

Challenges Encountered by College Students in Research

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Abstract

Research has always been considered one of the most challenging aspects of being a student. This study explored the challenges encountered by college students in conducting research in one of the higher education institutions in Ozamiz City during S.Y. 2023-2024. This study utilized a qualitative approach and adopted a case study research design. Purposive sampling was applied to 17 participants. Data elicitation was achieved through face-to-face, in-depth interviews that used a researcher made interview guide. Yin's approach suggests that three themes emerge from the data. These are the initiation, design, and execution phases, multifaceted challenges of students, navigation of methodological, ethical, and analytical challenges, and strategies for overcoming challenges to access literature, collect data, analyze, interpret, and communicate. The use of university resources and academic databases provides necessary information and support for accessing relevant literature and data. Clear communication and proactive problem-solving ensure that students can address issues promptly and make informed decisions. Together, these strategies significantly aid students in overcoming research obstacles.

Keywords: researcher difficulties, resources, academic support, strategies

1. Introduction

Students perceive the research project as the most challenging task, often regarding it merely as one of the requirements in school. In educational contexts, research is not only a subject matter for educators or teachers but also, an academic growth for students themselves, especially those at higher education levels. Research should play the role of laying out a policy that is going to be shared with the community, which is very basic (Sakellaropoulou, 2020). It saves lives (Murdoch, 2020). Students can manage to develop their self-directed critical thought skills while enhancing their oral and written communication skills by integrating research into the curriculum used while in class (Adebisi, 2022). Moreover, a professor states that a research proposal should include comprehensive literature reviews and must provide convincing evidence to establish the necessity of the proposed research study (Acheampong, 2021).

While writing a research proposal, undergraduate students should provide clear and detailed information to convince academic supervisors or readers that the research will be useful, interesting, and worth doing. However, some undergraduate students have difficulties and spend a long time writing their research. To conclude, various studies revealed that conducting research projects is considered a challenging process for learners as they are preoccupied with a fear of making mistakes. Hence, the researchers are motivated to identify the difficulties encountered by education student researchers by a desire to experience intellectual fulfillment through creative work, a preference for confronting difficulties in solving unsolved problems, and sensitivity to practical concerns.

This way, conducting research is an essential activity that improves the ability of students to think critically and solve problems, which is essential throughout their careers (Adebisi, 2022). Research scholars benefit from this process through the encouragement of logical thinking and problem-solving abilities since they can conduct their research after choosing a topic of study and providing it with a suitable title. The scholars face several troubles, such as those connected to selecting a supervisor, a topic, and institutional and supervisory support (Ashram Afzal et al., 2023). The research supervisor also influences the research project's completion. The supervising may complete the thesis and submit it on time if the supervisor gives them the right amount of time (Zulfiqar et al., 2020). However, they had insufficient meetings with their managers because of their supervisor's heavy academic burden and time constraints. Institutional obstacles, such as a lack of support, finance, and other resources from the university administration, arose because their thesis work was being completed (Ali et al., 2021).

There are studies aimed to highlight the challenges and obstacles encountered by postgraduate students in research proposals. The results indicated that postgraduate students have difficulties in selecting the right topic, understanding with the research supervisor, lack of guidance, lack of knowledge about appropriate paraphrasing techniques, and avoiding plagiarism (Muneer et al., 2020). Another researcher discussed the same problems with this research, whose aim was to examine the problems in international postgraduate students' research proposals. The findings showed that having problems identifying research gaps, reviewing and criticizing the literature, lack of evidence to support the research proposal, inadequate research materials, time allocated to write the proposal was insufficient, and supervisors are not available for consultation are difficulties for most postgraduate students in writing their research proposal (Acheampong, 2021).

In Turkey, they were unable to complete their dissertations because of difficulties in determining the research design, formulating data collection tools, and data analysis, including their level of research knowledge (Wanasinghe, 2020). Another study found that students in Bangladesh and Sri Lanka, respectively, lack adequate knowledge and the ability to state research problems clearly. This eventually leads to anxiety, frustration, and depression during the research period. However, inadequate research experience and interest affect guidance by supervisors; this makes supervisors mislead and misguide the students (Rind, 2020). If the research is not handled appropriately, supervision can have a significant impact on the student's motivation for work and the eventual quality of the research (Desmennu & Owaoje, 2018). Therefore, for the successful completion of the thesis, the supervisor is expected to provide academic advice and guidance and give the student moral support and encouragement. The role of the supervisor is vital because student motivation and the relationship between the student and supervisor are the most important factors influencing the progress of a student's research project (Peiris et al., 2019).

The underrepresentation of researchers from Low Middle-Income Countries (LMICs) in the literature compared with their counterparts in High-Income Countries (HICs) has been demonstrated in several research fields, including maternal health, community health, surgery, infectious disease, and psychiatry (Busse & August, 2020). These disparities are problematic, as locally produced research is essential to define research priorities for health problems relevant to the local community to ensure that research informs policy and practice (Sheikh et al., 2017). Challenges to conducting high-quality research include unavailable mentors, limited funding opportunities, inadequate resources for professional development, and scarcity of skilled personnel and advanced laboratory facilities (Malekzadeh et al., 2020; Sharma et al., 2021). A deficient research infrastructure and an unsupportive research culture are barriers to building successful research careers (Shumba & Lusambili, 2021; Langhaug et al., 2020). Additional factors that hinder research include a scarcity of research universities in Low Middle-Income Countries (LMICs) and a lack of a critical mass of researchers and mentors (Shumba & Lusambili, 2021). One mixed-methods study showed that publishing challenges included time constraints, poor scientific writing, difficulties with the submission process, lack of funding for publication fees, and statistically non-significant results (Majid et al., 2022).

In the Teaching English to Speakers of Other Languages field (TESOL), a study was conducted to explore the attitudes and perceived challenges of 52 EFL students at a Libyan EFL Department concerning doing a graduation research project through questionnaires and semi-structured interviews. They found that over half of the students had a positive attitude toward their graduation research, while the rest were ambivalent (Elmabruk & Bishti, 2020). Uncertainty resulted from realistic difficulties (lack of resources, poor skills, problems with the supervisor) and unrealistic difficulties (limited time, public speaking, selecting a topic). Such pieces form a good base of knowledge for graduate students and junior scholars, and some describe both cognitive and emotional challenges one faces during the research process very aptly (Townsend et al., 2020).

There is, therefore, empirical research that focuses on the challenges that college students experience when undertaking research in the second semester of the 2023-2024 academic year, especially in Ozamiz City. Though there exist studies on such qualitative issues related to referencing, topic choice, literature review, personal issues, the extent of support provided at the University, and stress level felt during the thesis, there is very little serious scrutiny of what these students, exactly in this timing and location have faced as some of their pressing issues (Rukhsana Bashir et al., 2023; Ali et al., 2021; Muneer et al., 2020). This research fills the gap by providing empirical insights into these challenges and exploring how teachers and peers cope with them. Addressing this gap, the study aims to contribute to the development of targeted interventions and support systems to enhance students' research capabilities and educational outcomes (Miles, 2017).

This study based at Misamis University seeks to investigate the difficulties encountered in doing research. I hope these difficulties are addressed through improved guidance on doing research at the University, better educational results, and faculty development. The findings will lead to the design of more effective research guidance and support systems both for students and teachers. It will benefit the innovative area and serve as an indicator that the University upholds the principles of academic excellence matched with student achievements, and hence, its reputation globally and locally has been enhanced. Furthermore, in this process of research, constant improvement is set off; the University thereby becomes responsive toward the changing needs of students and progresses towards excellence with innovation in Education.

1.1. Theoretical Framework of the Study

This study is anchored in John Dewey's Experiential Learning Theory, 1938, and Jerome Bruner's Constructivist Theory, 1966. This study is anchored to John Dewey's Experiential Learning Theory, as he emphasized learning through experience and reflection (Dewey, 1938). Dewey's "Learning by Doing" philosophy provides a strong foundation for cultivating meaningful learning. It highlights the vital roles of active engagement, problem-solving, and social interaction in the learning journey. Dewey's philosophy focuses on experiential learning, with an emphasis on the person and the objects of knowledge at his or her center. According to this person, knowledge does not just soak in; it is constructed out of experiences by the learner, making the learning process more of a dynamic interaction with the learning subject (Bonar, 2009).

Students' engagement in research fosters experiential learning, enabling them to construct knowledge, develop critical thinking, and enhance problem-solving skills (Dewey, 1938; Yanto & Ramdani et al., 2023). Challenges in research necessitate supportive environments for reflection and iterative learning. Applying the learning by-doing theory to research challenges faced by college students involves active participation in identifying, analyzing, and solving real-world issues encountered in their academic journey. As Dr. Linda Darling-Hammond emphasized, "Active learning—that is, learning by doing—is not only more memorable, it also allows students to engage in collaboration and problem-solving akin to the world of work" (Bocar, 2009).

This study will also adopt Jerome Bruner's constructivist theory (Bruner, 1966), which holds that learning is an active process in which a person constructs new knowledge based on existing mental structures. One of the prominent themes in Bruner's theoretical framework is that learning is an active process in which learners construct new ideas or concepts based on their current/past knowledge. The learner selects and transforms information, constructs hypotheses, and makes decisions based on a cognitive structure. Cognitive structure, or schema, mental models, provides meaning and organization to experiences and allows the individual to "go beyond the information given" (Wijayanti, 2012).

In the realm of research, students form understanding by interacting with research materials, peers, and instructors. Challenges in research, like picking a topic or grasping literature reviews, can hinder this process (Chennai, 2020). Bruner further argues that scaffolding and appropriate support and guidance should be given to the students to overcome these difficulties and produce meaningful research outputs. Involving the students in socially constructed qualitative research methods is one such effective way of teaching qualitative research as qualitative researchers works. Our teaching will, therefore, match our subject matter. Instead, by conducting qualitative research using a constructivist approach, the author argues that it will captivate students by how they derive knowledge. From this approach, learning through reflection and experience will help students to become proficient qualitative researchers (Junjun Muhammad, 2023).

1.2. Conceptual Framework

The concepts drawn from the study were rooted in the various themes discerned from the participants' diverse responses during the interviews conducted with the researchers.

Challenges in Initiation, Design, and Execution Phases.

Selecting a relevant research topic is a significant challenge for many college students. They often struggle to narrow down broad subjects into manageable and specific research questions. The pressure to choose a topic that is both interesting and feasible can be overwhelming, leading to indecision and delays. Students might also face difficulty in identifying gaps in the existing literature or determining the originality of their ideas.

Additionally, limited exposure to current trends and debates within their field can hinder their ability to select a topic that is both relevant and innovative. Some of these can be mitigated by guidance from faculty and adequate preliminary reading. The point of beginning a research process is the selection of a research topic and without a research topic, there is nothing to direct the kind of research to be conducted. Although easy to understand, this task is hard to carry out. Most submissions to prime journals are rejected because the novel topic of the paper does not bring a contribution (Lim, 2022). Reasons for rejection are because of a lack of contribution to new knowledge, either theoretically or practically. Such rejections may arise from various causes, such as when the topic selected has already been researched, and the reason for researching that topic again is not adequately and convincingly justified (e.g., necessity, importance, relevance, and urgency (Lim et al., 2022).

Poor time management. Time management is very important but challenging to do for students at all levels in the research process. Balancing research and coursework, part-time work, and personal responsibilities typically results in the development of procrastinatory behavior and finishing at the last minute. Balancing research with coursework, part-time jobs, and personal commitments often leads to procrastination and rushed work. Many students underestimate the time required for various research stages, from literature review to data analysis, resulting in last-minute stress. Inadequate planning and lack of a structured timeline may cause delays and lower the quality of research. Furthermore, some unforeseen problems like data collection or technical issues can also delay the process. Students can utilize their time when they plan research in detail, adhering strictly to deadlines. Balancing deadlines, academic intensity, and the requirement of research creates problems for the students. Time management is an important factor affecting the academic performance and retention of students, as stated by Researchers in Higher Education. Most of the previous studies were done to establish the relationship between time management skills and student persistence and develop concepts of time management that can be used in higher education students' academic advantages. The body literature provides general information, but each higher education institution encompasses a unique student population that requires more specific research and literature (Smith & Johnson et al., 2021).

Challenges in acquiring participants. Recruiting participants for research studies is a challenge for students. They struggle to recruit enough participants/respondents, particularly in studies that require demographics or intimate information. You do not recruit that easily, and there are ethical implications and the issue of informed consent. Again, accessibility to networks and resources may still limit reachability to potential participants and thereby also reduce scope. In exchange, it can neither be seen nor assured enough to educate people on the importance and benefits of their study. This request for participants and guidance from more seasoned researchers speaks volumes about the University's resources. The challenges associated with data collection are prevalent throughout global academia and impact the advancement of accessibility to networks and resources may still limit reachability to potential participants and thereby also reduce scope. In exchange, it can neither be seen nor assured enough to educate people on the importance and benefits of their study. This request for participants and guidance from more seasoned researchers speaks volumes about the University's resources. The challenges associated with data collection are prevalent throughout global academia and impact the advancement of knowledge. Addressing this issue will necessitate a collaborative effort to develop suitable responses that promote ethics, rigor, and inclusivity in research on a global scale. Researchers can improve the quality and integrity of research by pursuing academic endeavors that identify common barriers and share best practices across a diverse range of cultural and institutional contexts (Rafiq et al., 2022).

Challenges in Interpreting and Analyzing Data. Interpreting and analyzing data present significant challenges for students, especially those unfamiliar with statistical methods or data analysis software. Applying appropriate analytical techniques and accurately interpreting results can be daunting, leading to potential misinterpretation and invalid conclusions. The complexity of qualitative data analysis, such as coding and theme identification, can also be overwhelming. Additionally, students may struggle with presenting their findings clearly and coherently. For instance, access to statistical support services would alleviate some of these challenges, as would training in data analysis. Analysis and Interpretation are separable. An analysis is a close reading of data, an examination of the parts, listening and relistening to what we have gathered, and using practices, such as coding and memo writing, to systematically discern what we are reading based on a prior knowledge or what one might call "emergent" discernment. Data interpretation is conceptualizing or making a larger meaning of what we have examined. Here, we tell the meta-story or build themes that tie together the seemingly disparate threads across data. Though the lines between analysis and Interpretation can be blurred, pointing out their differences helps better understand incremental shifts in the qualitative research life cycle and how we move from fragments to wholes (Paul Mihas et al., 2021).

Challenges in finding related literature. Finding relevant and credible literature is a foundational step that can be fraught with difficulties. Students often face challenges in accessing full-text articles due to subscription barriers and may not be aware of alternative resources like open access journals. There are so many books available that a student may face difficulty in the selection of appropriate, relevant, and high-quality sources. Furthermore, students may find it difficult to perform effective searches for relevant studies within academic databases and search engines. Another common problem is the organization and synthesis of the information drawn from various sources into a coherent literature review. Instruction in advanced search techniques, combined with access to large academic databases, can be helpful in these situations. The literature review is the most critical component of your studies; it is the method through which you will gain understand what "the theoretical and empirical debates in your research are. It will generate an understanding of previous research and dominant approaches" (Churchill et al., 2007). It is what finally establishes your credibility as a researcher and to argue for the relevance of your research" (Phelps et al., 2007).

The second goal, navigation of methodological, ethical, and analytical challenges, covers subjects like proactive time management for academic success and collaborative support in research efforts.

Navigating methodological, ethical, and analytical challenges.

Proactive time management is crucial for academic success amidst methodological, ethical, and analytical challenges in research. It involves prioritizing tasks, setting realistic goals, and maintaining a disciplined approach to meet deadlines across all research stages. Also, good time management allows students to cope with unforeseen setbacks, allowing them to balance research responsibilities with coursework and personal commitments, improving productivity while lowering stress. Most teenagers lack time management skills, according to another study, but the silver lining is that with a little practice and discipline, this skill can be easily learned, developed, and applied. The issue with this, and what every teen sees, is that while it may be fine for them to put off to the last minute when they finally do make things happen with things that matter to them or friends or family, the big issue this creates later in life is that they never outgrow the procrastination and develop into life, long procrastinators. These are examples of procrastination of a habit in which the individual does not get things until the very last minute that can generate high levels of stress or possible problems of another kind, the aspect that the relationship can turn to sheens. Basically, it is crucial to teach teens how to be responsible, meaning time management without constant reminders or help to get work done (Amuta Arumugam et al., 2021).

Collaborative Support is essential for overcoming methodological, ethical, and analytical challenges in research. It entails seeking guidance and feedback from peers, mentors, and faculty throughout the research process. Engaging in research groups and workshops facilitates knowledge exchange, peer learning, and the development of innovative solutions to ethical dilemmas. Collaboration with experienced researchers not only enhances research outcomes but also fosters professional growth and establishes valuable networks for future academic pursuits. The meta-analysis of perceived teacher support, student engagement, and academic achievement underscores the fact that teachers who are highly supportive of students have a profound effect on their research experiences and results. Supportive teachers make it easier for the students to have better research skills and, hence, greater engagement and higher academic achievement. Thus, supportive relationships between teachers and students are significant factors in making their research activities successful (Stefan Kulakow et al., 2022).

The third aim is strategies for overcoming barriers to accessing literature, data collection and analysis, Interpretation, and communication. This includes themes such as empowering research exploration through university websites and academic database resources, mentorship, and guidance on research.

Strategies to Overcome Challenges in Accessing Literature, Data Collection, Analysis, Interpretation, and Communication. Accessing university website resources and academic databases empowers students by providing comprehensive access to scholarly literature and robust data sources. These platforms avail a lot of peer-reviewed articles, research databases, and other specialized tools crucial for the deep literature review of the relevant topic, collection of relevant data, and rigorous analysis. Students may make their research projects more profound and valid if they use such resources effectively to keep abreast of the latest developments in the fields they pursue and gain an all-round view of their respective research topics. It follows that access to diverse and credible sources, as is the case of sites like those offered on university sites and academic databases, influences the quality as well as the depth of study (Caswell et al., 2020). I provided one relevant study that demonstrates the usage of university resources and academic databases at "The Impact of Open Access and Collaboration on Citation Rates in Astronomy" — Google Scholar. These resources and collaborative networks through academic databases magnify citation rates and faster distribution of knowledge in the community (Joshua D. Burkhardt & Alberto Accomazzi , 2021).

Mentorship and guidance in research. Mentorship and guidance are instrumental in helping students navigate challenges in research, from data collection to Interpretation and communication. Mentors, typically experienced faculty or researchers, provide invaluable support by offering insights into research methodologies, ethical considerations, and advanced analytical techniques. This guidance not only aids in overcoming obstacles but also fosters the development of critical research skills and enhances scholarly communication. Through mentorship, students gain the confidence and expertise needed to address complexities in their research and contribute meaningfully to their academic disciplines. Research mentors play a pivotal role in influencing trainees' research career intentions, academic persistence, self-efficacy, academic identity, and a range of other attributes associated with academic success (Denekner L et al., 2024). Therefore, for the successful completion of the thesis, the supervisor is expected to provide academic advice and guidance and give the student moral support and encouragement. The role of the supervisor is crucial because student motivation and the relationship between the student and supervisor are the most important factors influencing the progress of a student's research project (Peiris et al., 2019).

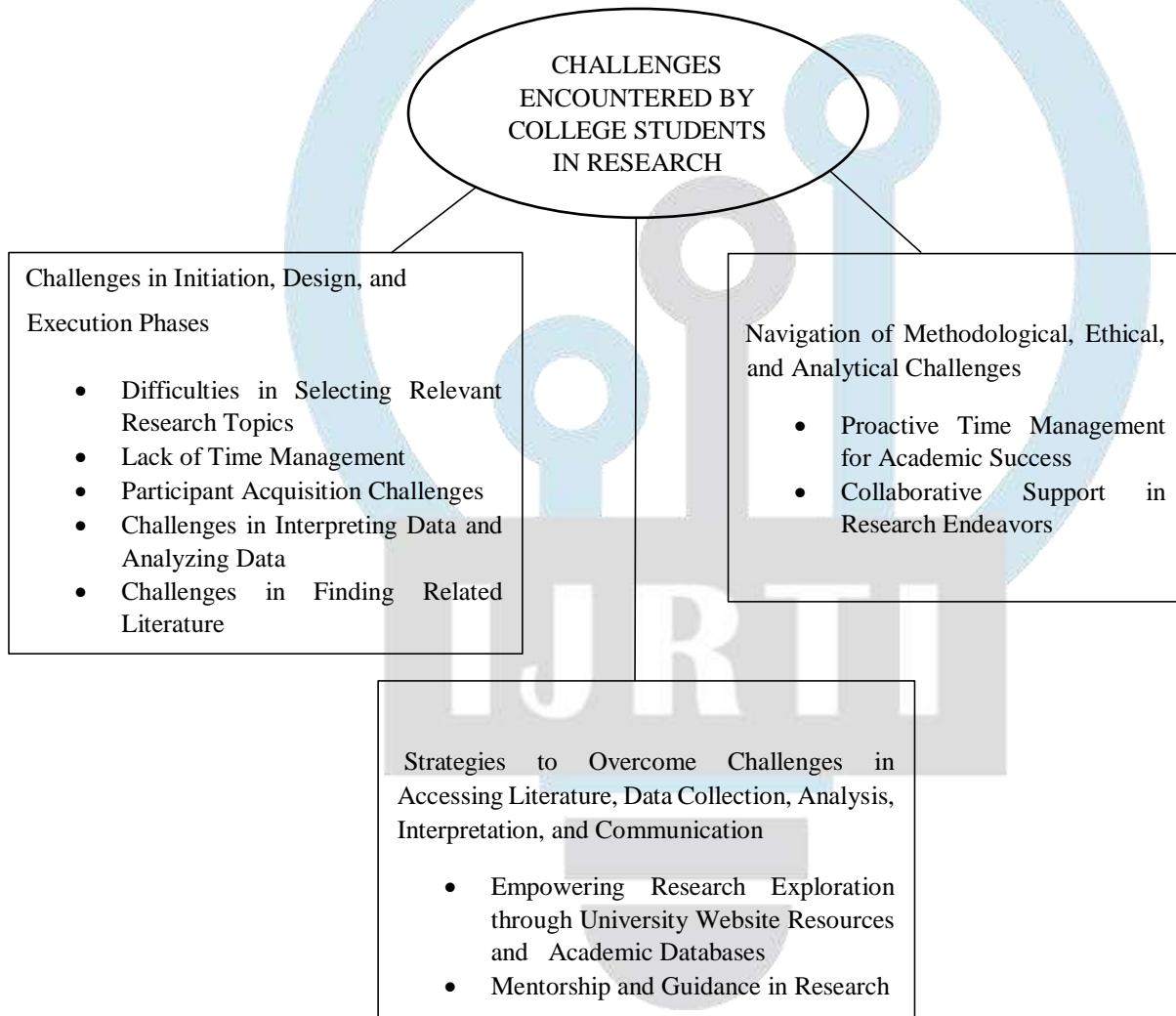


Figure 1. Schematic Diagram of the Study

1.3. Statement of the Problem

The study explored the challenges encountered by college students conducting research in one of the higher Education in Ozamiz City of S.Y 2023-2024. Specifically, at sought answers to the following questions.

1. What are the challenges encountered by college students in the initiation, design, and execution phases of research?
2. How do college students navigate methodological, ethical, and analytical challenges throughout the research process?
3. What strategies do college students employ to overcome the challenges they face in accessing literature, data collection, analysis, Interpretation, and communication of research findings?

2. Methodology

2.1. Research Design

This qualitative study used Yin's (2014) case study design. This research design was well-suited for the investigation as it offered a thorough examination of complex issues within real-life contexts, particularly regarding student research challenges. Yin's case study approach enabled the researcher to delve deeply into the participants' experiences and the difficulties encountered during the research process. This allowed the researchers to thoroughly explore the subtleties of these issues in their specific context.

2.2. Research Setting

The research was conducted at one of the higher education institutions in Ozamiz City, Misamis Occidental. The institution offers a wide range of programs across various fields of study. Known for its accreditation and dedication to student success, it serves as a vibrant center for intellectual inquiry, innovation, and community involvement. The institution aims to participate in outreach activities that facilitate the sharing and practical application of research findings for the broader community. With a focus on empowering students to become lifelong learners and global citizens, this institution plays a crucial role in shaping the future leaders and professionals of society. Ultimately, the institution strives to contribute to the advancement of knowledge and societal development through impactful research outcomes and scholarly publications, cementing its position as a center for research excellence and intellectual discourse with significant contributions to local and global communities.

2.3. Participants of the Study

The participants of the study were 30 students from one of the higher education institutions at Misamis University, Misamis Occidental, who were selected through purposive random sampling. Participants were chosen based on the following criteria: students who were enrolled in a research subject during the second semester of SY. 2023–2024; and students who were willing to participate in the study.

2.4. Research Instrument

Researchers used a researcher-made interview guide to gather data from the participants through an in-depth interview guide, which the thesis committee approved. The interview guide included open-ended questions and discovery questions that focused on exploring the challenges encountered by college students in research. In this study, documentary analysis was used to conduct an in-depth systematic procedure for evaluating and interpreting data. Records such as graduates' profiles, On-the-Job Training ratings, General Weighted Average (GWA), and ratings of graduates from the Licensure Examination for Teachers (LET) in general, professional, and field of specialization obtained from the college were examined and calculated statistically using the Minitab software.

2.5. Data Collection

To be granted permission by the College of Education dean, a permit was requested from her before beginning to conduct the study. The University Director of Research and the Dean of the Colleges were solicited for permission. Once permission was sought and secured, permission was forwarded to the research instructor, and a consent letter was prepared for the participants, explaining the purpose of the study. The face-to-face dialogues conducted by the researchers were then audio recorded as a guide in the succeeding discussion. The retrieved information received confidentiality. Retrieval, transcription, and thematic coding of participant responses were all implemented using HyperRESEARCH software. This is how codes are made, brought with themes, and interpreted the results.

2.6. Ethical Considerations

In accordance with ethical standards, informed consent was gathered from all participants before the interview was conducted, in consonance with the provisions of the Data Privacy Act of 2012. The researchers clearly informed the participants of the purpose of the study, possible benefits, confidentiality measures, and anonymity of the participants. They were made aware that they could withdraw from the study at any given time or opt not to participate without any form of consequences. In addition, participants were informed that the interview questions were open-ended, allowing for truthful and voluntary responses. All possible biases, incorrect guidance, and misinterpretation of data during interviews were eliminated. All interactions and data handling in the study process were guided by transparency, honesty, and integrity.

2.7. Data Analysis

The study utilized both Yin's (2014) six-step method and systematic qualitative analysis to analyze the collected data. Textual data from interviews were meticulously transcribed and analyzed following Yin's methodological framework. Yin's six-step method involves planning, designing, preparing, collecting, analyzing, and sharing phases.

During the planning phase, clear objectives and research questions were established, ensuring alignment with the study's scope.

In the designing phase, the research approach and methodology were crafted, paying attention to the interview format and protocols for data collection. Special consideration was given to tailoring questions to elicit detailed responses on the challenges encountered by college students in research.

Preparation included getting the necessary approvals, such as ethical clearance, and recruiting participants. Resources, such as interview guides and recording equipment, were made readily available to ensure smooth data collection.

Data collection entailed conducting interviews with college students to obtain insights regarding the challenges faced during research. All the interviews were tape-recorded with care, transcribed, and field notes taken if something important was to be noted. The process followed Yin's methodology in making several cycles through coding, category building, and theme identification in data. This process helps find and understand patterns or meaning, with an aim towards deep understanding. After the analysis was accomplished, the findings were disseminated to the greater academic community, perhaps through publications in research reports, conference communications, or published journals. This was done in an attempt to spread results to help in knowledge development in the field and to inform possible interventions within the education setting.

Through the combined use of Yin's method and systematic qualitative analysis, the study sought to provide detailed descriptions of themes supported by quotations. This offered insights into the challenges faced by college students in research and guided future research or interventions in this area.

3. Results and Discussion

3.1. Participants Profile

This study explored the challenges experienced by college students enrolled in a research course at one of the higher education institutions in Ozamiz City during the school year 2023-2024. The study involved a diverse group of participants, including 10 students, four research advisers, and three teachers.

The students, referred to by the pseudonym PS, represented a range of ages, genders, majors, research experience, extracurricular activities, and overall GPA.

Participants aged 20 to 22 included six females and four males. Eight are in their 3rd year of study, and two are in their 4th year. The majors represented are: two students in BS in Marine Transportation, one in BSEd-Filipino, one in BS in Medical Technology, one in BSEd-English, one in BEEd-General, one in BS in Social Work, one in BS in Criminology, one in Social Studies, and one in Business and Management. All participants have previous research experience. Three rate their research skills as low, while seven rate them as medium. Extracurricular involvement includes five in the Local Student Council, one in the Mentors Organization, and one in the MUCLAS Organization. The overall GPAs are high, with two students having a GPA of 1.40, one with 1.42, and two with 1.50.

This study also received support from advisers and teachers who mentored research courses. The group of teacher and adviser participants, identified by the pseudonyms PT and PA, represented diverse specializations and backgrounds. PA1 is a 28-year-old male with a Doctorate in Management, PA2 is a 24-year-old female teacher in Education, PA3 is a 38-year-old female with a master's in childhood education, and PA4 is a 27-year-old male agriculturist pursuing a Ph.D. They have 5, less than 1, 10, and 2 years of experience, respectively, mentoring 25, 2, 5, and 5 students annually.

A group of participants ranging from 10 students to four research advisers and up to three additional teachers were enrolled for the research study. The students who were referred to by the pseudonym PS varied in age, gender, major, research experience, extracurricular activities, and overall GPA. The study presented results in themes derived from three main objectives: exploring the challenges encountered by college students in the initiation, design, and execution phases of research, navigating the methodological, ethical, and analytical challenges throughout the research process, and strategies that college students need to employ to overcome challenges in accessing literature, data collection, analysis, interpretation, and communication of research findings.

A. Challenges in Research

The first objective focuses on the challenges in the initiation, design, and execution phases of research. These challenges encompass the vital themes of selecting relevant research topics, lack of time management, participant acquisition challenges, challenges in interpreting and analyzing data, and challenges in finding related literature.

Difficulty in Selecting Relevant Research Topics

One of the major findings was that students faced significant difficulties in selecting a relevant research topic. This process involves balancing personal interest with academic relevance and practical feasibility. PS1 highlights the need to find a topic that not only sparks personal curiosity but also fits within the constraints of available resources. On the other hand, PS5 emphasized the difficulty in ensuring the topic is current and relatable. Lastly, PS7 mentioned the struggle to balance interest and feasibility. The first objective focuses on the challenges in the initiation, design, and execution phases of research. These challenges encompass the vital themes of selecting relevant research topics, lack of time management, participant acquisition challenges, challenges in interpreting and analyzing data, and challenges in finding related literature.

PS1: "We were looking for a topic that would capture our interest and be practical while also being manageable with our limited time, finances, and skills."

PS5: "Deciding on a research topic is difficult because you need to base it on whether it is recent and relatable, timely, and if students can relate to it."

PS7: "Finding a balance between a topic that is both interesting and feasible within the scope of my resources and time frame was a significant hurdle."

PT1 describes a common issue in research where individuals choose trendy topics without sufficient resources or literature to support their work. They then resort to using readily available standard instruments online, seeking validation to ensure these tools align with their research objectives. On the other hand, PA2 emphasizes that students often struggle to select research topics that are both interesting and feasible. Finally, PA5 highlighted that students frequently struggle to choose a topic that is not only interesting and significant but also feasible within the constraints of time, resources, and expertise.

PT1: "At first, they want to pursue that topic, which is considered as the trend for the moment, without realizing that there are no available resources, literature, or bases to make their observation concrete. Later, they look for the easiest way, like researching available standard instruments online, and then they will submit it to me. Then, I will agree if these statements or constructs are applicable to what they really want."

PA2: "Students frequently encounter difficulties in selecting appropriate research topics, as they may be unsure of what is both interesting and feasible."

PA5: "Students frequently struggle to choose a topic that is not only interesting and significant but also feasible within the constraints of time, resources, and expertise."

The starting point of doing research is choosing a topic for the research itself—without a topic, there is no direction on what to research. While this action is easy to understand, it is often challenging to implement. Most manuscripts submitted to premier journals are rejected with the novelty of the manuscript's topic and, by extension, contribution, often singled out as a reason for rejection, which suggests that the research does not contribute enough to new knowledge, be it from a theoretical perspective or a practical standpoint (Lim, 2022). This can be due to several reasons, for instance, because the topic chosen has already been researched and the rationale for researching that topic again has not been adequately and convincingly justified, such as, for instance, necessity, importance, relevance, and urgency (Lim, 2022 & Lim et al., 2022).

There are many reasons to choose a research topic, which include the interest and strength of the researcher, the research team, and the research organizations. While these are valid reasons for choosing a research topic on their own, they may not necessarily generate new knowledge, particularly when another entity has researched on a similar topic, including in a different context (e.g., country, industry, population). In other words, it is important to ascertain the existence of a topic before choosing that topic for research. Other reasons to avoid when choosing a research topic pertain to gaps and unanswered questions. On their own, gaps and questions that remain unanswered do not necessarily need to be addressed—they should only be addressed if there are valid reasons (e.g., necessity, importance, relevance, and urgency (Lim et al., 2022).

This is an important but daunting task, requiring a balance of personal interest, academic relevance, and practical feasibility in choosing the research topic. Students and instructors must find a way to manage these complexities and develop meaningful, impactful research. Many trendy topics have an appeal, but they cannot be used to develop meaningful inquiry at the academic level. Thus, evaluation and guidance are highly important, so the selected topic can only be of high significance in showing long-term value and contributing to new knowledge selection of a novel, well-justified topic. Researchers believe it is vital to avoid pitfalls that may degrade the general quality and impact of the research.

Lack of Time Management

Lack of time management is considered one of the major challenges faced by college students. PS1 states that it is hard to balance multiple responsibilities, such as attending classes and completing projects, which can take away from the research focus. PS6 states that one tends to get sidetracked by social media while trying to start research work. PS9 also points out the difficulty of allocating attention to other responsibilities, such as attending other classes and managing projects, which competes with the focus needed for research tasks. These factors collectively illustrate the complexities students face in prioritizing and managing their time effectively.

PS1: "I have faced challenges about finding the right time balance."

PS9: "I have other responsibilities that require my attention, such as attending other classes and doing projects, so I cannot focus on my research."

PS6: "I begin my research work but end up scrolling through various social media platforms instead."

PT3 entails that students tend to produce their best work when faced with deadlines. PA2 highlighted the challenge of balancing lectures, assignments, and research commitments, leading to stress and conflicts. PA3 ignites the idea that time management is crucial, especially in balancing research with other academic duties.

PT3: "They can produce output once they are given a deadline."

PA2: "Students must juggle attending lectures, completing assignments, and dedicating sufficient hours to their research, which can result in conflicts and stress."

PA3: "Research adviser: Time management is a significant challenge, especially balancing research with other academic responsibilities."

In academia, effective time management is pivotal. Balancing deadlines, academic rigor, and research demands poses significant challenges for students. Researchers in Higher Education have identified time management as an important factor in student academic performance and retention. Previous research has primarily focused on establishing the connection between time management skills and student persistence and identifying time management concepts that academically benefit higher education students. The body literature provides general information, but each higher education institution's unique student population requires more personalized research and resources (Smith & Johnson et al., 2021).

Higher education students need to have efficient time management of their academic and other time because the diversity of tasks that they are exposed to presents a challenge, especially in research activities (Barbara et al., 2020). The researchers, therefore, concluded that proper time management leads to effective and even more excellent goals and objective results because those who have been trained in proper time management are more likely to plan. This is directly related to our theme of lack of time management in research, as students often find it difficult to allocate enough time for research tasks amidst other responsibilities. This lack of time management may lead to rushed, lower-quality research and increased stress. Hence, improving time management skills is essential for students to conduct thorough and impactful research (Hellstern et al., 2020).

Effective time management is crucial for students to cope with the academic demands. Without proper time management skills, students are often under stress and compromised performance due to the challenges of balancing coursework, assignments, and research commitments. The pressure to meet deadlines while maintaining high-quality work can lead to rushed and lower-quality research. Therefore, students should develop strategic planning and disciplined time management skills in order to set aside enough time for each activity, reduce their stress levels, and increase their productivity. Research suggests that students trained in effective time management are likely to plan effectively, thus producing better academic outcomes and well-being. Improving these skills is essential for students to carry out thorough and impactful research, which would ultimately contribute to their academic success and retention.

Participant Engagement Challenges

Participant Engagement Challenges Data collection is often the most challenging part of research, requiring a lot of time and effort. PS9 and PS10 had problems, especially with finding and engaging respondents, particularly those outside the university setting, such as working professionals. The process is described as time-consuming and mentally draining due to constant monitoring and waiting for responses. Particularly, challenges about the unavailability of students were mentioned; on many occasions during data collection time, they lacked the students within the school boundaries.

PS9: "The most difficult process in research is data gathering. It is not easy to find respondents or participants, especially if they are working outside the University or something. It is time-consuming and mentally draining because we need to monitor and wait for their answers all the time."

PS10: "During our data gathering, we were looking for our respondents. We had a hard time that day because most of the students were from the 3rd year of the BS MAR-E course. They are not around in the school anymore, so we had a hard time that day."

PT5 and PT3 pointed out that they are challenged by a shortage of enough respondents or instruments to be used in their research. They have challenges with nonresponse and availability from both within and outside the institution. They face problems due to respondents' busyness. In contrast, PA1 stressed that students are challenged by accessing resources, recruiting participants, and solving technical problems in the process of collecting data. Finally, PA4 identifies major challenges, including careful planning, acquiring the necessary tools, and gaining access to restricted resources or locations.

PT5: "The biggest problem is that participants/respondents are not available, or the number of instruments collected does not suffice the approved number for the study. Sometimes, the nonparticipative participants/respondents are a hindrance during data collection."

PT3: "For data collection, they found it hard to collect data outside the institution since the respondents/participants were busy most of the time."

PA1: "In the execution phase, students grapple with data collection issues such as access to resources, participant recruitment, and technical problems."

PA4: "One significant difficulty is collecting data effectively, as this process often requires meticulous planning, proper tools, and sometimes access to resources or locations that may be restricted."

Reluctance by stakeholders of university systems to involve themselves in activities meant for the collection of data remains one major impediment to research development activities. Authors observe that responses by the targeted individuals must be highly active, a requirement aimed at validating collected data and maintaining reliability. However, the unwillingness of students and teachers in Pakistani universities is a major threat to the validity of research findings, as it may bias the results and even discredit the research questions (Rafiq et al., 2023). Despite the best efforts of researchers to distribute and conduct survey instruments, there is a trend that respondents send back blank questionnaires or rush through them without giving proper attention (Wajeeha Saleem et al., 2023).

Furthermore, institutional factors such as workload pressures, time constraints, and competing priorities may exacerbate the reluctance of university students and teachers to allocate time and effort toward supporting research initiatives. The hierarchical structure prevalent within academic institutions may also contribute to power differentials that deter individuals from actively engaging in research activities (Khan & Ali, 2020). The challenges encountered in data collection have far-reaching implications for global scholarship and the advancement of knowledge. Addressing these challenges requires concerted efforts to develop contextually appropriate strategies that promote ethical, rigorous, and inclusive research practices worldwide. By identifying common barriers and sharing best practices across diverse cultural and institutional contexts, researchers can enhance the quality and integrity of academic research and contribute to meaningful advancements in knowledge production (Rafiq et al., 2022).

This reluctance among students and teachers to participate in data collection makes research difficult and can affect the accuracy of the results. Heavy workloads, lack of time, and strict academic hierarchies also worsen the problems. Researchers must find practical ways to encourage participation and make it easier for all parties involved to address these challenges. Sharing successful strategies from different places can help improve research quality. Better engagement from respondents ensures more reliable and meaningful research outcomes.

Challenges in Interpreting and Analyzing Data

The data analysis phase presents significant challenges for researchers. PS4 mentioned analytical difficulties, particularly in interpreting complex data. On the other hand, PS7 highlighted challenges in selecting appropriate statistical tests and interpreting results. Lastly, PS8 discussed encountering analytical challenges such as analyzing results and interpreting data.

PS4: "Yes, there were analytical challenges that emerged during our data analysis phase, especially in the Interpretation of complicated data. We tried to control these challenges by seeking help from our instructor and using statistical software to help us interpret the data."

PS7: "Analyzing the data presented difficulties, especially in choosing the appropriate statistical tests and interpreting the results. To overcome these, I utilized statistical software tutorials, sought advice from faculty with expertise in data analysis, and participated in study groups with classmates."

PS8: "I encountered analytical challenges, such as analyzing the results and interpreting the data. Since I do not specialize in these fields, I asked for Support and help from my adviser and co-researcher."

PT2 entails that some groups struggle with treating and interpreting data and formulating findings based on the data collected. PT4 finds applying statistics particularly challenging during analysis, highlighting a common difficulty in effectively utilizing statistical methods. On the other hand, PA5 emphasizes that students often face hurdles in interpreting data accurately, navigating statistical software, and drawing valid conclusions. Additionally, PA6 emphasizes the widespread challenge of selecting appropriate statistical tests for analysis.

PT2: "Sometimes, other groups are struggling in treating data, interpreting, rating the data, creating findings with that data."

PT4: "In the analysis, they found it hard to use statistics for majors on it."

PA5: "During data analysis, students may struggle with data interpretation, using statistical software, and drawing valid conclusions."

PA6: "They often have difficulty in selecting appropriate statistical tests."

In Turkey, they were unable to complete their dissertations because of difficulties in determining the research design, formulating data collection tools, and data analysis, including their level of research knowledge (Wanasinghe, 2020).

In recent decades, statistics educators have made much progress in determining what students need to know and how best to develop their abilities in the domain of data analysis (Garfield et al., 2008). Statistics began to rise in prominence within K-12 classrooms following its addition to the National Council of Teachers of Mathematics (NCTM) Curriculum and Evaluation Standards for School Mathematics (1989). Since then, educators and researchers have learned a lot about how students think and have learned data analysis skills. According to these researchers, along with many others, the primary goal of K-12 statistics education should be statistical literacy (Ben-Zvi et al., 2007).

Data analysis skills are essential for research and have significant implications for Education. Educational curricula should emphasize statistical literacy and data analysis from K-12 onwards to prepare future researchers. This equips students with the skills to handle large datasets, derive insights, and make informed decisions, enabling them to overcome research challenges and advance knowledge. Fostering data analysis skills through education enhances research quality and impact, as well as supports knowledge advancement and evidence-based practices.

Challenges in Finding Related Literature

Finding related literature from many recent publications is also a challenge faced by college students in the research process. One of the first challenges of writing a literature review is finding and selecting the most relevant and reliable sources for the topic.

PS4: "The obstacles that we encountered during this process are when we only have limited access to certain journals and when we have difficulty understanding complex articles."

PS1: "The problem that we faced first was how to pick the right articles from so many that were written on this subject recently."

PS3: "We encountered difficulties in finding related literature for our specific topic."

PS4 highlighted obstacles such as limited access to certain journals and difficulty in understanding complex articles during their research. On the other hand, PS1 initially struggled with selecting the right articles from numerous recent publications on the subject. PS3 encountered difficulties in finding related literature for their specific topic at different stages of their research journey.

PT3: "One of the difficulties they faced was selecting related literature."

PT5: "Students took too much time just finding related literature."

PA2: "I noticed that students usually struggle in finding related literature that fits their study."

PA1: "They have difficulty in selecting appropriate related studies that align with their research topic."

PT3 highlights that the challenge they faced was finding related literature for a difficult topic. PT1 and PT5 emphasized that one of the difficulties they faced was selecting related literature; students spent too much time just finding related literature. On the other hand, PA2 shares that students usually struggle to find related literature that fits their study.

The literature review is the heart of your studies; it is where you will find and understand what "the theoretical and empirical debates in your research are... [it] will give you an understanding of previous research and dominant approaches" (Churchill et al., 2007). It is what will "establish[es] your credibility as a researcher and to argue for the relevance of your research" (Phelps et al., 2007). Despite some academic benefits of writing, it is not easy for many students to write a thesis (Mousavi & Kashefian Naeeni, 2011).

Many students face obstacles in writing up their theses, especially in the literature review section (Fergie et al., 2011). A literature review also ensures you are not duplicating research that's already been done; it will show you how to design your research that will fit your area of interest and will allow you to find the gaps in the research (Hart, 2001). It is a scary process and one that many feel they cannot confidently do in their literature even when they have searched exhaustively (Churchill & Sanders, 2007). Significant implications arise from the challenges of finding and reviewing literature in research-related areas. Firstly, it helps in the improvement of quality research, ensuring that studies are based on a solid foundation of existing knowledge. Secondly, it helps avoid redundancy in research since it identifies gaps and avoids areas already explored. Thirdly, it enhances the credibility of the research since it will demonstrate the researcher's adequate understanding of the field. It helps develop research questions and methods that are better in precision and relevance. In addition, it promotes academic growth by arming the researcher with critical skills in literature analysis and synthesis.

B. Navigating Challenges

The second objective underscores the navigation of methodological, ethical, and analytical challenges. It examines how researchers navigate these challenges in the research process. It includes the vital themes of proactive time management for academic success and collaborative Support in research endeavors.

Proactive Time Management for Academic Success

This comprehensive approach underscores the significance of starting early, managing time efficiently, and conducting regular progress in the research process. PS2 entails that they initially had trouble reaching their busy advisers, but they solved this by scheduling appointments. Their cooperation was key to completing their research. On the other hand, PS9 describes that time constraints and lack of interest from some members hindered their progress. Despite the challenges, they appreciated their advisers' and instructors' guidance, which helped them finish the research and understand the importance of time management.

PS2: "Our research adviser is very busy, so we made an appointment and managed our class schedule to meet her. I guess our cooperation helped us greatly in materializing our research."

PS9: "I can say that research really needs management. No. Not all the time is easy to gather information, and not all materials are accessible. With these struggles, I learned how important time management is."

PT1 entails that the support strategy for students during the research process includes regular check-ins to monitor their progress and resource provision to ensure they have the necessary materials and tools. PT3 fosters an environment where students feel comfortable seeking help, which promotes open communication and a strong mentor-student relationship. On the other hand, PA4 emphasizes that throughout the entirety of the research process, they offer continuous guidance and feedback to help them refine their work and overcome obstacles. They also encourage perseverance, helping them develop resilience despite challenges. By assisting students from the beginning to the end of their projects, you ensure smooth facilitation and make the research journey more manageable and less daunting.

PT1: "My support includes regular check-ins, resource provision, and fostering an environment where students feel comfortable seeking help."

PT3: I also encourage them to do the task despite the hardships they face."

PA4: "Throughout the entirety of the research process, I offer consistent guidance and feedback to students. I encourage them to do their research and seek help from me and their classmates."

According to research, time management develops important intellectual and decision-making qualities in life skills, but it is something that is rarely taught within the academy curriculum. Occasionally, the challenge teenagers face here is understanding that even basic organizing and prioritizing time could help them become so much better equipped for adult life (Dr. Kamaruddin Ilias, PhD et al., 2021). Many teens do not manage their time properly, but the silver lining is that with a small amount of commitment and discipline, the skill of time management can be learned, developed, and used quite easily. Teenagers think it is okay to wait until the last possible time to complete their responsibilities or projects, becoming lifelong procrastinators that create a big problem later in life. This implies aspects of getting stuff at the very last minute and waiting for things, which may lead to problems from high anxiety levels to bad relationships. It is generally defined that teenagers ought to be equipped to take responsibility in activities, meaning planning time efficiently without reminding them that they have some work to attend to or they need help, as stated in an article (Amuta Arumugam et al., 2021).

Effective time management reduces stress and therefore enhances performance not only for a student but also for a teacher and advising. Procrastination leads to stressful last-minute results and poor work. By adopting proactive strategies, such as starting tasks early and conducting regular progress checks, the academic community can handle multiple responsibilities more efficiently.

Research has shown that time management skills enhance academic achievements but also help individuals prepare for adult life and reduce lifelong procrastination and all its consequences. Thus, time management training should be integrated into the curricula as a way to instill responsible behavior and ultimate success.

Collaborative Support in Research Endeavors

One of the coping mechanisms for students is support in research endeavors. Collaboration among students, who bring fresh perspectives and dedication; teachers, who provide expertise and mentorship; and advisers, who offer strategic guidance and Support. PS4 and PS5 highlighted that they need the instructor's guidance and collaboration when facing challenges in research like methodology, ethics, and analysis. On the other hand, PS6 and PS8 sought guidance from their academic advisor, receiving invaluable insights and feedback. Additionally, they attended office hours, joined research seminars, and participated in peer review sessions to gain diverse perspectives. Constant communication with their research adviser helped track and correct mistakes, significantly enhancing your learning experience.

PS4: "When facing methodological, ethical, or analytical challenges, we sought guidance from our instructor, who provided valuable insights and Support throughout the research process. We also looked at books and articles and asked our peers for help with specific problems."

PS5: "While doing our research, we asked our advisors and peers for help when we faced challenges with methods, ethics, or analysis. Their advice and feedback helped us solve difficult problems and keep our study accurate."

PS6: "I sought guidance from my academic advisor, who provided invaluable insights and feedback. Additionally, I attended office hours of other professors, joined research seminars, and participated in peer review sessions to gain diverse perspectives on my work."

PS8: "We find guidance through regular communication with our research adviser in order that we can track our mistakes and get corrected in due time. We are only relying on our adviser because conducting research is not what we are at ease with doing. Additionally, we learned many things from her."

PT1 and PT2 assist students within their capabilities and consult with their co-teacher when additional help is needed. The teacher indicates that they provide support when students are unable to complete tasks on their own. On the other hand, PT4 explains that teachers provide combining resources, support structures, and skill building activities; teachers empower students to navigate data analysis and Interpretation confidently, fostering their ability to undertake more meaningful research projects. PA3 explains that he helps students by regularly checking their progress and giving helpful feedback to make sure their research methods match their goals.

PT1: "I will do as much as I can for them. If not, I will seek advice from my colleague."

PT2: "As a teacher, I also helped them when they couldn't do things on their own."

PT4: Providing them with resources, support, and activities to build skills helps students understand and handle data analysis and Interpretation for better research projects."

PA3: "At each step along the way within the research process, I would lead students and inspect their work so that they provided good methods adequate for their aim."

The Conservation of Resources Theory says that getting support makes it easier for people to deal with challenges. Research shows that when teachers and classmates support students, it helps lower their stress and improves their learning and grades (Raufelder et al., 2022). Another study found that teachers who guide and encourage their students help them become better at doing research, stay more interested, and achieve better results. This highlights how important it is for teachers to build strong, supportive relationships with their students to help them succeed in their research (Stefan Kulakow et al., 2022).

Collaboration in research endeavors is crucial because it fosters a supportive environment where students benefit from diverse perspectives, mentorship, and strategic guidance. This approach not only enhances their understanding of methodology, ethics, and analytical challenges but also continuous learning and improvement through feedback and engagement in academic communities. By maintaining constant communication with advisers and actively participating in research activities, students can effectively navigate complexities, refine their skills, and achieve more robust research outcomes.

C. Strategies to Overcome Challenges

The third objective delves into strategies to overcome challenges in accessing literature, data collection, analysis, Interpretation, and communication. It aims to enhance research endeavors by utilizing university website resources and academic databases, along with mentorship and guidance. It includes vital themes of empowering research exploration through university website resources, academic databases, mentorship, and guidance in research.

Empowering Research Via University Websites and Databases

Participants form the backbone of any research project. They provide data and validation. PS1 means they access relevant literature through academic databases and libraries like Google Scholar. PS2 and PS4 mean they use scholarly articles from PubMed and Google Scholar. Participants are researchers who design and conduct the study, and subjects, including students, teachers, and advisers, are involved in research collaboration. They give original data by way of surveys, interviews, and observations so that the findings are based on real-life experiences. Their diverse perspectives and feedback make the study more credible and applicable, so the research is robust and impactful.

PS1: "We go about accessing relevant literature for our research project by thoroughly searching in academic databases and libraries just like Google Scholar."

PS2: "We utilized applicable scholarly articles using Google Scholar."

PS3: "To carry out our study, we used academic databases like PubMed and Google Scholar to find relevant literature."

To support them, teachers and instructors implemented several instructional aids. PT1 and PT2 provided a University Website Navigation Aid, demonstrating how to use free university resources like Google Scholar, gate, and other databases, which simplifies their study process and helps them identify useful information. PA3 provided a Resource Access Guide, listing key sites and databases they need to access for their research, ensuring they are well-equipped with the necessary tools and information to support their efforts. These measures collectively enhance the participants' ability to navigate academic resources, conduct effective literature searches, and access crucial research sites, thereby improving the overall quality and impact of their research activities.

PT1: "I will give them the free website given by the University, like how to browse Google Scholar, gate, and other resources in which it is much easier for them to study and identify useful information or ideas."

PT2: "I taught them how to do a literature search."

PA3: "I gave them the possible sites that they need to access, like listing key sites."

To support this theme, the "Information Search Process" (ISP) theory by Carol Kuhlthau (2004) is relevant. This theory posits that researchers undergo a series of stages—initiation, selection, exploration, formulation, collection, and presentation—when conducting information searches. It highlights the importance of access to diverse and reliable sources, such as those provided by university websites and academic databases, in influencing the quality and depth of the study (Caswell et al., 2020). One pertinent study that exemplifies the use of university resources and academic databases is "The Impact of Open Access and Collaboration on Citation Rates in Astronomy," which is available on Google Scholar. This research explores how access to open-access resources and collaborative networks through academic databases enhances citation rates and accelerates the dissemination of scholarly knowledge in the field of astronomy (Joshua D. Burkhardt & Alberto Accomazzi 2021).

Empowering research exploration through university website resources and academic databases enhances accessibility to scholarly information, enabling students, educators, and researchers to easily find and utilize relevant resources. This accessibility fosters greater collaboration among students, advisers, and teachers, leading to innovative and interdisciplinary research projects. Additionally, streamlined and well-organized online resources reduce the time and effort required to locate pertinent information, allowing researchers to focus on analysis and synthesis, thereby improving the quality and impact of their work.

Mentorship and Guidance in Research

Research instructors and advisers play crucial roles in guiding and supporting students throughout their research projects. PT1, PT2, and PT3 research emphasize the importance of regular output checks, adherence to protocols, and seeking consultation with teachers, as PT3 advises, "Always Approach with Caution," highlighting the role of participants. On the other hand, PT2 also stresses time management and preparation for potential failures.

PA1 complements this by helping students anticipate obstacles and strategize solutions, PA2 establishes clear communication and regular check-ins, and PA3 provides structured guidance sessions with practical advice. This combined approach ensures that students are well prepared, supported, and guided, leading to more successful research outcomes.

PT3: "I check their output now and then to ensure that they are on the right path. I always say, "Always Approach with Caution." Take note that your participants/respondents are vital individuals who will

make your study possible." PT2: "In all the things they do in research, they must consult their teacher first, and they need to manage their time also."

PT1: "Also, I always instruct them to follow process and protocol because doing research is not easy, so they need to prepare themselves even when facing failures and frustrations."

PA1: "By anticipating potential obstacles and figuring out how to address them, students can better manage their projects and mitigate the impact of unforeseen challenges."

PA2: "To assist students, I establish clear communication channels and set regular check-ins to monitor progress."

PA3: "I offer structured guidance sessions designed to support students throughout their research process. I give them advice and suggestions on how to conduct research properly and suggest that quality mentoring is critical for college students' success."

This may be particularly the case for students from marginalized backgrounds, given that many of these students are underrepresented in their academic programs and encounter both subtle and overt bias in academic settings. Research mentors play a pivotal role in influencing trainees' research career intentions, academic persistence, self-efficacy, academic identity, and a range of other attributes associated with academic success (Denekner et al., 2024). Therefore, for the successful completion of the thesis, the supervisor is expected to provide academic advice and guidance and give the student moral support and encouragement. The role of the supervisor is crucial because student motivation and the relationship between the student and supervisors are the most important factors influencing the progress of a student's research project (Peiris et al., 2019).

Effective mentorship and guidance in research are crucial for supporting students through their projects, ensuring they follow protocols, manage time well, and receive constructive feedback. By anticipating challenges and offering strategic advice, mentors help students develop resilience and problem-solving skills. Clear communication and regular check-ins foster a supportive environment where students can confidently navigate their research, leading to improved project outcomes and preparing them for future academic and professional. Effective mentorship in research is crucial for student success, especially for those from marginalized backgrounds. By offering culturally responsive Support, mentors create inclusive environments that enhance student engagement and success. This ongoing Support not only helps students navigate the complexities of research but also strengthens the overall research environment by promoting quality and integration into practice.

4. Summary, Findings, Conclusions and Recommendations

4.1. Summary

The study delved into the challenges encountered by college students in conducting research in one of the higher Education in Ozamiz City of S.Y 2023-2024. Specifically, this study explored the challenges encountered by college students in the initiation, design, and execution phases of research, navigated the methodological, ethical, and analytical challenges throughout the research process, and strategies college students need to employ to overcome challenges in accessing literature, data collection, analysis, Interpretation, and communication of research findings. The researchers interviewed 10 students and teachers, including three research teachers and four research advisers. From the three objectives, there are nine themes in total from the analysis of their in-depth interviews. The study utilized a researcher-made interview guide to elicit the necessary data from the participants. Yin's case study method was employed. Additionally, the study utilized a qualitative statistical software called HyperRESEARCH to support data analysis.

4.2 Findings

The following were the key findings of the study:

- a) During the research process, students faced challenges in selecting relevant topics that balanced personal interest with academic feasibility, managing time amidst other responsibilities, acquiring participants, particularly from outside the University, interpreting complex data, choosing appropriate statistical tests, and accessing relevant literature. These hurdles often required Support from instructors and peers.
- b) Proactive time management and collaborative Support was vital for students navigating methodological, ethical, and analytical challenges. Scheduling with advisers, continuous guidance, and participation in seminars and peer reviews helped manage research efficiently and address complex issues.
- c) To overcome challenges in accessing literature, data collection, and analysis, students utilized university website resources, academic databases like Google Scholar and PubMed, and instructional aids. Regular output checks, adherence to research protocols, and structured guidance sessions kept students on track, while clear communication and proactive planning supported successful research outcomes.

4.3. Conclusion

Based on the findings of the study, the following conclusions are drawn:

- a) Students faced significant challenges in selecting research topics, managing time effectively, acquiring participants, interpreting data, and accessing literature. They relied on support from instructors and peers to navigate these hurdles, highlighting the importance of collaboration in research success.
- b) Addressing methodological, ethical, and analytical challenges required proactive time management and collaborative efforts. Students benefited from structured guidance and teamwork with advisors and peers, enhancing their research capabilities and effectively meeting academic standards.
- c) Utilizing university resources and academic databases enabled students to overcome challenges in accessing literature, data collection, analysis, Interpretation, and communication. Clear communication and proactive problem-solving approaches further supported students in achieving successful research outcomes, emphasizing the role of resourcefulness and Support in academic research.

4.4. Recommendations

- a) The University Research Office should conduct enhanced workshops at the beginning of each semester to assist students in selecting research topics that balance personal interest with academic feasibility. This will ensure that students are well-prepared to choose variable research topics and produce high-quality proposals.
- b) Academic Advisors and Course Instructors should provide students with time management plans at the start of their research projects. These plans should include key deadlines and regular check-ins every two weeks to help students stay organized and manage their time effectively
- c) The University Library should host regular workshops and tutorials on how to search for and use academic databases effectively. These sessions could be recorded and made available online, ensuring students can access the help they need at any time.
- d) The University Library and IT Department should improve access to academic resources by offering additional training at the start of each semester and forming partnerships with other libraries or institutions. This will help students access the literature they need for their research.
- d) Future researchers are recommended to conduct a long-term study that follows students over several semesters. This can help identify ongoing challenges and see how well the support strategies work overtime. By doing this, we can better understand what students need as they progress and improve how we support them in their research.

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