

Revisiting The Bilingual Education Policy Mitigating Teacher's Taglish Communication for Strict Implementation Towards Corrective Action

Arlen P. Roncesvalles
Philippine Christian University-Dasmarinas
arlen.roncesvalles@deped.gov.ph

Publication Date: September 6, 2025

DOI: 10.5281/zenodo.17096808

Abstract

The Bilingual Education Policy (BEP) in the Philippines underscores the importance of English as the country's second language, given its role in advancing economic competitiveness, political participation, and educational mobility in the global context. The policy mandates that English be used as the medium of instruction in English subjects and in other content areas where it is designated as the dominant language. This study examined the extent of the Bilingual Education Policy (BEP) implementation in English classes, focusing on four variables: English language use in instruction, English language use in content learning, teachers' training, and teacher certification for language competence. Using weighted mean, frequency counts, and paired t-tests, findings revealed varying levels of compliance. Results showed a

significant difference between the mandated and actual use of English in instruction, with actual implementation falling below expectations, suggesting the prevalence of Filipino or Taglish in classroom discourse. Conversely, English use in content learning aligned closely with policy, as no significant difference was observed between mandated and actual practices. Teachers' training and certification also showed no significant differences, indicating that what is mandated is generally observed in practice. However, slight gaps remain in training opportunities and certification standards. The findings highlight the persistent challenge of English language use in instruction, which requires corrective action through stricter monitoring and supportive interventions.

Keywords: *bilingual education policy, Taglish, code-switching, language policy implementation, corrective action*

INTRODUCTION

English is considered the international language because it aids the smooth transaction of the economy, politics, technology, and education in the world. As a result, Philippines considers English as its second language, this has been stipulated in 1987 Bilingual Policy Education (BPE), where Article XIV Section 7 of the 1987 Philippine Constitution mandates the use of Filipino and English as mediums of

instruction (MEI) on school subjects. Specifically, putting distinction on English as the second language to be used on language and literature subjects meant for English subjects. Highlighting that English language teachers must set the standard, where English is utilized in the English subject classes. However, codeswitching or the use of Taglish by English teachers as a current classroom practice suggests otherwise making educators use code switching or the combination of Tagalog and English to explain concepts to students in subjects intended for English language classes. This violates the BEP set by the state. This gap in implementation creates an opportunity for this study to revisit the Bilingual Education Policy and look into the current practice of English language teachers in High School who tend to use Taglish as communicative strategy in aiding communication in their respective classrooms and eventually propose a corrective action.

The Bilingual Education Policy (BEP) has established the use of both Filipino and English as mediums of instruction, yet several studies suggest that its implementation has faced challenges due to the persistent use of Taglish as a pedagogical tool (Villanueva & Gamio, 2023; Borlongan, 2009). While code-switching serves as a strategy to aid comprehension (Candilas, Villanueva, Taglinao, & Villarta, 2023), researchers argue that it may hinder full proficiency in English and limit students' mastery of the target language (Mangila, 2018; De Castro et al., 2021; Memory, 2018).

With regard to English language use in instruction, Nunan (2003) asserts that English has become a foundational element of educational frameworks across Asia, supporting knowledge application in real-world contexts. This view is reinforced by Wyatt & Borg (2011) and Bunch (2013), who stress the importance of pedagogical language knowledge in integrating English with content learning. They highlight that language teachers must actively collaborate with subject teachers to reinforce literacy and numeracy development, a key aspect of applied knowledge across disciplines.

In terms of teaching strategies for literacy and numeracy, Frigo et al. (2004) and Md-Ali, Karim, & Yusof (2016) emphasize that effective instruction should incorporate explicit teaching, scaffolding, and contextualized learning to enhance students' reading, writing, and mathematical skills. The findings of Pramono, Yulianto, & Caridah (2024) further highlight the need for differentiated instruction and numeracy integration, aligning teaching methodologies with sustainable development goals (SDGs) in language education.

The development of higher-order thinking skills (HOTS) in English teaching has been extensively studied. Rahman & Manaf (2017) and Budiyanto, Harapan, & Purwanto (2024) argue that Bloom's Taxonomy remains a vital tool for integrating critical and creative thinking into language instruction. They emphasize that English teachers should utilize inquiry-based learning, digital storytelling, and collaborative discussions to help students analyze literary texts critically and generate original responses.

The proficient use of the English language by teachers directly correlates with student achievement (Racca & Lasaten, 2016). Their study found that students performed better in English-taught subjects when guided by highly proficient educators. Similarly, Torreces & Brillantes (2022) discovered that pre-service teachers with strong English skills demonstrated better classroom management, clearer explanations, and more engaging teaching strategies. These findings underscore the need for continuous language proficiency training among educators.

Furthermore, teacher training plays a pivotal role in the implementation of bilingual education policies. According to Gallego & Zubiri (2011), teacher competencies in both English and Filipino are essential for successful BEP implementation. However, Bautista (2008) and Espina (2015) argue that gaps in teacher training—especially in rural areas—hinder effective bilingual instruction. They stress that educators frequently rely on code-switching to facilitate comprehension, further deviating from the intended

goals of BEP. This highlights the need for stronger language training programs to support teachers' bilingual competencies.

Lastly, teacher certification serves as a quality assurance mechanism in language education, ensuring that teachers possess the necessary linguistic skills and pedagogical competence (Estose, Futralan, & Chona, 2018). Their study found a strong positive correlation between certification and professional competencies, with certified teachers demonstrating greater proficiency in instructional delivery. Madrunio, Martin, & Plata (2016) further emphasize that certification programs help maintain high teaching standards, requiring educators to meet proficiency benchmarks. However, Matalines (2023) points out that many teachers in rural areas lack access to professional development programs, limiting their ability to meet certification requirements. Addressing these challenges through government-supported training initiatives is crucial for enhancing teacher competency in language instruction.

The Bilingual Education Policy (BEP) in the Philippines mandates the separate use of Filipino and English as mediums of instruction in different subjects to promote bilingual proficiency. However, despite this policy, teachers frequently use Taglish (code-switching between Filipino and English) in classrooms, which weakens the intended learning outcomes. To analyze the impact of teachers' code-switching practices and propose corrective measures, this study is anchored on Cummins' Linguistic Interdependence Hypothesis (1979, 1981), which explains how bilingual proficiency develops and why excessive Taglish may hinder the policy's effectiveness. According to Cummins, proficiency in one language (L1) supports the acquisition of a second language (L2), provided that both languages are properly developed and maintained. However, if language boundaries are not strictly followed, as in the case of frequent Taglish usage, students fail to develop full academic proficiency in either Filipino or English, which in turn disrupts language transfer and weakens their overall linguistic competence. This aligns with the argument that teachers' excessive use of Taglish contradicts the goals of BEP, making strict implementation and corrective action necessary.

Cummins also emphasizes the importance of structured bilingual education, where each language should be used separately for specific academic purposes to maximize cognitive and linguistic benefits. Under BEP, English is designated to be used in English Subjects. However, when teachers frequently mix both languages, students become overly dependent on code-switching rather than fully engaging in the academic use of English. This weakens their ability to master English as an academic language, ultimately leading to poor language proficiency and reduced comprehension of subject content. Furthermore, Cummins' theory warns that improper bilingual instruction can result in semi-lingualism, where students fail to become fully proficient in either language. If teachers continue to use Taglish excessively, students may struggle with grammar, vocabulary, and comprehension, affecting their academic performance in English-taught subjects.

Given these implications, Cummins' theory strongly supports the need for corrective action in BEP implementation. The study advocates for stricter language separation policies, reinforcing the appropriate use of English and Filipino in their designated subjects. Corrective measures should include teacher training programs on bilingual instruction, professional development workshops on effective language compartmentalization, and stricter monitoring of BEP compliance. By implementing these changes, the policy can be more effectively enforced, ensuring that students gain full proficiency in both Filipino and English without over-reliance on Taglish as a linguistic crutch. Ultimately, Cummins' Linguistic Interdependence Hypothesis provides the theoretical foundation for this study by explaining why reducing Taglish use and reinforcing strict bilingual education policies are necessary steps toward strengthening English language acquisition in Philippine classrooms.

METHODS

This study employed the quantitative descriptive design particularly to find to what extent is Bilingual Education Policy implemented in English classes as implementation as against as mandated in terms of: English Language Use in Instruction, English language use in content, English language teachers' training, certification of teacher for language content and competence.

The process of data collection in this study began with careful planning and preparation to ensure that the research objectives were clearly aligned with the methods used. The primary aim was to determine the extent to which the Bilingual Education Policy (BEP) is implemented in English classes, particularly in relation to English Language Use in Instruction, English Language Use in Content Learning, English Language Teachers' Training, and Certification of Teachers for Language Content and Competence. To address these objectives, the researcher developed research instruments in the form of questionnaires designed to capture quantitative data. Prior to full implementation, the instruments underwent pilot testing to establish reliability and clarity of the items.

Permission to conduct the study was formally sought from the Division Office and the school principal to ensure compliance with institutional protocols. In line with ethical research standards, all participants were informed of the purpose and scope of the study and were assured that their participation was voluntary. Informed consent was obtained prior to data collection, and confidentiality of responses was strictly observed to protect the identities of the respondents. After these procedures were secured, the validated questionnaires were distributed to a larger population of teachers within the selected school. The systematic process ensured that the data gathered was valid, reliable, and reflective of the actual implementation of the BEP, thereby providing a sound basis for analysis and formulation of corrective actions.

The primary instrument used in this study was a researcher-developed questionnaire that was anchored on the provisions and guidelines of the Bilingual Education Policy (BEP). The BEP served as the main framework in crafting the questions, ensuring that the instrument directly reflected the objectives of the policy and its implementation in the classroom.

To ensure the accuracy, clarity, and reliability of the research instrument, the questionnaire underwent a rigorous validation process. Initially, the draft questionnaire was submitted to a panel of experts composed of language educators like Master Teachers, policy implementers like the Assistant Principal, and research specialists or the research adviser who reviewed the items for content validity, relevance, and alignment with the provisions of the Bilingual Education Policy (BEP). Their comments and suggestions were incorporated to refine the wording, format, and scope of the questions. After revisions, the instrument was pilot-tested with a small group of teachers who were not part of the actual respondents. The pilot test allowed the researcher to assess the clarity of instructions, the comprehensibility of the items, and the time required to complete the questionnaire. Feedback from the pilot participants was analyzed and used to further improve the instrument before its final administration. Through this validation process, the instrument achieved greater reliability and credibility in measuring the variables under investigation.

The participants of the study were recruited through a formal and ethical process that ensured fairness, transparency, and voluntary participation. After securing approval from the Division Office and the school principal, the researcher identified potential participants based on their direct involvement in implementing the Bilingual Education Policy (BEP), particularly English language teachers in the selected school. Prior to their participation, the purpose and scope of the study were thoroughly explained to the teachers, highlighting how the data would be used solely for academic purposes and policy improvement. Informed consent forms were distributed, which outlined their right to voluntarily participate, refuse, or withdraw from the study at any stage without penalty. To uphold confidentiality, participants' identities and responses were kept strictly anonymous and were coded only for analysis. The researcher also ensured that

no harm, bias, or undue pressure was exerted during recruitment, thereby safeguarding the ethical principles of respect, beneficence, and justice throughout the process.

The data gathered through the questionnaires were tallied, organized, and subjected to statistical analysis to answer the research questions. To determine the extent of Bilingual Education Policy (BEP) implementation in terms of English Language Use in Instruction, English Language Use in Content Learning, English Language Teachers' Training, and Certification of Teachers for Language Content and Competence, the weighted mean was employed. This statistical tool was chosen because it is appropriate for analyzing data gathered from Likert-scale type questionnaires, as it provides the average perception of respondents across different indicators. To further interpret the results, the paired t-test was also employed in the study to compare the means of two related groups and to determine whether a significant difference exists between them. This statistical tool was particularly useful in assessing changes or variations in responses, such as comparing teachers' practices or perceptions as what is mandated versus what is implemented as related to the Bilingual Education Policy.

To analyze the data gathered from the survey questionnaire, the following statistical tools were used:

1 Paired T-Test

The 1 paired t-test was employed in this study to determine whether there was a significant difference between the mandated provisions of the Bilingual Education Policy (BEP) and its actual implementation in classroom settings. This statistical tool was deemed appropriate because it compares two related groups—in this case, the expected policy requirements and the reported classroom practices of teachers. The analysis revealed whether the gaps observed between policy and practice were statistically significant, thus providing evidence-based insights into the extent of compliance with the BEP. The results of the paired t-test served as a basis for identifying areas where corrective action may be necessary to align instructional practices with policy mandates.

The statistical analyses were performed using IBM SPSS to ensure accuracy and reliability in data interpretation.

DISCUSSION

The findings are organized according to the major variables investigated, namely: English Language Use in Instruction, English Language Use in Content Learning, English Language Teachers' Training, and Certification of Teachers for Language Content and Competence. The results are interpreted using appropriate statistical tools such as weighted mean, frequency counts, percentages, and the paired t-test to determine both the extent of Bilingual Education Policy (BEP) implementation and the significant differences between policy mandates and actual classroom practices. The discussion integrates both numerical data and interpretative analysis to provide a comprehensive understanding of the current state of BEP implementation and to identify areas that require corrective action for stricter compliance with the policy.

1.1 Extent is Bilingual Education Policy implemented in English classes as implementation as against as mandated in terms of English Language Use in Instruction

Table 3.1

Comparison of English language use in instruction as mandated vs. English language use in instruction as implemented

Pair	Variable	Mean	Descriptive Level	t	df	p	Significance
Pair 1 English used as instruction	As mandated	3.833	To a high extent	2.36	13	0.035	Significant
	As implemented	3.333	To a moderate extent				

The Mean of Variable 1 in terms of English used in instruction as mandated is 3.83v(to a high extent), while the Mean in terms of English used in instruction as implemented is 3.33 (to a moderate extent). This suggests that actual implementation is lower than the mandated level.

The t-Test Significance which was utilized in this study is the two-tailed test, where this is more appropriate for this study, which aims to determine whether there is any significant difference between the actual and mandated implementation, regardless of the direction. Where the result of t Stat is equal to 2.360 and the p-value is equal to 0.035. Thus, this is less than the 0.05 which is the alpha. This means there is a significant difference between English language use in instruction as mandated vs. English language use in instruction as implemented.

Additionally, since the p-value is less than 0.05, the difference is statistically significant. Since t Stat is positive, it suggests that the mandated use of English is significantly higher than the actual implementation is significantly lower than the mandated use of English. This means that English is used in instruction less than what is mandated by the policy.

1.2 Extent is Bilingual Education Policy implemented in English classes as implementation as against as mandated in terms of English Language Use in Instruction

Table 3.2

Extent is Bilingual Education Policy implemented in English classes as implementation as against as mandated in terms of English Language Use in Instruction

Pair	Variable	Mean	Descriptive Level	t	df	p	Significance
Pair 2 English used as content learning	As mandated	4.166	To a high extent	0.618	13	0.547	Not Significant
	As implemented	4.071	To a high extent				

The Mean of Variable 2 in terms of English language use in content learning as mandated is equal to 4.17 (to a high extent), while Mean of Variable 2 English language use in instruction as implemented is 4.07 (to a high extent) .The means are very close, indicating that the actual implementation of English use in content learning is **nearly equal to what is mandated**. And the extent shows that it is interpreted as both to a high extent.

The two tailed test score revealed t Stat is 0.618 and the p value (two tailed) 0.5470 which is greater than 0.05 alpha, thus the **difference is not statistically significant.Hence, we fail to reject the null hypothesis.**

This means that there is no significant difference between the mandated and actual implementation of English use in content learning.

1.3 English Language Teachers' Training

Table 3.3

Extent is Bilingual Education Policy implemented in English classes as implementation as against as mandated in terms of English Language Teachers' Training

Pair	Variable	Mean	Descriptive Level	t	df	p	Significance
Pair 3 Teacher's Training	As mandated	4.007	To a high extent	1.408	13	0.183	Not Significant
	As implemented	3.714	To a high extent				

The Mean of Variable 3 in terms of English language teacher's training as mandated is equal to 4.01(to a high extent) , while Mean of Variable 3 English language teacher's training as implemented is equal to 3.71(to a high extent). **Thus, suggests that the actual implementation of teacher's training is slightly lower than the mandated level.**

The p value (Two-tailed test) is equal to 0.183 which is greater than 0.05 alpha thus **interprets as Not significant.**

This means that there is **no significant difference between the mandated level and the actual implementation of English teachers' training.**

1.4 Certification of Teacher for Language Content and Competency

Table 3.4

Comparison of English language use in teacher's certification as mandated vs. teacher's certification as implemented

Pair	Variable	Mean	Descriptive Level	t	df	p	Significance
Pair 4 Teacher's Certification	As mandated	4.007	To a high extent	1.209	13	0.248	Not Significant
	As implemented	3.556	To a high extent				

The Mean of Variable 1 (Mandated Level) is equal to 4.007(to a high extent), while the Mean of Variable 2 (Actual Implementation) is equal to 3.556(to a high extent). While Attendance in English related training or workshops and or LAC Sessions scores 3.79 (to a high extent) as mandated and 3.86 (to a high extent) as mandated (to a high extent) as implemented.

Since the p-value is 0.248 which is less than 0.05, the difference is **statistically not significant** .We accept the null hypothesis. This means that there is a no significant difference between the mandated and actual implementation of English teachers' certification.

1.To what extent is Bilingual Education Policy implementation in English classes implemented as against as mandated in terms of:

1.1. English Language Use in Instruction

The 1987 BEP states: a... The separate use of Filipino and English should be observed. As policy suggests it is mandatory that English subjects must adhere to using English as medium of instruction, however as study suggests that English is used in instruction **less than what is mandated by the policy**. Hence implies that either Filipino or Taglish is utilized during classroom discussions.

1.2. English Language Use in Content Learning

The 1987 BEP states: d. content learning should not be sacrificed because of the variations in the phasing in of the languages. This mandate is supported by the actual implementation where the study revealed **there is no significant difference between the mandated and actual implementation of English use in content learning**.

1.3.English Language Teachers' Training

The 1987 BEP states: development of a program to train teachers...

The result of the study suggests that there is **no significant difference between the mandated level and the actual implementation of English teachers' training**. Thus what is mandated is also followed to implementation.

1.4. Certification of teacher for language content and competence

BEP states that: certification of teachers for language and content competence, this **there is no significant difference between the mandated and actual implementation of English teachers' certification**. Hence what is mandated is not what transpires to what is implemented.

The study recommends further develop guidelines for proper BEP implementation where teachers and learners could easily follow and know the rewards and consequences of following the BEP.

REFERENCES

- Ball, J. (2011). Enhancing learning of children from diverse language backgrounds: Mother tongue-based bilingual or multilingual education in the early years. UNESCO. <http://unesdoc.unesco.org/images/0021/002122/212270e.pdf>
- Bautista, M. L. S. (2000). Defining Standard Philippine English. In M. L. S. Bautista & G. Sutton (Eds.), *Philippine English: Linguistic and literary perspectives* (pp. 49–72). Hong Kong University Press.
- Bautista, M. L. S. (2004). Tagalog-English code switching as a mode of discourse. *Asia Pacific Education Review*, 5(2), 226–233.
- Bernardo, A. B. I. (2000). The multifaceted dimensions of language proficiency in learning: Lessons from the Math performance of bilinguals. *International Journal of Bilingual Education and Bilingualism*, 3(2), 91–103. <https://doi.org/10.1080/13670050008667702>

- Bautista, C., Bernardo, A., & Ocampo, D. (2008). When reforms don't transform: A case study on Philippine bilingual education. *Philippine Journal of Linguistics*, 39.
- Borlongan, A. M. (2021). English-Tagalog code-switching in English language teaching. *Philippine Journal of Linguistics*, 52, 1-16. https://www.academia.edu/English-Tagalog_codeswitching_in_English_language_teaching
- Crystal, D. (1997). *English as a global language*. Cambridge University Press.
- Cummins, J. (1979). Cognitive/academic language proficiency, linguistic interdependence, the optimum age question and some other matters. *Working Papers on Bilingualism*, 19, 121–129.
- Daongan, A., et al. (2025). Bilingual education in Asia: Language use, academic impact, and recommendations for effective practices. *Journal of Multidisciplinary Research and Development*, 2(1), 69–82. <https://doi.org/10.56916/jmrd.v2i1.1021>
- Darling-Hammond, L., et al. (2005). *Teacher preparation and professional development in APEC members*. APEC Education Network.
- Dearden, J. (2014). English as a medium of instruction – a growing global phenomenon. British Council. https://www.britishcouncil.org/sites/default/files/e484_emi_-_cover_option_3_final_web.pdf
- Dekker, D., & Young, C. (2005). Bridging the gap: The development of appropriate educational strategies for minority language communities in the Philippines. *Current Issues in Language Planning*, 6(2), 182–199. <https://doi.org/10.1080/14664200508668281>
- dela Cruz, J. (2017). Make sure you follow the APA format properly: Do a Google search of the proper APA citation. *Journal of Proper APA Citation*, 1(2), 3-4.
- Domede, A. (2023). Code-switching as a teaching strategy in English language classrooms: Exploring students' attitudes and perceptions. *Psychology and Education Journal*, 15(4), 285–292. <https://doi.org/10.5281/zenodo.10211750>
- Doe, J. (2017). Make sure you follow the APA format properly: Do a Google search of the proper APA citation. *Journal of Proper APA Citation*, 1(2), 3-4.
- European Commission. (2017). *The role of education in promoting multilingualism*. Publications Office of the European Union.
- Gallego, M. K., & Zubiri, L. A. (2011). MTBMLE in the Philippines: Perceptions, attitudes, and outlook. *Frontiers of Language and Teaching*, 2, 405–414.
- Gamiao, B., & Villanueva, B. (2022). Effects of code-switching among college instructors and students in a Philippine classroom setting. *American Journal of Multidisciplinary Research and Innovation*, 1(2), 78–85. <https://doi.org/10.54536/ajmri.v1i2.292>
- Garcia, O., & Wei, L. (2014). *Translanguaging: Language, bilingualism, and education*. Palgrave Macmillan.
- Gill, S. K. (2014). *Language policy challenges in multi-ethnic Malaysia*. Springer.
- Gonzalez, A. (1998). The language planning situation in the Philippines. *Journal of Multilingual and Multicultural Development*, 19(5), 487–525. <https://doi.org/10.1080/01434639808666370>

- Gonzalez, A. (2009). Language, ethnicity, and nationhood: The Philippine experience and beyond. *Asian Englishes*, 12(1), 36–52. <https://doi.org/10.1080/13488678.2009.10801282>
- Lin, A. M. Y. (2017). Code-switching in the classroom: Research paradigms and approaches. In J. I. Lontas (Ed.), *The TESOL encyclopedia of English language teaching* (pp. 1–7). Wiley. <https://doi.org/10.1002/9781118784235.eelt0151>
- Lucas, T., & Villegas, A. M. (2013). Preparing linguistically responsive teachers: Laying the foundation in preservice teacher education. *Theory Into Practice*, 52(2), 98–109. <https://doi.org/10.1080/00405841.2013.770327>
- Malone, S., & Feranil, I. (2017). Mother tongue-based multilingual education in the Philippines: 2010–2015. *Language and Education*, 31(4), 345–362. <https://doi.org/10.1080/09500782.2017.1305132>
- Mangila, B. B. (2018). Pedagogic code-switching: A case study of the language practices of Filipino teachers in English language classrooms. *English Language Teaching Educational Journal*, 1(3), 115–133.
- Mareva, R. (2016). Learners' code-switching in English as a second language (ESL) lessons: Perspectives of four secondary school teachers in Zimbabwe. *IRA International Journal of Education and Multidisciplinary Studies*, 4(1), 96–108. <https://pdfs.semanticscholar.org/82cf/3dcfec9d0b3675785c98a869f011f8d72697.pdf>
- Martin, I. P. (2011). Bilingual education policy in the Philippines: Integration not assimilation. In A. Feng (Ed.), *Bilingual education in China: Practices, policies and concepts* (pp. 131–150). *Multilingual Matters*. <https://doi.org/10.21832/9781847693554-009>
- McLeod, S. A. (2024, June 10). Vygotsky's theory of cognitive development. *Simply Psychology*. <https://www.simplypsychology.org/vygotsky.html>
- Muslim, H., & Rahman, A. (2018). A study of teachers and students' code-switching in EFL classrooms setting. *ResearchGate*. <https://www.researchgate.net/publication/339720073>
- Roxas, M. J. (2019). Factors, forms and functions: An analysis of senior high school students' Filipino-English code-switching behavior [Paper presentation]. SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3584231
- Sibayan, B. P. (1999). *The intellectualization of Filipino and other essays on education and sociolinguistics*. De La Salle University Press.
- Simasiku, S. (2016). The impact of code-switching on learners' participation during classroom practice [Master's thesis, University of the Western Cape]. CORE. <https://core.ac.uk/download/pdf/268085152.pdf>
- The Writing Center. (n.d.). Writing a scientific research report (IMRAD). George Mason University. Retrieved October 3, 2022, from <https://writingcenter.gmu.edu/writing-resources/imrad/writing-an-imrad-report>