the lead with total frequency of 627, followed by Northcentral and Northwest with a count of 584 and 448 respectively. This has serious negative implications on productivity and development of society.

Table 4.

Distribution of Respondents based on Educational Attainment by Zone

	No school attended	Primary education	Qur'anic education	Secondary education	Tertiary education	Grand Total
North-Central	231	194	200	299	208	1132
North-East	156	156	353	299	187	1151
North-West	221	125	307	224	126	1003
Grand Total	586	475	860	822	521	3286

Source: Author's Computation using STATA 17, 06/05/2023.

In terms of educational attainment, Table 4 revealed that the Northeast recorded the larger number of respondents with Qur'anic education (religious education) followed by Northwest. From the table, 353 respondents from the Northeast had Qur'anic education, while in the Northwest and Northcentral, 307 and 200 respondents had Qur'anic education respectively. This established the dominance of Islamic religion in the region. Overall, the Northeast has the largest percentage of educated respondents by

adding those with at least Qur'anic education up to tertiary education. The Zone has 995 of its respondents' with at least Qur'anic education equivalent to 32.30% of the total respondents, followed by Northcentral with 27.42% and Northwest recording 23.79%. This implies the majority of PWDs in Northeast are more educated than their counterparts in the other two geo-political zones, hence expected to have a better livelihood status if education is taken to be significant determinant of livelihood status.

Examining the impact of COVID-19 policy measures on livelihood status of PWDs in northern Nigeria, a simple paired t-test was conducted. To investigate the rate at which the implementation of these measures impacted the financial capital of PWDs, we compared the average level of income before and after the COVID-19 outbreak using both box graph and simple paired t-test, the results are as presented in Figure 1 and Table 4, respectively.

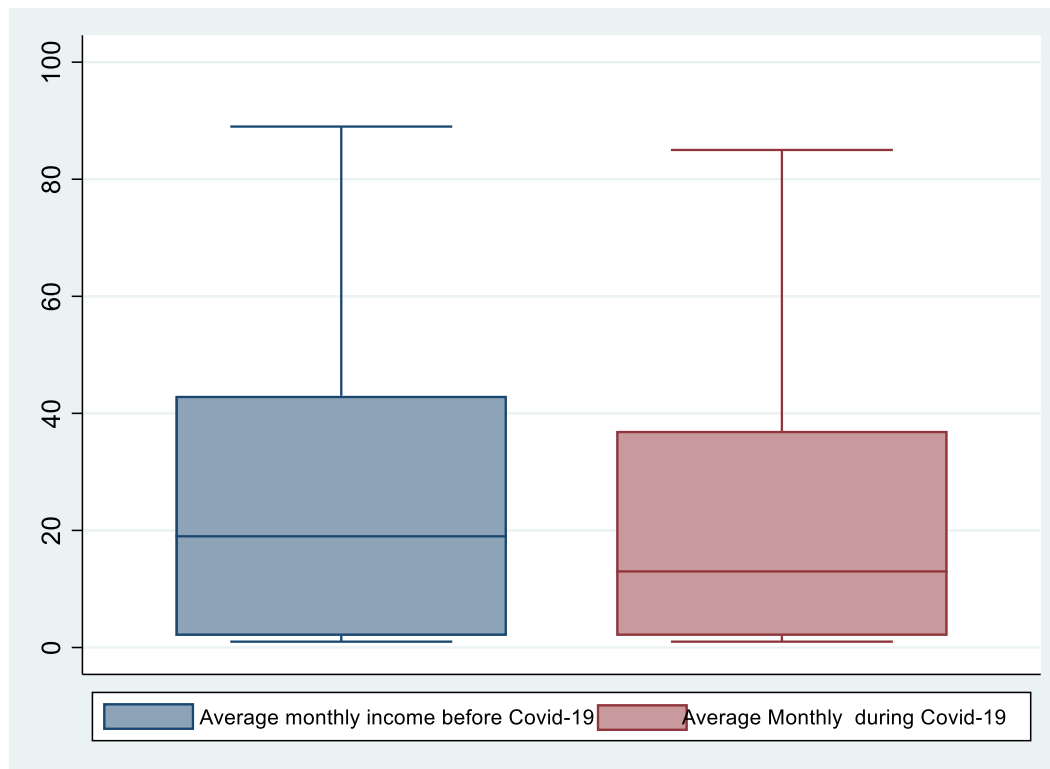


Figure 1. Average monthly Income of Respondents before and after COVID-19

Author's Computation using STATA 17, 06/05/2023.

From the figure, it could be concluded that the average monthly income before the outbreak of COVID-19 is higher than the mean income during or after the pandemic. Before the pandemic, the median monthly income indicated by the line inside the blue box appears to be around ₦20,000, while during or after the COVID-19 the average monthly income (the line inside the red box) has reduced by ₦10,000 to around ₦10,000. The box graph further revealed that the interquartile range (IQR) between the 25th and 75th percentiles before COVID-19 is wider, indicating more variability in income distribution. It ranges from about 10 to 40, however during and or after the COVID-19 IQR becomes narrow and revolves around 5 to 30, indicating a reduction in the the level of income inequality compared to before COVID-19. Therefore, it could be concluded that the level of income before COVID-19 recorded higher values, but the higher level of inequality compared to the level of income during and after COVID-19, the average monthly income is lower, but with a reduction in inequality gap, thus COVID-19 is a leveler. The qualitative data obtained during the KII and FGD further corroborates the above findings when they noted that:

The restriction of movement limits the extent at which people move around to make a living. Under this situation, disability persons are most affected. Because in the first place they do not have the ability to earn income as such they rely on charity from other members of society that earn income through various economic activities, but these people are also under lockdown, as such our sources of income have been affected. On the other hand, the pandemic has disrupted businesses including that of our members (PWDs) to the extent that it negatively affected the working capital of our businesses leading to collapse of business.... But for those that are government workers, they were relatively better. (KII, Sokoto 2).

[...] Economically, those helping us could not assist us anymore as they used to do before the pandemic, due to their inability to go to work/shops during the period. You vividly noticed that such a person sympathises with you (PWD) and his intention to help or give alms is clear, but since he also finds it hard to feed his family, how do you expect such a person to assist others that are in need? We don't have other sources of income than begging (FGD Kwara; FGD Plateau 2)

Therefore, it could be concluded that policy measures such as lockdown, restriction of movement and social distancing have greatly affected access to source of income by PWDs, majority of whom rely on social support from the philanthropist.

To provide statistical evidence beyond the descriptive statistics using box graphs we run a simple t-test to ascertain whether there is difference in average monthly income of respondents before and after the COVID-19 pandemic. Table 5 revealed that the mean difference in income is about 5.62 with a significant t-value of 12.943 at 1%. This implies that the difference in mean monthly income before and after COVID-19 is statistically significant and therefore it could be concluded that there is a significant difference between monthly income before and after COVID-19. The income before the outbreak of COVID-19 is higher than the level of income during COVID-19 with a mean value of 5.6. In other words, the outbreak of COVID-19 pandemic and policy measures meant to curb the spread of the virus have negative and significant impact on average income of the vulnerable household in northern Nigeria in line with Cheshire (2020).

Table 5.

Paired t-test on Average Monthly Income Before and After COVID-19

Paired t test		Mean	N	Std. dev.	Std. error				
Before		26.5196	2799	25.8124	.4897				
During		20.8996	2799	22.6696	.4300				
Paired differences									
Paired t-test				Std error of the mean	95% Confidence interval of the difference		t	df	P(2-tailed)
					Lower	Upper			
Before	-	Mea	Std.	0.4342	4.7686	6.4714	12.94	2778	0.0000
During		n	dev.						

Author's Computation using STATA 17, 06/05/2023.

Based on a sample of 312 PWDs in Bangladesh and Kenya, Cheshire (2020) concludes that COVID-19 has negatively affected the lives of PWDs. He further noted that 92.0% of the respondents identified factors like limited transport, restricted movement, lack of available necessities, low income, and lack of jobs as the major challenges during the pandemic. As noted by Cheshire (2020), this study also finds

that mobility restriction and lockdown jointly determine the hours of work per day, proxy for social capital as shown in Table 6.

Table 6.

Two-Sample Paired t-test on Hours of Works per day before and during COVID-19

Variable	N	Mean Hrs of Work	Std. dev.	Confidence Interval
Hours of work before COVID-19	2729	15.96336	16.42974	15.34666 - 16.58005
Hrs. of Work during COVID-19	2727	8.251558	8.19	7.944032-8.559085
Combined	5,456	12.10887	13.54191	11.74946-12.46828
Diff	7.711798	.3515189	8.400915	
Diagnostics				
t-Value		21.94 (0.000)		

Source: Author's Computation using STATA 17, 06/05/2023.

The results revealed that there is a significant difference in hours of work before and during the pandemic as suggested by a significant t-value of 21.94. From the table, the mean of hours of work before COVID-19 was approximately 15.96 hours, while during COVID-19, it significantly reduced to 8.25 hours. A further look at the table indicates that the mean difference between the two periods is 7.71 hours. This implies, on average, PWDs worked 7.71 fewer hours per day during COVID-19. The significant decline in the hours of work per day during COVID-19 compared to before the outbreak of COVID-19 suggests a significant negative impact on the livelihood's status of PWDs due to reduced working hours that culminate into loss of income/reduction in income. Thus, various policies such lockdown measures, social distance and mobility restrictions have negatively affected the available social capital of PWDs in the study area. Expectedly, significant percentage of PWDs relies on support from others to carry out their daily activities, however the social distance policy cut off this support and principle of survival of the fittest as argued in Social Darwinist theory.

The impact of the policy meant to curb the pandemic natural capital (total asset) measured by worth of landed property and available livestock was also examined. It was found that COVID-19 policy measures have not significantly affected the worth of landed property owned by PWDs based on an insignificant t-value of -0.9699 as shown in Table 7. This implies that there is no significance difference in the value of landed property owned by PWDs before and during the pandemic. This is not surprising, a larger percentage of PWDs in northern region survive based on transfer payment such charity obtained through support that virtually goes into consumption and health expenditures.

Table 7.

Simple Paired t-test on Value of Landed Property Before and During COVID-19

Paired t test		Mean		N	Std. dev.		Std. error		
Before		37548.02		2356	270159.1		5565.87		
During		45622.25		2358	300564		6189.63		
Paired differences									
Paired test	t			Std error of the mean	95% Confidence interval of the difference		t-value	df	P(2-tailed)
		Mean	Std. dev.		Lower	Upper			
Before	-	8324.5	8245.6	-24394.05	33426.99	49746.71	-0.9699	2778	0.3321
During									

Author's Computation using STATA 17, 06/05/2023.

In support of the above, a respondent acknowledged that they do not have any property to fall upon in the event of shocks because they depend on charity. In his own words, he narrated thus:

I am the *Sarkin Guragu* (physically challenged) here in Kwara state. In fact, during the period of lockdown, we find it very hard to feed because we could not even go to the streets to beg for financial or food assistance..., even we do not have any property to dispose to smoothen our consumption. From all indications, no one is in a terrifying situation than us (PWDs) and we do not get any support from the government. It is apparent that we have suffered, and we pray to Almighty not to let such (pandemic) happen again (KII 8, Kwara).

A further investigation into the effect of COVID-19 policy measures on natural capital or total asset of PWDs using another proxy—value of available livestock—revealed a slight decreased in available value of livestock after COVID-19 (14.96 before and 13.89 after), with a mean difference of 1.07 as shown in Table 8. However, the t-test indicates that this difference is not statistically significant, indicating statistically not significant evidence to suggest that the value of livestock changed before and after COVID-19 based on the sample data.

Table 8.

Simple Paired t-test on Value of Livestock before and during COVID-19

Paired t-test		Mean	N	Std. dev.	Std. error				
Before		14.96	2441	26.94	.5451				
During		13.89	2419	24.85	.5052				
Paired differences									
Paired t-test			Std. error	95% Confidence interval of the difference		t	df	P(2-tailed)	
	Mean	Std. dev.		Lower	Upper				
Before-During		.7436	2.5272	-0.3883	13.6965	15.1545	1.438	4858	0.0752

Source: Author's Computation using STATA 17, 06/05/2023.

From Table 7 and 8, it could be concluded that COVID-19 policy measures have not significantly affected the livelihood of PWDs proxy by natural capital, however, it significantly impacted the financial

capital and social capital measured by mean income and numbers of hours of work per day. Thus, on average, the livelihood status of PWDs has been significantly affected.

To elicit the differing impact of COVID-19 policy measures across the three geo-political zones, a disaggregated analysis was conducted. Figure 2 presents a comparison of livestock values in each of the three geo-political zones (North-West, North-East, and North-Central) in northern Nigeria before and during the COVID-19 pandemic.

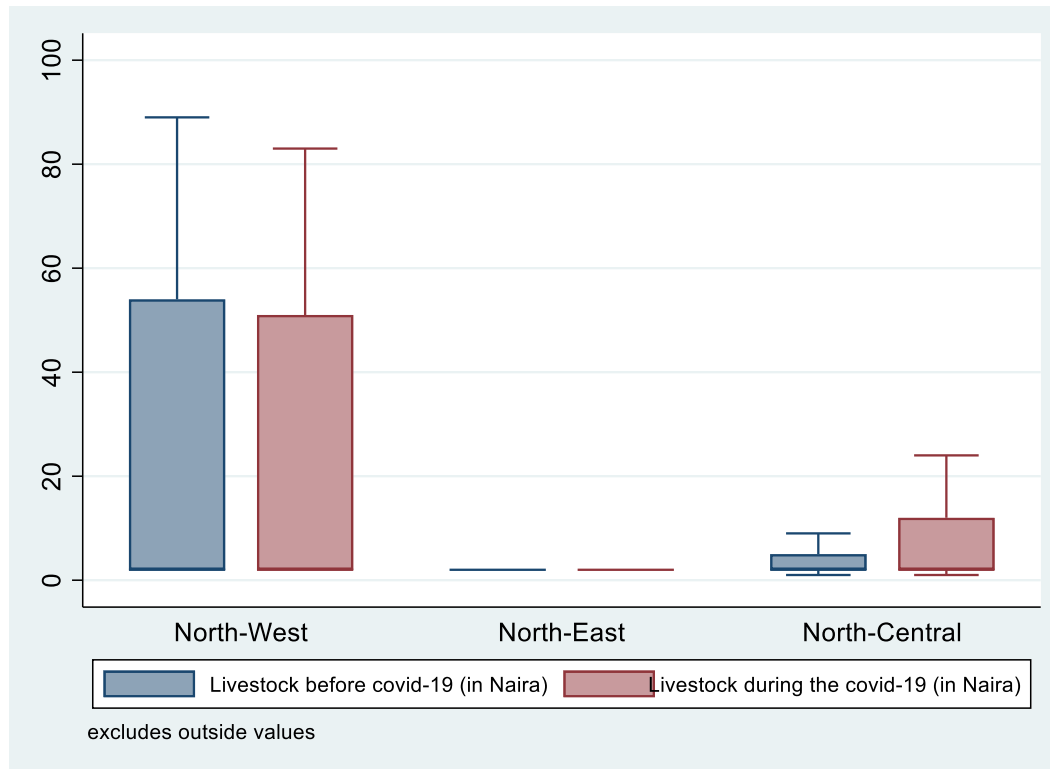


Figure 2. Disaggregated analysis of Livestock values before and after the COVID-19 pandemic

Source: Author's Computation using STATA 17, 06/05/2023.

Before the COVID-19 pandemic, the average livestock value in the Northwest was higher compared to the period during or after COVID-19. In addition, the interquartile range indicates a wider spread of livestock values. However, during COVID-19, there is a decline in the average value of livestock, while the interquartile established a reduction in the overall livestock value and its variability. Contrastingly, Figure 2 further revealed a very low livestock values in northeastern Nigeria, in both periods. This implies an insignificant difference in the values of available livestock during or after the pandemic compared to pre-pandemic periods, hence the pandemic did not significantly impact livestock value in this region. Surprisingly not, earlier before the outbreak of COVID-19 pandemic, the whole of northeastern states (particularly Adamawa, Borno, Yobe and Taraba States) have been ravaged by Boko-Haram insurgency and ethnic conflicts, resulting in displacement and disruption of sources of livelihoods. As a result, majority of households including PWDs have been displaced long before the outbreak of COVID-19, many have abandoned livestock farming as an alternative source of income due to conflict that makes the environment unsafe for grazing activities, while those with livestock have sold them long before the outbreak of COVID-19 as a coping strategy.

The situation in Northcentral is seemingly difference from the two other regions based on the revelation from Figure 2. The figure revealed that there is an increase in both the median value and the interquartile range, suggesting that livestock values have risen during the pandemic, with a significant increase in livestock values compares to pre-COVID-19 era which indicates a relatively low median livestock value

with a narrow interquartile range indicating less variation in livestock values. Thus, there is a regional difference in the impact of COVID-19 on livestock values. The North-West region experienced a notable decrease in livestock value, while the North-Central region saw an increase, however, the North-East region's livestock values remained largely unchanged.

Overall, examining the impact of COVID-19 policy measures using financial capital, social capital and natural capital/total asset measure by available landed property and value of livestock, the study could only established a significance reduction in the respondents levels of income and numbers of hours of work during COVID-19 pandemic compared to their level of income before the outbreak of COVID-19 in Northern Nigeria, while there is insignificant difference between the available landed property and value of livestock owned by PWDs before and after the outbreak of COVID-19. Surprisingly not, People with Disabilities have been subjected to series of livelihood challenges without adequate provision by the government for their support resulting in widening income gap between the able and the PWDs. No adequate provision has been made to assist this vulnerable group to overcome their challenges. Due to poor sources of income, which in most cases, comes through charity, just enough to meet their consumption needs the PWDs either have low of saving or at the extreme zero saving, as such their level of asset in terms of landed property or livestock is usually very low. Therefore, during shocks or stressors just like COVID-19 pandemic, this vulnerable group has nothing to fall upon for resilience, and as such they are the worse affected group.

The worsening impact of COVID-19 pandemic policy measures compounded by the existing predicaments of PWDs make government interventions a critical step in mitigating the effects of the pandemic not only on vulnerable households but also on PWDs. During this period, governments at all levels including Non-Governmental Organizations introduced social security policy such as food transfer, Conditional Cash Transfer (CCT), equipment support, free medicines among others, with the objectives of protecting and preventing households from the negative impact of the shocks. The availability and or accessibility of these social supports by PWDs and their adequacy were analysed. The results, as revealed in Figure 3, show that food distribution, among many others, recorded the highest frequency, followed by cash transfer. During the pandemic, the respondents seem to have access to food distribution specifically from the state government. Next to food distribution is CCT support provided by the Federal Government through the National Social Protection Agency during the pandemic, however majority of PWDs find it difficult to access this support due to lack of bank account poor level of education needed for online application. A respondent noted that:

Very few PWDs got some social support during the lockdown. This is because the application is online and poor internet facilities frustrated majority of our people, Also, the means of communication were so poor that many targeted beneficiaries were not aware of the programmes, as such many could not apply for support. For those that were able to register, access to support becomes difficult due to physical distances (COVID-19 protocol) resulting in long queues which made it more difficult for PWDs and no special provision for PWDs. In such situations, how can a blind person do or disable with spinal cord injury gain access. Therefore, it is very hard for you to see more than 10 PWDs benefiting from support (KII 6, Sokoto).

... access to food support is zero. The government on its side did not help matters, this is because when the palliative came, PWDs were not favourably considered. However, on the issue of distributing the palliatives, community leaders were charged with responsibilities of distributing palliatives to targeted beneficiaries, but these leaders failed to consider members of PWD group. This was based on the belief that the group has gotten its own special allocation from the government, but no one knows where these palliatives for PWDs were being distributed, so PWDs end up without getting support (KII 3, Kaduna).

The above is in line with the conclusion Hillgrove et al. (2021) that PWDs experience less access to health, education, and social services, while Smith (2011) evidenced that more than 70% of the PWDs find it difficult to access disability specific health services, resulting in declining level of their welfares.

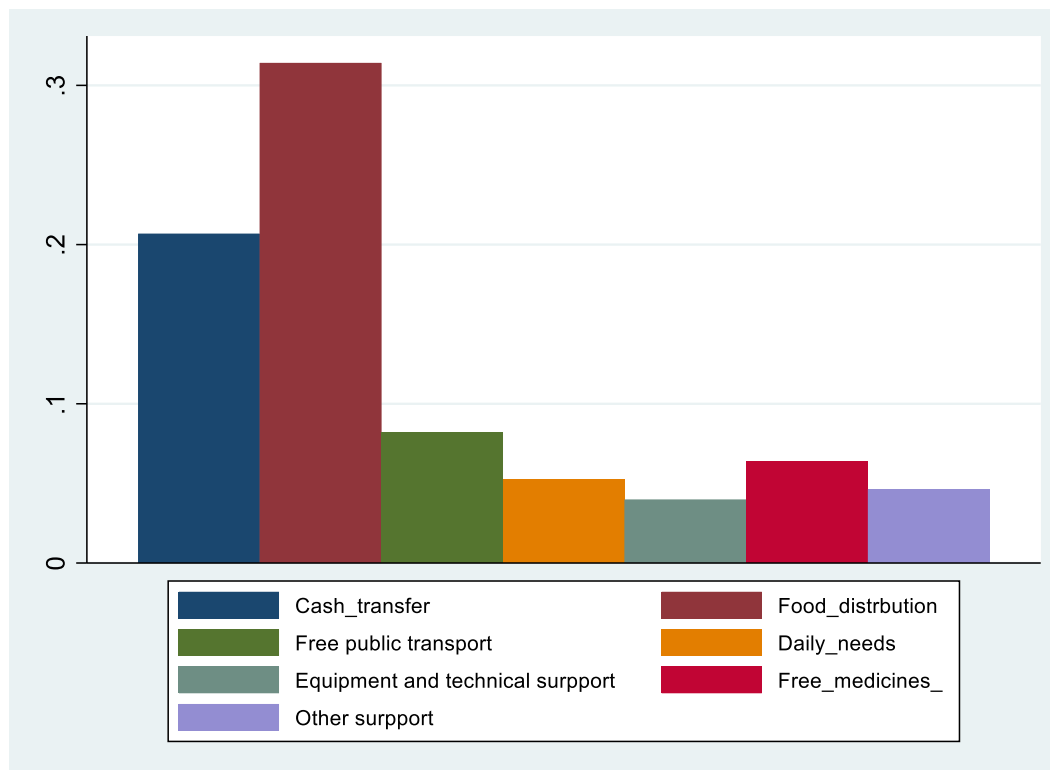


Figure 3. Distribution of Responses on Availability of Social Security during COVID-19

Author's Computation using STATA 17, 06/05/2023.

Other types of support are free public transport and medicines implemented by the federal and some state governments during the pandemic. However, the percentage of PWDs that were able to access these supports remain insignificant. For free public transport, about 10% benefited from the support while about 5% enjoyed the daily needs support. However, equipment support such as wheelchairs, bicycles, and cane sticks among others recorded the least percentage of responses of (less than 5%) even though majority of people with disabilities require medical support and equipment support for improving livelihood status. This is predicated on the fact that most PWDs have one or two underline ailments that require medication on a sustainable basis while some of them such as those with spinal cord injuries, the physically disabled persons could not engage in any activities without equipment support. Although, some respondents that were not having any underlined ailment and fortunate not to fall sick during the pandemic could not really confirm the difficulty involve in accessing medical support but that were sick share their experiences during the pandemic as narrated below:

[...] on medication there is one association called Nana Khadijah Centre they promised to support by giving us a card to be used to off-set our hospital charges and that of our immediate families like children, but nothing was giving, we are just with the card. , I was with a friend who is also a PWD, and she is ill. There is another member of PWDs who was recommended to undergo surgery, and she approached the Centre, but she was denied access to the Centre (**KII 12, Sokoto**)

On the medication, we also experienced great challenges because even if you have money to buy drugs, medical stores were shutdown, no matter the severity of your sickness, you cannot go to hospital for any medical support and the government has

no provision for us. Even when they started opening their pharmacy during the gradual relaxation of the lockdown, the problem still persists because in our case we need to get someone to help us to get drugs you needed, but such a person is afraid of having contact with us (KII 4, Sokoto).

[...] Similarly, he narrated the case of those with visual disability that needed support of others to enable them access medications but due to COVID-19 protocol of physical distances and shutdown of public places like medicine stores and health institutions they could not access medication or medical care, and government failed to make provision for them. Other people who needed support and suffered during the outbreak of COVID-19 are Albinism. For them, access to skin checkups and care (sun cream lotion) was very difficult to get and totally inaccessible. Thus, COVID-19 outbreak drastically affected Albinos (KII 7, Kaduna)

Above explains the predicament of PWDs during COVID-19 due to inadequate social support from the government during the pandemic, and some of them resorted to the use of traditional medicines to cure some illness which further complicates their health issues.

Conclusions

The study is an analysis of the impact of COVID-19 pandemic on livelihoods status of People with Disabilities in Northern Nigeria based on a mixed-methods approach. The study administered 3,301 structured questionnaires across the three geo-political zones in northern Nigeria. The study used both descriptive statistics and simple paired t-test to analyze the quantitative data while content analysis was used to analyze qualitative data. The study will add value to the existing literature on the livelihoods impact of COVID-19 pandemic. The study underscores how policies measures meant to cushion the impact of disasters could produce unintended negative outcomes due to lack of inclusivity. For instance, the lockdown policy and restriction of movement have further exposed PWDs to shocks and cut off their sources of social support, while special arrangements were not put-in-place for those that survive on medications as earlier established by Chevance et al. (2020) and Olarinde et al., (2024). To best support this vulnerable group during disasters, policy makers should consider various proactive strategies and implement inclusive social protection programs to protect and prevent the vulnerable households from worsening livelihood status. The disaggregated analysis of the impact equally established differing impacts of COVID-19 policy measures across the three geo-political zones and calls for region specific policy and programs both in design and implementation. In potential future pandemic, a special taskforce (with significant numbers of PWDs as members) for diseases control should be set-up while social support for this vulnerable group should be needs specific.

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Conflicts of Interest

No conflict of interest has been declared by the authors.

Author Contribution

Corresponding author Muftau Olaiya Olarinde and authors Suleiman Yusuf B. Kura, Ismaila A. Danjuma, Maimuna U. Rabo, Abubakar Lawan: Conceptualization, data curation, investigation, methodology, writing original draft, review & editing.

Declaration of Competing Interest

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Ethics Approval

In the writing process of the study titled “**COVID-19 and livelihoods status of people with disabilities in Northern Nigeria: A mixed-methods**”, the rules of scientific, ethical and citation were followed; it was undertaken by the author of this study that no falsification was made on the collected data. “Journal of Action Qualitative & Mixed Methods Research and Editor” had no responsibility for all ethical violations to be encountered, and all responsibility belongs to the author and that the study was not submitted for evaluation to any other academic publishing environment.

Institutional review board (IRB) approval

Usmanu Danfodiyo University Sokoto Research and Ethics Committee approved this research project under the number and date UDUS/UREC/2020/022.

Data Availability Statement

Anonymized data from this study can be made available on request from Olarinde.muftau@udusok.edu.ng

Black women's leadership, persistence, and personal power

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Abstract. Black women are marginally represented in leadership positions at institutions of higher education in the United States. Black women in higher education leadership are confronted with microaggressions, stereotype threats, isolation, marginalization, and assumed incompetence, challenging their ability to persist in postsecondary service. The purpose of this research was to explore how Black women administrators at public colleges and universities in Florida have sustained their administrative roles and to evaluate whether their leadership persistence is upheld by personal power. The study is significant because the voices of a marginalized population are amplified, and insights into how Black women develop and leverage personal power to overcome internal and systemic barriers are provided. An explanatory sequential mixed methods design was adopted for the research. Spearman's rho correlational coefficient was used to test the hypothesis. The Diamond Power Index® (DPI) survey collected quantitative data and semi-structured interviews captured qualitative data. The sample included 68 Black female administrators in public colleges and universities in Florida.

Keywords: Leadership persistence, personal power, Black women, higher education

Introduction

Black women are marginally represented in leadership positions at institutions of higher education in the United States. Literature aptly details steadfast adversities that challenge Black women seeking to ascend beyond traditional faculty and middle management roles in higher education (Chance, 2020; Davis & Maldonado, 2015; Townsend, 2019; Verrier, 2021). Black women have admitted to experiencing limited mentorship and promotion opportunities, tokenism, invisibility, and race fatigue syndrome while attempting to advance their careers (Chance, 2022; Coker et al., 2018; Davis & Brown, 2017; Hinton, 2010). Scholars recount contemporary experiences of Black women professionals in institutions of higher education often highlighting the overt and covert injustices that have been funneled from generations of oppression and marginalization (Evans, 2007). For example, although segregation and the exclusion of Black people from institutions of higher education have been legislatively diminished, Black women continue to suffer ostracization and backlash manifested through racism, genderism, ageism, colorism, and the more recently acknowledged texturism which is discrimination resulting from the texture of one's hair (Asare, 2023; Chance, 2022; Hinton, 2010; Mayo, 2019; Williams, 2018). Notable scholars like Kimberlé Crenshaw and Black feminist thought pioneer Patricia Hill Collins acknowledged the attribution of social identities to the ongoing oppression of Black women

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in American society (Collins, 2009; Davis & Brown, 2017; Townsend, 2021). Black women are acquainted with the pangs of discrimination and adversity because they are categorized under two historically oppressed social identities-- "woman" and "Black." Scholars describe this conundrum as the "double jeopardy," wherein gender and race biases collide to create simultaneous oppression (Chance, 2022; Gause, 2021; Townsend, 2021).

Gender disparity in the U.S. is a longstanding issue in many professional industries. In business, there are notably fewer women in leadership and senior executive positions than men (Ballenger, 2010; Mayo, 2019). Women occupy only 15 percent of science, technology, engineering, and mathematics (STEM) occupations (Chandler, 2020). Although women's presence in these industries has increased dramatically since the mid-20th century, and the female population now makes up 51 percent of the college-educated U.S. workforce, the advancement of women professionals into managerial and senior leadership roles has been glacial (Bibbs, 2019; NASA, 2023; U.S. Bureau of Labor Statistics, 2023).

The overlapping complexities of being Black and female, intermingled with the historical racial relegation of African Americans, create a double bind of negative experiences to be navigated by Black women in social and professional spaces (Townsend, 2021). Nevertheless, many Black women have adopted mechanisms for negotiating the harsh realities of their workplaces. Coping measures that congeal to form social support, mentorship, leadership development programs, resilience, purpose, and balance have helped women endure in times of trouble (Anderson, 2022; Coker et al., 2018; Jernigan, 2019; Nickerson, 2020; Roberts et al., 2018; Sales et al., 2020). Although several intrinsic and extrinsic factors are associated with Black women's leadership perseverance, their perceptions, development, and uses of personal power as a tool to combat adverse professional experiences and persist in executive roles are missing from contemporary scholarship.

Over the years, some Black women took on academic leadership roles through their relentless persistence and eventual career advancement within historically Black colleges and universities (HBCUs), while others proceeded with more entrepreneurial endeavors to establish schools specifically for African American students (Coker et al., 2018). In 1904, trailblazer Mary McLeod Bethune became the founding president of the Daytona Educational and Industrial Training School for Negro Girls, later named Bethune-Cookman University (Coker et al., 2018; Evans, 2007; Nickerson, 2020; Richardson, 2009). Some 50 years after Bethune's accomplishment, Willa Beatrice Player was selected as the first president of Bennett College, a four-year liberal arts college for women at the time of her appointment (Nickerson, 2020). Although Bethune and Player are celebrated and praised for their remarkable accomplishments, Black women have faced barriers and adversities since their early days as students and professionals within the academy that overtly and covertly perpetuated their oppression (Evans, 2007; Webster & Brown, 2019).

Racism, sexism, tokenism, favoritism, and invisibility are recognized barriers in literature specific to the experiences of Black women educators and administrators (Chance, 2022; Corneille et al., 2019; Sinclair-Chapman, 2019; Webster & Brown, 2019). Black women frequently find it difficult to circumvent these obstacles while enduring promotional denials, lack of trust, race fatigue, overworked, inequitable compensation, and disproportionate workloads (Loveless-Morris & Reid, 2018; Tevis et al., 2020). Furthermore, a lack of mentorship, strong social support, and inner stability make it difficult for Black women to trod the rocky grounds of administration in academia (Bibbs, 2019; Chance, 2022; Nickerson, 2020).

Understanding the causes of underrepresentation among Black women leaders in the academy warrants an examination of the impact of identity politics on the retention of Black women administrators. In Townsend's (2021) phenomenological study of the experiences of five African American female administrators in higher education, the term "identity politics" was used to generalize issues with Black women's difficulty showing up as their authentic selves, their dealings with microaggressions, and the added work responsibilities Black women assume to ensure minorities are represented in various campus

activities, also known as Black Tax. Townsend found identity politics to be a strong deterrent to Black women's continuation in academic leadership roles and recommended that higher education institutions implement retention practices, acknowledge the experiences of Black women faculty and administrators, and dedicate time to developing a campus culture that attracts and retains Black women faculty.

The leadership development of Black women is impeded by factors that supersede their control. Through auto-ethnographic accounts, Logan and Dudley (2019) recalled the experiences of two Black women leaders in higher education as they navigated the path to leadership and the maintenance of those leadership roles. Logan and Dudley pay particular attention to the gap in literature addressing the intersection of race and gender and how these factors impact the leadership development of Black women. Findings revealed that many Black women leaders are motivated by a desire to achieve social justice. Additionally, Black women leaders reported that the support they received from spirituality, emotional intelligence, self-care, and interpersonal relationships enabled them to persist in their roles. Moreover, Black women leaders were often hindered by discriminatory hiring practices and limited access to professional networks. Logan and Dudley recommended that institutions recognize the leadership potential of their Black female employees, support their efforts in leadership, promote inclusive environments, review hiring practices, and dismantle White male hegemonic structures that stymie Black women's succession in the academy.

Methodology

A mixed methods research design with an explanatory sequential approach was employed for the study. Explanatory sequential is a mixed methods design called a qualitative follow-up approach (Morgan, 2014) in which a researcher begins with a quantitative phase and proceeds to a qualitative phase based on the explicit results of the quantitative phase in order to explain the initial results based on mechanical "what" question and its numerical results in more depth based on humanistic "how" and "why" questions. The aim of the quantitative approach based on positivism is to test pre-determined hypotheses and produce generalizable results. These studies are useful for answering more mechanistic 'what?' questions. Qualitative studies based on post-modernism seek to provide illumination and understanding of complex psychosocial issues and are most useful for answering humanistic 'why?' and 'how?' questions. According to Creswell (2015), mixed method approaches to conducting research are gaining popularity and credibility in the sphere of scholarship and provide a means of responding to a research problem in a more robust way than could be accomplished using a single method. Furthermore, in addressing inquiries related to Black women leaders in the academy, Richardson (2009) promoted mixed method studies that analyze data from interviews and surveys, while Bean (2021) suggested that mixed method research be conducted in varied academic settings, such as private and public institutions, as the outcomes could contribute to more comprehensive views of women's leadership. The interpretive paradigm based on post-modernism is compatible with qualitative strand of mixed method research because according to hermeneutic assumption, it utilizes social science methods to study subject areas: face to face interview, participatory observations, real-life documents, focus group interviews based on knowledge nature of individual reconstructions coalescing around consensus (Guba & Lincoln, 2004; Gunbayi & Sorm, 2018; Wilson, 2002). The positivist paradigm leads inevitably to objective, quantifiable methods, the interpretivist paradigm points to methods that involve a qualitative inquiry-researcher and participant talking together, constructing a new reality together (Gunbayi, 2020).

Quantitative data was collected through the Diamond Power Index® (DPI), an 80-item self-assessment. Qualitative data was captured through semi-structured, one-on-one interviews. The functionalist paradigm based on post-positivism is very compatible with the quantitative strand of mixed methods research because according to the realistic assumption, it utilizes natural science methods to study its subject areas: questionnaire, statistical analysis, test, measurement based on knowledge nature of nonfalsified hypothesis that are facts of law (Guba & Lincoln, 2004, Gunbayi & Sorm, 2018). When an objective approach based on knowledge nature of verified hypothesis that are established as facts of law

is used in the quantitative strand of mixed methods research, it can be stated that radical structuralist paradigm or functionalist paradigm and technical interest guide the quantitative aspect of the research which becomes realist, post-positivist, determinist and nomothetic.

Control for Researcher Bias

A key approach to controlling researcher bias during this explanatory sequential mixed methods study was to engage in bracketing. Bracketing requires the researcher to set aside personal experiences and preconceptions to permit fresh knowledge about the phenomenon to enter the consciousness (Bibbs, 2019). In other words, the researcher approaches the phenomenon with an open, impressionable mind. As described by Moustakas (1994) and Creswell and Poth (2018), the process of epoche, or bracketing, requires the investigator to describe their own experiences with the phenomenon and eliminate their views from consideration before engaging the experiences of the study participants.

To understand the phenomenon of personal power from the perspectives of the research participants, the investigator will engage in ongoing reflection throughout the study and document experiences with personal power as a Black woman serving in the capacity of faculty and administrative manager at a predominantly white public college. During the data collection and analysis processes, a separate journal was used to document reflection, maintain objectivity, and capture any emotions, thoughts, and attitudes that could otherwise influence the data. Therefore, engaging in epoche before, during and after data collection averted assumptions and biases from influencing the study (Bibbs, 2019).

Anticipated Ethical Problems

It was anticipated that there could be some concern about confidentiality among study participants. Considering the target population will be relegated to 40 public colleges and universities within the state of Florida, some participants could be uneasy about being identified. Confidentiality concerns could also serve as potential deterrents from participating in the study. However, respect for participants is of utmost importance when conducting research that involves human subjects (Creswell, 2015). To ensure the benevolence, respect, and justice (Creswell, 2015; U.S. Department of Health and Human Services, 1979) of the research participants, standards and practices of the Florida A&M University (FAMU) Institutional Review Board (IRB) were followed. Additionally, participation was voluntary, and participants were provided a description of the research process before data collection began. Furthermore, no personally identifiable information were reported, and pseudonyms were used in the findings to protect the identity of each participant.

Hypothesis

One hypothesis, null and alternative was formulated for testing.

Ho1: There is no statistically significant relationship between the length of time in leadership and the personal power of Black women administrators in higher education.

H1: There is a statistically significant relationship between the length of time in leadership and the personal power of Black women administrators in higher education.

Research Questions

Three research questions were developed to extract the essence of leadership persistence and personal power among Black women administrators at institutions of higher education.

RQ1: How do Black women administrators in higher education develop their personal power? Particularly, what factors (i.e., social, cultural, professional, political) influence their development of personal power?

RQ2: How do Black women administrators in higher education use their personal power? Particularly, what factors (i.e., social, cultural, professional, political) influence their use of personal power?

RQ3: How do Black women administrators perceive personal power contributing to their leadership persistence? Particularly, what factors (i.e., social, cultural, professional, political) contribute to their leadership persistence?

Data Collection

This research was conducted with Black females in higher education institutions within the Florida College System and the State University System of Florida. The Florida College System is comprised of 28 public community and state colleges that serve nearly 650,000 students annually (Florida Department of Education, n.d.b). The State University System of Florida consists of 12 public universities and serves more than 430,000 students (Florida Board of Governors, n.d.). Collectively, these systems are comprised of member institutions that total 40 public colleges and universities. Among the 40 Florida public colleges and universities that were considered for the recruitment of participants, only one of those institutions was classified as a historically Black college and university (HBCU). The remaining institutions are predominantly white. Targeting a population of Black women leaders who serve in public, predominantly white institutions (PWIs) as opposed to HBCUs was not problematic because research has demonstrated that the experiences of Black women at PWIs and HBCUs are vastly different (Blackshear & Hollis, 2021). Particularly, Black women's experiences with gendered racism and racially derived institutional and structural barriers have been largely observed at PWIs (Chance, 2022; Logan & Dudley, 2019; Sinclair-Chapman, 2019; Tevis et al., 2020; Townsend, 2019; Webster & Brown, 2019). Though Black women encounter career adversity at HBCUs (Blackshear & Hollis, 2021), such barriers are more frequently associated with gender and are less likely to be racially centered. The saliency of Black women's experiences is more apparent at PWIs where their intersecting identities create a multiple minority status.

Target Population

The target population was comprised of Black women leaders who serve in public institutions of higher education within the Florida College System and the State University System of Florida. These positions of leadership included "top executive officers; senior institutional officers; academic deans; institutional administrators; heads of divisions, departments, and centers; and academic associate and assistant deans" (American Council on Education, 2019, p. 262). Fall 2021 data from the National Center for Education Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS) revealed that there were 445 Black women postsecondary managers within the 12-member institutions of the State University System of Florida. Additionally, the Florida College System reported a total of 152 Black female executives, administrators, and managers during the 2021-2022 academic year (Florida Department of Education, n.d.a). A total of 597 Black women were potentially eligible for the study.

Ethical Statement

It was anticipated that there could be some concern about confidentiality among study participants. Considering the target population will be relegated to 40 public colleges and universities within the state of Florida, some participants may be uneasy about being identified. Confidentiality concerns could also serve as potential deterrents from participating in the study. However, respect for participants is of utmost importance when conducting research that involves human subjects (Creswell, 2015). To ensure the benevolence, respect, and justice (Creswell, 2015; U.S. Department of Health and Human Services, 1979) of the research participants, standards and practices of the Florida A&M University (FAMU) Institutional Review Board (IRB) were followed. Additionally, participation was voluntary, and

participants were provided with a description of the research process before data collection began. Furthermore, no personally identifiable information was reported, and pseudonyms were used to protect the identity of each participant.

Limitations

Several limitations outside of the researcher's control are acknowledged. First, the specificity of the research setting and target population limits the potential generalizability of the results. Participants were drawn from the Florida College System and the State University System of Florida; therefore, the views expressed do not apply to all Black women administrators at postsecondary institutions across the United States. Secondly, researcher's bias, or the tendency of a researcher's personal opinions to influence the results (Creswell, 2015) was a potential limitation. However, to mitigate biased analysis and interpretation of the findings, the investigator journaled personal reflections throughout the research process to suspend judgment (Bibbs, 2019; Creswell & Poth, 2018; Moustakas, 1994).

Delimitations

This research included Black women serving in administrative leadership roles – such as top executive officers, senior institutional officers, academic deans, institutional administrators, heads of divisions, departments, and centers, and academic associate and assistant deans (American Council on Education, 2019) at public institutions of higher education within Florida. Women who did not self-identify as Black or African American were excluded. Black women administrators who are not currently employed at a public college or university in Florida were also excluded.

Sampling

Purposive sampling was adopted for the quantitative data collection phase. Purposive sampling required the non-random, intentional selection of participants based on their ability to yield the most relevant data in accordance with direct knowledge of the phenomenon, theme, or concept, and their willingness to engage in the study (Yin, 2016). Onwuegbuzie and Collins (2007) affirmed the common practice of applying purposive sampling to mixed methods studies to maximize understanding of an underlying phenomenon.

Participants for the administration of the Diamond Power Index® (DPI) self-assessment were selected from a minimum of 10 percent of the target population. At least 60 completed DPI self-assessments were deemed adequate for the quantitative phase of this study. Individuals were invited to participate through the use of social media platforms (i.e., LinkedIn), available contact information listed on the websites of Florida colleges and universities, and professional state associations such as the American Council on Education (ACE) Women's Network of Florida, Florida Alliances for Graduate Education and the Professoriate (FLAGEP), Florida Health Information Management Association, and Sisters of the Academy (SOTA). To be eligible, participants had to self-identify as (a) Black or African American, (b) a woman, (c) a current postsecondary administrator (i.e., Director, Assistant Dean, Executive Director, Vice President, or President), and (d) a current administrator at a public college or university within the Florida College System or the State University System of Florida.

Maximum variation sampling is a purposeful approach that yields multiple perspectives of the phenomenon to represent the diversity of the world (Creswell, 2015). The intent was to select participants who held roles from each administrative category defined by the American Council on Education (2019). The sample included “top executive officers; senior institutional officers; academic deans; institutional administrators; heads of divisions, departments, and centers; and academic associate and assistant deans” (American Council on Education, p. 262) as well as those with varying years of leadership experience to capture multiple perspectives of the development and uses of personal power in higher education administration.

The Diamond Power Index® (DPI) was administered using Qualtrics, an online survey platform. Participants received invitations to complete the survey via email. At the initiation of the survey, participants were informed of confidentiality and the protection of survey data. Participants were also required to review and agree to a privacy policy before beginning the questionnaire. Qualitative data was collected from 11 participants in a one-on-one interview. Interviews were conducted to provide insight into Black women's perceptions of personal power and their development, application, and contribution to their leadership persistence in higher education. Participants were issued an Informed Consent for Adult Participation in the Interview. All interviews were recorded and transcribed using Zoom, an online video conferencing platform. The average interview length was 35 minutes. The interviews consisted of 13 open-ended questions. Each interview transcript was reviewed for accuracy by the researcher, and participants were given the option to review a copy of their interview transcript before data analysis.

Data were collected from Black women leaders at institutions of higher education within the Florida College System and the State University System of Florida (SUSF). A total of 102 survey responses were collected in Qualtrics. During the cleaning process, 34 cases were deleted because they did not meet the eligibility criteria or were not fully completed. Cleaning the data ensured that only valid and complete responses were included in the research. As a result, analyses were based on 68 respondents who completed the Diamond Power Index®. Participants were asked 10 demographic questions to capture their institutional type, administrative position title, years worked in higher education, years worked in their current leadership position, educational level, age, gender, marital status, race, and ethnicity. Thirty respondents worked at Community or Technical Colleges, 21 served at Predominantly White Institutions, nine served at Historically Black Colleges or Universities, and eight identified their institutional type as 'Other.' Most of the women administrators held titles as Executive Director or Director. Furthermore, 51.5% of respondents worked in higher education for 16 or more years, while 69% reported being in their current leadership position for zero to five years. Master's degrees were held by 48.53% of the respondents; 36.76% possessed terminal degrees; and 14.7% indicated a bachelor's, education specialist, or unspecified educational level. Most women leaders were between the ages of 45–54, and 100% identified as a woman/female. For the survey items regarding marital status, 50% indicated married, 27.94% were single/never married, 20.59% were divorced, and 1.47% preferred not to answer. More than 95% of the participants identified as Black/African American, and 4.41% as multiracial, 97.06% indicated they were not of Hispanic or Latino ethnicity, 1.47% were Hispanic, and 1.47% preferred not to answer. The demographic characteristics of the respondents are shown in Table 1.

Table 1.

Demographics of Survey Respondents

Demographic Items	Response Options	% (n)
The type of institution in which I work is:	Predominantly White Institution	30.88% (21)
	Historically Black College or University	13.24% (9)
	Community or Technical College	44.12% (30)
	Other	11.76% (8)
The current administrative leadership position I hold is:	Executive Director/Director	33.82% (23)
	Other	10.29% (7)
	Assistant Vice President/Chancellor/Provost	10.29% (7)
	Academic Dean	
	Associate Director	10.29% (7)
	Associate Vice President/Chancellor/Provost	7.35% (5)
	Associate Dean	7.35% (5)
	Assistant Dean	
	Assistant Director	5.88% (4)
	Vice President/Chancellor/Provost	4.41% (3)

Demographic Items	Response Options	% (n)
	Academic Department Chair	4.41% (3)
	President/Chancellor/Provost	2.94% (2)
		1.47% (1)
		1.47% (1)
The number of years I have worked in higher education are:	16+ years	51.47% (35)
	11-15 years	23.53% (16)
	6-10 years	14.71% (10)
	0-5 years	10.29% (7)
The number of years I have worked in my current position are:	0-5 years	69.12% (47)
	6-10 years	19.12% (13)
	11-15 years	7.35% (5)
	16+ years	4.41% (3)
The highest degree that I hold is:	MA/MS	48.53% (33)
	Ph.D./Ed.D.	36.76% (25)
	Other	10.29% (7)
	BA/BS	2.94% (2)
	Ed.S.	1.47% (1)
What is your age?	45-54	36.76% (25)
	35-44	32.35% (22)
	55-64	19.12% (13)
	25-34	8.82% (6)
	65+	2.94% (2)
What is your gender identity?	Woman / Female	100% (68)
What is your marital status?	Married	50.00% (34)
	Single/Never Married	27.94% (19)
	Divorced	20.59% (14)
	Prefer not to answer	1.47% (1)
What is your race?	Black or African American	95.59% (65)
	Multiracial	4.41% (3)
What is your ethnicity?	Not Hispanic or Latino	97.06% (66)
	Prefer not to answer	1.47% (1)
	Hispanic or Latino	1.47% (1)

Quantitative Results

To determine if a relationship existed between length of time in leadership and the personal power of Black women administrators in higher education, participants evaluated their personal power by responding to items on the Diamond Power Index® (DPI). All items related to five DPI scales: Capable Self, Aware Self, Purposeful Self, Self Improvement, and Self Protection. Responses from the DPI were originally computed as percentiles; however, since percentiles do not follow a normal distribution, a central assumption of the correlation would be violated. Therefore, the percentiles were converted to z-scores so the data could be standardized, compared directly, and used to determine how many standard deviations a score is from the mean (Andrade, 2021). Categorical data was gathered to preserve anonymity and represent the timeframes in which participants worked in their current positions. There were 47 (69.12%) respondents who reported being in their current leadership role for zero to five years, 13 (19.12%) who selected six to 10 years, five (7.35%) were in their leadership role for 11–15 years, and three (4.41%) respondents had been in their positions for more than 16 years (See Table 1). For each scale of the Diamond Power Index® (DPI), responses were grouped categorically by years of experience. Table 2 shows the z-score averages for the Capable Self, Aware Self, Purposeful Self, Self Improvement, and Self Protection scales by the years worked in the current leadership position. Category 11–15 years had the highest z-score averages for Capable Self, Aware Self, Purposeful Self, and Self Improvement (1.23, 0.57, 1.41, and 0.62, respectively). However, for the Self Protection scale, those

with 11–15 years of leadership experience had an average z-score of -0.42, which was lower than all the other groups.

Table 2.

Average of Z-scores By the Number of Years Worked in Current Leadership Position

Years Worked in Current Leadership Position	Capable Self (z-score)	Aware Self (z-score)	Purposeful Self (z-score)	Self Improvement (z-score)	Self Protection (z-score)
0-5 years (n = 47)	0.40	0.32	0.59	-0.03	.96
6-10 years (n = 13)	0.65	0.30	0.90	0.31	0.38
11-15 years (n = 5)	1.23	0.57	1.41	0.62	-0.42
16 or more (n = 3)	0.80	0.30	0.88	-0.99	0.97

Capable Self

Diamond Leadership (2018b) uses the Capable Self scale to measure one's self-efficacy, confidence, and perseverance to make an impact and achieve individual goals. The average woman with 11–15 years of leadership experience evaluated their Capable Self higher than those at other stages of leadership. The average woman with 11–15 years of leadership experience was more likely to show confidence in their capacity to achieve their goals, quickly find multiple solutions to problems, and rely on self-discipline and strong determination to persist in their roles.

Aware Self

Diamond Leadership (2018b) utilizes the Aware Self scale to evaluate a person's ability to engage in introspection, direct their attention, identify emotions and thoughts, and gain insight into how internal experiences shape behavior and actions. The average woman with 11–15 years of experience assessed their Aware Self higher than those in the other experience categories. These results indicate that those with 11–15 years of experience in leadership are more communicative about their emotions and thoughts and perceive themselves as independent and distinct from others and the tasks in which they are involved. Furthermore, ranking higher on the Aware Self scale implies that the women are more likely to consciously separate their identities from the work they do to live balanced lives.

Purposeful Self

The Purposeful Self scale reflects one's ability to handle and recover from challenges. One's Purposeful Self score generally signifies a positive worldview that is buoyed by the belief that life holds meaning and purpose. The participants with 11–15 years of leadership experience measured their Purposeful Self

higher than those in the other experience categories. This ranking implies that the average woman with 11–15 years of leadership experience is more resilient in the face of setbacks, maintains an optimistic attitude during tough times and draws meaning from the adversities, and experiences a greater sense of satisfaction in their personal and professional roles (Diamond Leadership, 2018b).

Self-Improvement

The Self Improvement scale is used to evaluate one's attitude toward personal growth. The average woman with 11–15 years of leadership experience evaluated their Self-Improvement higher than those in the other experience categories. These results indicate that the average woman with 11–15 years of leadership experience is more likely to value learning and feedback, possess a strong drive to improve, and put forth the efforts that produce change in themselves and the world around them (Diamond Leadership, 2018b).

Self-Protection

The Self Protection scale is used to measure the extent to which individuals guard their sense of identity against the judgments and feedback of others. The women with 16 or more years of leadership experience evaluated their Self Protection higher than those in the other experience categories. These results imply that the average woman with 16 or more years of leadership experience carries cautious and reluctant attitudes toward suggestions for improvement, is more skeptical about feedback and evaluations, and tends to resist change at higher levels than their counterparts in the study. Interestingly, the two groups that held the highest Self-Protection averages were those with zero to five years of leadership experience and those with 16 or more years. Meanwhile, those with six to 10 and 11–15 years of experience had significantly lower z-score averages (.38 and -.42, respectively). Low scores on the Self Protections scale indicate a high receptivity to feedback, readily embracing suggestions for change and viewing feedback as an opportunity to grow (Diamond Leadership, 2018b).

Hypothesis Testing

Spearman's rho was used to determine if a relationship existed between the length of time in leadership and the personal power of Black women administrators in higher education. Creswell (2015) encouraged the use of Spearman's rho for testing relationships between multiple categorical variables that assume a nonnormal distribution. The multivariate nature of personal power aligns with Spearman's rho measurement criteria. To conduct Spearman's rho, data were entered that included the number of years in the current leadership position and the z-scores of the five personal power scales: Capable Self, Aware Self, Purposeful Self, Self Improvement, and Self Protection. Additionally, data from "the number of years I have worked in my current role" was recoded from categorical ranges to a numeric variable as shown in Table 3.

Table 3.

SPSS Numerical Assignment of Years in Current Leadership Position

Categorical Data	Numerical Assignment
0-5 years	1
11-15 years	2
16+ years	3
6-10 years	4

The Spearman's rho test revealed a correlational coefficient of .145 for Capable Self, .010 for Aware Self, .206 for Purposeful Self, .134 for Self Improvement, and -.290 for Self Protection. Analysis of the p values for Capable Self ($p = .238$), Aware Self ($p = .936$), Purposeful Self ($p = .092$), Self Improvement ($p = .277$), and Self Protection ($p = .016$) were all greater than the 0.05 alpha. Creswell (2015) suggested that the best practice is to fail to reject the null hypothesis when the p value is greater than the alpha. Table 4 contains the Spearman's rho correlations, which display the strength and direction of association between each variable.

Table 4.

Spearman's rho Correlations

		The number of years I have worked in my current position are:	Capable Self (z-score)	Aware Self (z-score)	Purposeful Self (z-score)	Self-Improvement (z-score)	Self-Protection (z-score)
The number of years I have worked in my current position are:	Correlation Coefficient	1.000	.145	.010	.206	.134	-.290*
	Sig. (2-tailed)	.	.238	.936	.092	.277	.016
	N	68	68	68	68	68	68
Capable Self (z-score)	Correlation Coefficient	.145	1.000	.526**	.718**	.604**	-.049
	Sig. (2-tailed)	.238	.	<.001	<.001	<.001	.690
	N	68	68	68	68	68	68
Aware Self (z-score)	Correlation Coefficient	.010	.526**	1.000	.667**	.319**	-.184
	Sig. (2-tailed)	.936	<.001	.	<.001	.008	.133
	N	68	68	68	68	68	68
Purposeful Self (z-score)	Correlation Coefficient	.206	.718**	.667**	1.000	.467**	-.179
	Sig. (2-tailed)	.092	<.001	<.001	.	<.001	.145
	N	68	68	68	68	68	68
Self-Improvement (z-score)	Correlation Coefficient	.134	.604**	.319**	.467**	1.000	-.088

		The number of years I have worked in my current position are:	Capable Self (z-score)	Aware Self (z-score)	Purposeful Self (z-score)	Self-Improvement (z-score)	Self-Protection (z-score)
	Sig. (2-tailed)	.277	<.001	.008	<.001	.	.476
	N	68	68	68	68	68	68

A multi-phase explication process was considered for investigating the qualitative data derived from one-on-one semi-structured interviews. Inspired by Hycner's (1985) phenomenological analysis process, the explication entailed: (a) transcribing the interview data, (b) phenomenological reduction and bracketing, (c) delineating units of meaning, (d) clustering units of meaning to generate themes, (e) summarizing, validating, and modifying each interview, (f) identifying general and unique themes, and (g) writing a composite summary that reflects the context from which the themes emerged (Groenewald, 2004).

Descriptive Findings

Qualitative data was gathered from 11 participants who self-identified as Black or African American women currently serving as higher education administrators. Each participant was assigned a pseudonym using the Greek alphabet to preserve anonymity. The names selected were Alpha, Beta, Gamma, Delta, Epsilon, Zeta, Eta, Theta, Iota, Kappa, and Lambda. The most prevalent age range among the participants was 35–44 years old. Approximately 73% of the women held master's degrees. Although maximum variation sampling was adopted to select cases that varied from each other as much as possible in terms of years of experience, the majority (82%) of the participants had been in their current leadership role for zero to five years (See Table 5).

Table 5.

Demographics of Qualitative Sample

Pseudonym	Age Range	Degree Level	Number of Years Worked in Current Position	Number of Years Worked in Higher Education
Alpha	35-44	MA/MS	6-10 years	6-10 years
Beta	35-44	MA/MS	0-5 years	16 or more years
Gamma	55-64	Ph.D./Ed.D.	0-5 years	16 or more years
Delta	35-44	MA/MS	6-10 years	11-15 years
Epsilon	25-34	MA/MS	0-5 years	0-5 years
Zeta	45-54	Ph.D./Ed.D.	0-5 years	16 or more years
Eta	25-34	MA/MS	0-5 years	0-5 years
Theta	45-54	MA/MS	0-5 years	16 or more years
Iota	45-54	Other	0-5 years	11-15 years
Kappa	25-34	MA/MS	0-5 years	6-10 years
Lambda	35-44	MA/MS	0-5 years	11-15 years

The participants served in a variety of administrative leadership positions, with nearly half of them holding the title of Executive Director/Director. Other positions included Assistant Director, Associate Vice President/Chancellor/Provost, and Academic Dean. Two participants selected "Other" as their administrative role was not listed in the demographic questionnaire. Tables 6 and 7 show additional demographics of the participants with respect to their various leadership positions and institution types.

Table 6.

Administrative Leadership Positions of Qualitative Sample

Administrative Leadership Position	% (n)
Academic Dean	9.09% (1)
Assistant Director	18.18% (2)
Associate Vice President/Chancellor/Provost	9.09% (1)
Executive Director/Director	45.45% (5)
Other	18.18% (2)

Table 7.

Institutional Type of Qualitative Sample

Institutional Type	% (n)
Community or Technical College	36.36% (4)
Historically Black College or University	27.27% (3)
Predominantly White Institution	18.18% (2)
Other	18.18% (2)

Explication of the Qualitative Data

The qualitative portion of the research was guided by three questions: RQ1: How do Black women administrators in higher education develop their personal power? RQ2: How do Black women administrators in higher education use their personal power? and RQ3: How do Black women administrators perceive personal power contributing to their leadership persistence? Data from the qualitative interviews were explicated using a reflexive thematic approach as described by Braun (2021). Braun's recommended six-phased analytical process included familiarization with the data through multiple readings, generating initial codes for statements in the interviews, generating themes by aggregating meaning and meaningfulness across the dataset, reviewing the themes to determine functionality in the research, defining and naming the themes, and generating a report. Themes emerged for each research question and surfaced throughout the interviews are presented next.

Introductory Questions

Interviews began with four introductory questions which allowed the participants to reflect on their experiences in higher education and share their perspectives about the research problem. When asked about their initial attraction to higher education, most of the participants shared that invitations to work in higher education were extended to them through job offers. Others commented that they fell into higher education, while some stated they were inspired by their families and community to give back.

The second introductory question was: What path did you take to get to your current position? While responses to this question varied, most participants indicated they sought advancement opportunities. Others shared that although they started in lower-level positions in higher education, they left their roles to explore opportunities in other industries and then desired to return to academia. Responses to this question varied, too, with each participant indicating career advancement led to their current role in higher education.

The third question asked participants: Have there been any barriers or obstacles that have hindered your career advancement? The responses to this question varied but were distinctively related to the barriers identified throughout the literature. Participants identified age and lack of experience, health, workplace culture, social identities, parenting, being the only, and self as hindrances to their career advancement (Bibbs, 2019; Chance, 2022; Gabriel et al., 2020; Griffin, 2016; Nickerson, 2020).

The final question was: Do you believe there is an underrepresentation of Black women in higher education leadership? There was unanimity among the participants as all believed an underrepresentation of Black women in higher education leadership exists; however, their explanations as to why varied. Most indicated that underrepresentation existed because Black women are excluded from senior leadership roles. Others suggested that the history and culture of institutions of higher education, lack of mentorship, the nature of the job, being a member of the sandwich generation, and social perceptions of Black women contribute to the dearth of Black women in higher education leadership, all of which correspond with previous findings in the literature.

Research Question 1: How do Black women administrators in higher education develop their personal power? Particularly, what factors (i.e., social, cultural, professional, political) influenced the development of their personal power?

Research Question 1 was designed to identify the factors that influence the development of personal power among Black women administrators. Three interview questions were posed: 1a) What does personal power mean to you? 1b) When did you first become aware of your personal power? and 1c) Who or what has influenced the development of your personal power? Three themes were derived from the interview questions: Ownership of one's strength, Empowerment as a youth, and Grown at home.

Interview Question 1a: What does personal power mean to you?

The theme for Interview Question 1a was Ownership of one's strength. This theme is evident in that most of the women administrators described their personal power as being an inner resource of strength that no one could take away. Participants explained that their ability to control how they are represented in the workplace, wield their control, and govern their affairs characterizes their personal power. Several participants also stated that personal power is inner confidence that constitutes their ability to influence change, thus enforcing the belief that it is self-governed.

Comparative Definitions of Personal Power

Diamond's (2016) definition of personal power as "one's inner self-sourced sense of authority that remains stable and durable regardless of the outer situation" (p. 222) served as the literary basis for this research. Throughout the interview process, eleven participants were asked to self-define personal power in Interview Question 1a without being provided with a formal definition. Although each interviewee used different language to express their meaning of personal power, all the definitions captured the essence of what was described in the literature. Particularly, interviewee Theta's definition aligned with Diamond's (2016) as both sources describe personal power as self-derived confidence. Theta stated that personal power means ownership of one's strength. Ownership of one's trajectory. Ownership of one's attitude . . . "It's the belief that the thing that you want to accomplish you can. You can because you believe so. You can because we are willing to do whatever it takes to reach that goal, to obtain that thing . . . You believe in yourself . . . Personal power is that that thing that somebody can't take from you . . . It is yours to do with it, to win with it as you as you see fit.

Interviewee Epsilon's description also agreed with the literature. Epsilon said that I feel like personal power is power that no one can take away. It's empowering yourself and not looking for validation from others and looking deep inside yourself for that validation and reassurance that you got this, that you're that girl.

Other interviewees described personal power as confidence (Eta), control (Delta), personal being (Beta), wielding self-control (Iota), motivation (Lambda), achievement (Kappa), influence (Alpha), self-belief (Zeta), and autonomy (Gamma). All the definitions align with Diamond's (2016) and depict personal power as a deep internal source of strength that is rooted in self-awareness, resilience, and inner

authority. Moreover, the definitions provided by the interviewees also align with the researcher's individual interpretation of personal power: The spirit within that serves as one's inner cheerleader and fuels endurance, perseverance, and stability.

Interview Question 1b: When did you first become aware of your personal power?

The theme for Interview Question 1b was Empowerment as a youth. This theme surfaced as dominant among the responses because most respondents shared narratives from their childhood. Gamma and Epsilon learned about their personal power through the encouraging words of their families. When answering Interview Question 1b, participant Gamma stated, "I'm a well-loved, spoiled rotten child of God who came into the world knowing just what the people that loved me said, 'You're amazing.' And I believed them." Epsilon supported the theme by stating: So, my mom, every day before school, would get us dressed and get us ready for school, and she would always speak to us about she's also an evangelist, so she always goes to God – and talks about how I'm a princess, and you know, hold your head high and do your best."

Other participants related personal power to early signs of leadership. Alpha stated, "So even when I was a kid, I would be like, I see a problem and I want to solve it." Theta remarked, "I think it has always been in me since I was a kid. I've been on my own since I was 15, so you have to have a little bit of personal power in order to have survived." Overall, the participants expressed awareness of their personal power at varying stages of their youth.

Interview Question 1c: Who or what has influenced the development of your personal power?

The theme for Interview Question 1c was Grown at home. Eight of the 11 women administrators described aspects of their upbringing that aided in the development of their personal power. Participants credited certain characteristics of their parents as factors that influenced their personal power. Parental characteristics such as hard work, civic leadership, being a "go-getter," and the ability to instill purpose and identity into their children were noted. Participants were inspired to develop their personal power by seeing it modeled before them and by being affirmed by their parents, thus supporting the theme that personal power is grown at home.

Research Question 2: How do Black women administrators in higher education use their personal power? Particularly, what factors (i.e., social, cultural, professional, political) influence the use of their personal power?

Research Question 2 sought understanding into the ways Black women administrators use their personal power in higher education careers while gaining perspective into the factors that influence or impede its usage. Two interview questions were asked that related to the research question, 2a) How have you used your personal power in your leadership career? and 2b) Are there any factors that have impeded your use of personal power? Two themes surfaced from the interview questions: Speaking up and speaking out, and I don't always agree, but I still get results.

Interview Question 2a: How have you used your personal power in your leadership career?

The theme for Interview Question 2a was Speaking up and speaking out. This theme represented most of the respondents who expressed that they use personal power in their leadership role to advocate for change and vocalize their suggestions for process improvement within their institutions. To support this, Zeta said, "I have used it to lead changes. I didn't wait for other people to tell me what we needed." Respondents expressed that they were powerful when advocating for themselves and their colleagues instead of waiting for others' approval or permission.

Descriptive Uses of Personal Power

As demonstrated by the responses of the eleven interviewees, personal power is used in a myriad of ways. The interviewees reported using personal power to advocate for innovation within departments (Alpha), advocating change (Delta), speaking up about processes and avoiding compromise (Eta), leading change and teaching (Zeta), becoming more receptive to others and navigating tough times (Beta), empowering others (Iota), being a role model (Theta), influencing others to tap into their personal power (Gamma), creating spaces for communication (Lambda), and relationship building (Kappa). As demonstrated, when actively applied, personal power is a highly versatile and dynamic force teeming with the potential to create transformative impact across various contexts.

Interview Question 2b: Are there any factors that have impeded your use of personal power?

The theme that arose from interview Question 2b is I don't always agree, but I still get results. When asked to identify and describe any factors that have hindered the use of personal power, situations involving institutional policies, supervisors, and senior leadership were discussed. It was common among the respondents that some rules and regulations made it difficult for them to fully exercise their personal power. For example, Theta said, well, obviously, you know, you work in a place where there are rules and regulations and things that you certainly can't do. That's what I would say. We don't always agree with all the rules and with all the regulations that are the frameworks of any institution, college, or otherwise. So, that's what I would say. Just rules and regulations that I don't necessarily agree with, you know. Still stay within the boundaries, but I'm known to bend things a little bit, if they are impediments, to kind of move them out of the way a little bit to get done what we need to get done. Furthermore, respondents noted that those with authority over them often had the final say. Participant Eta shared: I think . . . the only factor is like not being the top dog. So, not being the person that's making all the rules. As much as I want to say . . . I advocate for these things, and I fight for whatever, but like, if I'm not the final say so, there's somebody I need to advocate for.

Similarly, Beta remarked, "I can steer the ship, but if he tells me. . . get up. I gotta get up."

While professional factors like institutional policies and regulations, organizational culture, and limited authority and decision-making power served as impediments to their use of personal power in leadership, the participants found creative ways to navigate obstacles. They often discovered alternative routes, drew on their organizational relationships, or allowed others to take credit for decisions when it was necessary. Beta stated assuredly that you don't have to put my name in lights. You don't have to put me on nothing. No marquee . . . I know what I do, and I'm confident in the numbers that I give . . . I don't have to have the pomp and circumstance. Regardless of the barriers they faced, the Black women administrators used their personal power to overcome challenges and move forward progressively for the greater good of the institution, often at the sacrifice of their own recognition.

Research Question 3: How do Black women administrators in higher education perceive personal power contributing to their leadership persistence? Particularly, what factors (i.e., social, cultural, professional, political) contribute to their leadership persistence?

The aim of Research Question 3 was to determine to what degree Black women administrators perceived personal power contributing to their leadership persistence in higher education and to obtain descriptions of other influential factors. This question was addressed using two interview questions: 3a) What do you attribute to your ability to persist in higher education leadership? And 3b) Do you believe your personal power has contributed to your persistence in leadership? Two themes resulted from the interview questions: Being clear of my why and the fire to keep going and growing.

Interview Question 3a: What do you attribute to your ability to persist in higher education leadership?

Responses to Interview Question 3a were shared among the women leaders. The participants each expressed a clear sense of purpose in their roles and attributed their commitment, passion, love for the work, and satisfaction with the outcomes they achieved to their persistence in leadership. The magnitude

of their purpose was reinforced by strong relationships and supportive networks that served as anchors during challenging times. Social factors, such as faith (Lewis, 2022; Richardson, 2009) and the encouragement they received from friends, family, and mentors, also played a crucial role in sustaining their leadership persistence. Alpha remarked, “I have to go back to that book, *Start with Why*. You really have to remember your cause every single day,” and explained how being clear about her purpose has helped her overcome challenging times. Respondents also spoke about the impact relationships have on their ability to persist in higher education. Lambda shared: I think I’m very lucky that I have really great relationships. Like I said people capital is important, but I think relationships with those people that you met, and . . . actually like building that relationship with people goes a long way. And what I leverage is, when I’m weak, I can tap into someone who’s strong and vice versa. That certainly helps . . . motivationally. The responses give insight into the ways in which meaningful relationships not only provide emotional support for women in leadership but also serve as a significant source of resilience and motivation, giving leaders the push they need when facing difficult and trying times in their careers.

Interview Question 3b: Do you believe your personal power has contributed to your persistence in leadership?

Interviewees were asked if they believed personal power had contributed to their leadership persistence, the response was with a unanimous “Yes!” The women provided several explanations that gave insight into their perceptions of how personal power has aided them in continuing in leadership. Personal power was seen to serve as a catalyst that empowered them to overcome obstacles, remain steadfast in their leadership, and leverage their experiences to fuel personal and professional growth. By tapping into their inner strength, they were equipped to excel in their careers and evolve into more capable, impactful leaders who committed themselves to their communities and fulfilling the missions of their respective institutions of higher education. Regarding personal power contributing to growth, Kappa said: But truly the ability or the things that I have been through with this institution. How I’ve excelled here. What I’ve learned in the kid . . . the 20-something-year-old kid . . . that walked in these doors five years ago is not who you see today. It’s an amazing transformation . . . that has helped me to continue to move forward and to continue to give to this institution; to give to our students and continue in higher education because I know that I’ve come this far, and I know I can go even further.

Beta also reflected on using personal power as a tool to help her remain persistent in her personal and professional growth: My persistence in continuing to want to change and increase my professional acumen, and the growth in . . . me being that professional . . . I’m navigating through that every day. Now I’m more reserved . . . because I know that I’m just continuing to grow. So . . . if I want to continue to be in this seat . . . it’s personal and professional, and I get it. But it’s still who you are as a person, and I feel like I’m going to continue to grow.

Lambda described personal power as being an inner fire that drives her to persist through systemic opposition: Leveraging those relationships is helpful, but you still have to have the fire to keep going, especially when you work for a public institution. You have . . . budget constraints, you have legislation you have to be mindful of, you have political climates you have to navigate through, and then you have the institution of this higher ed in general that has issues with classism, elitism, you know, wrapped up in it. And so that’s difficult. You have to be really motivated to be like, ‘I want to . . . keep going up in this. I have a place or I have a mission . . . a calling to serve. And so I’m gonna still, you know, attempt to grow in the leadership way . . . But your personal power . . . it’s really what’s gonna get you through to keep trying, keep applying, keep interviewing, and keep doing professional development for growth.’”

Qualitative Summary

Themes that emerged from the qualitative phase were: (a) Ownership of one’s strength, (b) Empowerment as a youth, (c) Grown at home, (d) Speaking up and speaking out, I don’t always agree, but I still get results, (f) Being clear of my why, and (g) The fire to keep going and growing. The

perspectives of the administrators support findings in the literature that there is an underrepresentation of Black women in higher education leadership roles. However, the causative factors varied among the respondents. Additionally, for those who were in leadership, their ability to persist in their roles can be attributed to the development and ownership of personal power. Personal power acts as a source of confidence, strength, and drive that enables women to overcome challenges, break barriers, and lead with purpose.

Conclusion

Overall, the personal power of Black women administrators in higher education is deeply rooted in their upbringing and life experiences. Rather than relying solely on the power that comes with traditional job titles (Tevis et al., 2020), the social and cultural foundation laid by their families and communities early in life played a pivotal role in shaping their confidence, resilience, and sense of worth. Their professional successes and leadership abilities are reflections of the strong, supportive environments that helped shape their identities and capabilities long before they filled formal leadership roles (Coker, 2018).

Although Black women face significant challenges in exercising their authority while in leadership (Niemann et al., 2020; Tevis et al., 2020), they utilize their personal power as a transformative force to overcome obstacles they experience. Particularly, Black women leverage advocacy, initiative, strategic adaptability, and relational power to navigate systemic barriers and create opportunities for advancement and change.

Moreover, Black women draw significant strength from their sense of purpose, support networks, and personal power, all of which contribute to their leadership persistence. Their ability to navigate challenges and grow as leaders is profoundly tied to these internal and external resources (Anderson, 2022; Coker et al., 2018; Jernigan, 2019; Nickerson, 2020; Roberts et al., 2018; Sales et al., 2020). This interplay of resilience, purpose, and support underscores the enduring impact of these factors on their leadership journey.

Recommendations for Future Practice

Recommendations for future practice are provided to guide institutions and leadership development programs in recognizing the importance of fostering purposeful leadership, creating supportive networks, and empowering individuals to tap into their personal power for sustained growth and impact. Institutions can better support the ongoing growth of Black women administrators, prevent burnout, and ensure they continue to thrive in leadership roles by addressing the unique challenges that Black women leaders face at different stages of leadership. For example, actions like career renewal programs, resilience training, mentorship, and nontraditional leadership pathways can help Black women leaders stay confident, purposeful, and committed to their work while contributing to the institution in new ways.

Additionally, when designing leadership programs, consideration should be given to the awareness that Black women administrators cultivate personal power largely through cultural and familial influences. Institutions should take a more holistic approach to leadership development by integrating personal history, cultural factors, and community support to create empowering environments that nurture Black women leaders at every stage of their careers. By embracing a more comprehensive measure of leadership development, institutions can cultivate an atmosphere where Black women are empowered by their narratives, surrounded by supportive communities, and thrive as administrators.

By understanding that Black women rely on advocacy, internal drive, and relational power throughout their professional careers, institutions should empower them to succeed while dismantling institutional opposition that could hinder the growth and development of human capital in the process. Creating forums where current and aspirant Black women leaders can have a space to express their ideas and experiences can help create an environment where Black women leaders thrive and have their contributions valued (Pillay, 2020; Webster & Brown, 2019).

Recommendations for Future Research

Three opportunities for future research emerged from this study. The first recommendation is to use an explanatory mixed methods research design and expand the qualitative phase by increasing the sample size to a broader range of participants. The study can be achieved by conducting interviews with Black women leaders at various stages of their leadership careers, including those with more than five years of experience, to gain a deeper understanding of the leadership dynamics and challenges faced by Black women in higher education.

A second recommendation is to explore the psychological and emotional toll of long-standing leadership spans, which should be accomplished using a longitudinal research design that follows women leaders throughout their leadership journeys. The study marked a decline in leadership self-confidence, self-awareness, purpose drive, and growth-willingness after 15 years in leadership. This decline warrants further exploration into the psychological and emotional effects an extensive leadership tenure can have on an individual and the identification of factors that may contribute.

A final recommendation is to include women from colleges and universities in other states, using a replicated mixed methods research design. By broadening the scope, researchers could identify variations in the challenges faced and the strategies used by Black women administrators, as well as discover commonalities that unite their leadership journeys. This outlook could contribute to a more comprehensive understanding of the factors that shape the personal power and leadership persistence of Black women administrators in higher education.

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Conflicts of Interest

No conflict of interest has been declared by the author.

Author Contribution

Japera K. Barnes, Paul D. Collins, Warren C. Hope contributed equally to the completion of this manuscript: Conceptualization, data curation, investigation, methodology, writing original draft, review & editing.

Declaration of Competing Interest

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Ethics Approval

In the writing process of the study titled “**Black women’s leadership, persistence, and personal power**”, the rules of scientific, ethical and citation were followed; it was undertaken by the author of this study that no falsification was made on the collected data. “Journal of Action Qualitative & Mixed Methods Research and Editor” had no responsibility for all ethical violations to be encountered, and all responsibility belongs to the author and that the study was not submitted for evaluation to any other academic publishing environment.

Institutional review board (IRB) approval

This research project was approved on January 10, 2024, by Angela Thornton, IRB Chair, Florida A&M University. Reference number 114-23.

Data Availability Statement

Anonymized data from this study can be made available on request from paul.collins@famu.edu.