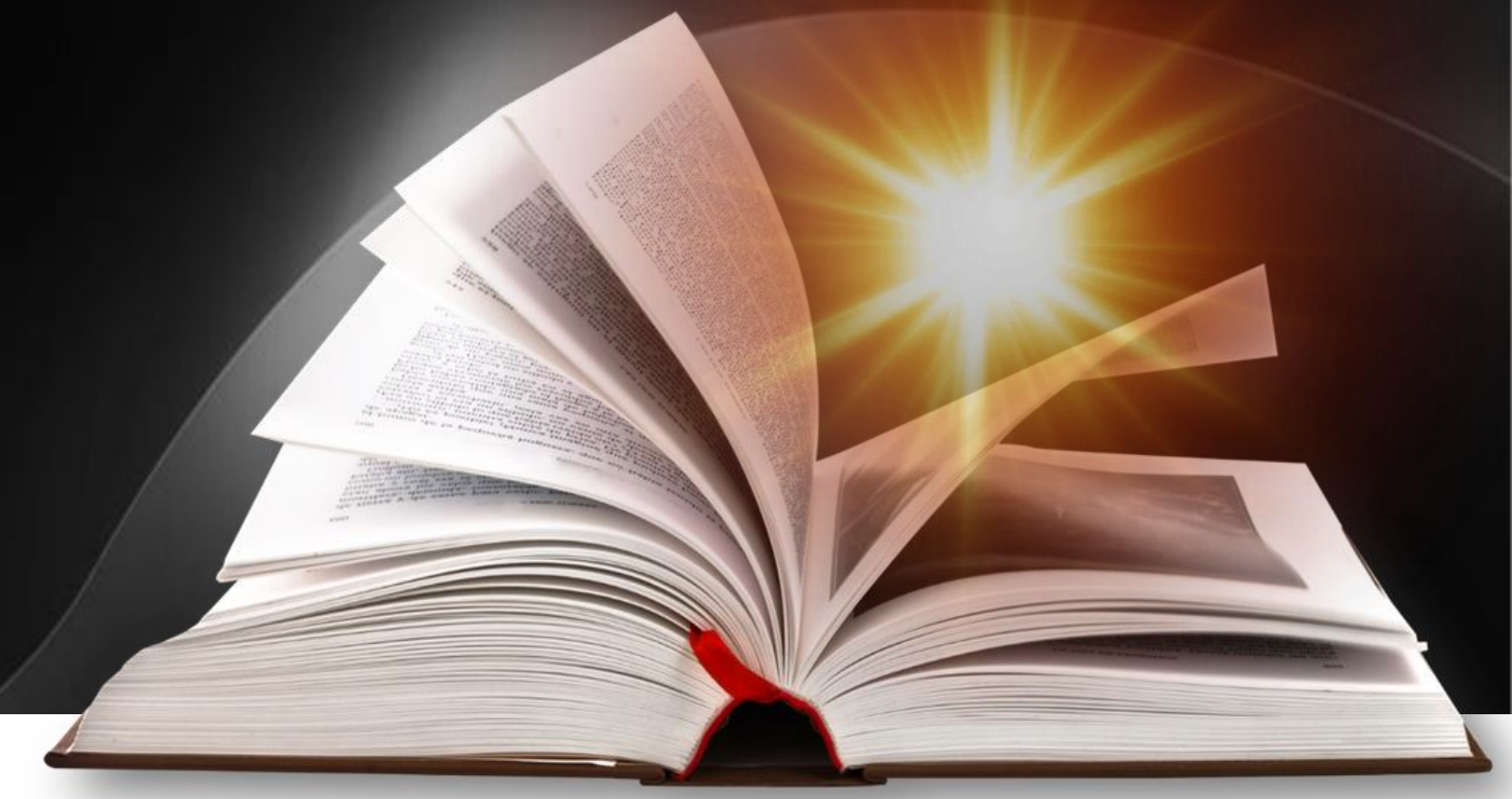
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RAKOTOARISOA Nivomalala Virginie
Université de Fianarantsoa[1]/Madagascar
Email :
nivomalalavirginie@gmail.com

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Editorial

C'est avec une exaltation palpable que nous vous convions à explorer les tréfonds de la pensée et de l'innovation africaines à travers ce dernier chef-d'œuvre, le couronnement de l'année 2023 pour la Revue Panafricaine de la Jeunesse. À l'intérieur de ces pages, se déploie une mosaïque foisonnante d'idées et de perspectives, émanant des esprits les plus éclairés du continent africain et au-delà.

Notre objectif transcendantal reste clair et impérieux : éclairer la scène intellectuelle pour les décideurs politiques, les chercheurs, les acteurs sociaux et toutes les âmes assoiffées de connaissance, en offrant des données scientifiques solides comme socle inébranlable.

La Revue Panafricaine de la Jeunesse s'est affirmée comme une voix internationale, un carrefour où convergent et s'entrelacent des études profondément enracinées dans la réalité africaine. Autrefois freinées par des barrières éditoriales, ces études rayonnent désormais, reflétant la diversité des voix et des expériences qui composent la richesse de notre continent.

L'essor fulgurant de la science africaine est un patrimoine collectif à cultiver, une source d'énergie à entretenir avec ferveur. Les membres dévoués de notre comité scientifique, accompagnés d'experts issus d'horizons variés, ont embrassé avec ardeur le défi d'enrichir la pensée africaine. La diversité des connaissances et des idées, s'étendant des confins d'Afrique et au-delà, fait de la RPJ une plateforme panafricaine en constante métamorphose, porteuse d'une promesse renouvelée à chaque page.

En tant que bastion de la recherche africaine, la RPJ s'engage avec intransigeance à maintenir des normes de qualité rigoureuses, chaque article publié étant le fruit d'un processus de sélection sérieux avec un taux d'acceptation de 50%. L'enthousiasme chaleureux que nous recevons d'un public vaste et diversifié, tant africain qu'international, est une attestation vibrante de notre engagement indéfectible à promouvoir une science africaine robuste et irréprochable.

Ce numéro exceptionnel présente les contributions de chercheurs éminents, explorant des domaines aussi variés que la jeunesse, l'éducation, le sport, l'environnement, le développement durable, la santé, la psychologie, le droit, la politique, la sociologie, les lettres, les langues, et les arts. Chacun de ces articles, ciselé avec minutie, offre une plongée captivante dans des thématiques cruciales pour notre temps.

Notre équipe éditoriale, main dans la main avec notre comité scientifique et nos évaluateurs externes, travaille sans relâche avec les auteurs pour garantir la qualité et

la pertinence de chaque contribution. Cette synergie collaborative est cruciale pour propulser la science africaine au pinacle international, assurant que les sociétés africaines récoltent pleinement les fruits de la recherche novatrice.

Nous vous invitons à vous plonger avec passion dans ce numéro captivant, à dévoiler les trésors de la science africaine et à rejoindre notre communauté de lecteurs. En participant à cette aventure intellectuelle, vous contribuez à renforcer l'influence de la science africaine à l'échelle mondiale, ouvrant ainsi la voie à des sociétés africaines éclairées par les lumières de la recherche de qualité. Embarquez avec nous dans ce voyage fascinant à travers les découvertes, les innovations, et les idées qui sculptent le futur dynamique de l'Afrique et du monde.

Dr Basile Mulwani Makelele
Professeur des Universités

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[The mastery of English as a proof of aid in the learning and teaching of mathematics, case of the Ecole Normale Supérieure and the Faculty of Sciences, University of Fianarantsoa]

RAKOTOARISOA Nivomalala Virginie
Université de Fianarantsoa[1]/Madagascar
Email : nivomalalavirginie@gmail.com

Résumé

L'université de Fianarantsoa est l'une des universités publiques malgaches où la langue d'enseignement est le français mais cela n'a pas empêché certains enseignants de présenter leurs cours en anglais même ce dernier se classe encore comme langue étrangère à Madagascar. L'anglais étant une langue internationale utilisée dans tous les domaines, et les mathématiques, non seulement le langage des sciences mais aussi un langage en usage dans la vie de tous les jours, les deux sont ainsi perçus comme des langages. Malgré cela, les mathématiques et l'anglais sont considérés comme deux disciplines complètement distinctes. La première section de cet article abordera l'anglais et les mathématiques en tant que langages.- Dans la section suivante seront présentés entretiens menés auprès quatre enseignants de mathématiques dans les deux institutions susmentionnées afin d'explorer leurs points de vue sur les questions de caractéristiques linguistiques, les méthodes d'enseignement et les problèmes d'anxiété et de collaboration entre enseignants d'anglais et de mathématiques. Les interviews suggèrent quelques points communs dans la manière dont l'anglais se rapporte aux cours de mathématiques. De ce fait, l'articulation entre les deux disciplines semble interpeller les enseignants sur leurs enseignements.

[1] Doctorante en Sciences Sociales à l'École Doctorale Thématique Gouvernance et Société en Mutation (GOUVSOMU)

Mots-clés : enseignement, apprentissage, mathématiques, anglais, langue internationale, EFL

Abstract

The University of Fianarantsoa is one of the Malagasy public universities where the language of instruction is French but this has not prevented some teachers from presenting their courses in English even the latter still ranks as a foreign language in Madagascar. Since English is an international language used in all fields, and mathematics, not only the language of science but also a language used in everyday life, the two are thus perceived as languages. Despite this, math and English are considered two completely separate disciplines. The first section of this article will discuss English and mathematics as languages. In the following section will be presented interviews conducted with four teachers of mathematics in the two aforementioned institutions in order to explore their points of view on the questions of linguistic characteristics, teaching methods and the problems of anxiety and collaboration between teachers of mathematics. English and Mathematics. The interviews suggest some commonalities in how English relates to math lessons. As a result, the articulation between the two disciplines seems to challenge teachers on their teaching.

Keywords: teaching, learning, mathematics, English, international language, EFL

0. Introduction

What is a language?

There are several definitions of "language". A language can be a system of words or codes used in a discipline. Language often refers to a communication system using symbols or sounds. Linguist Noam Chomsky defined language as a set of sentences constructed using a fine set of elements. Some linguists believe that language should be able to represent abstract events and concepts.

Regardless of the definition used, a language contains the following elements: a vocabulary of words or symbols of meaning that must be attached to words or symbols. A language is governed by grammar, which is a set of rules that describe how vocabulary is used. A syntax organizes symbols into linear structures or propositions.

A narrative or a discourse consists of chains of syntactic propositions. There has been a group of people who use and understand the symbols.

Mathematics meets all these requirements. The symbols, their meanings, syntax and grammar are the same all over the world. Mathematicians, scientists use them to communicate concepts. Mathematics describes itself (a field called metamathematics), real-world phenomena, and the abstract.

English is an international language used all over the world, allowing people from different continents/countries to communicate for different needs. Mathematics is the language of science, but it is also a language used to communicate and describe everyday life situations. Although English and mathematics are perceived as languages, they are considered by schools and universities as two completely separate disciplines.

The students of the Ecole Normale Supérieure and the Faculty of Sciences of the University of Fianarantsoa enrolled in the mathematical disciplines are composed of a diversified student population having the habit of neglecting English during secondary school time, thus, for the most part, having no English at all at a good or average level of English. However, for them, proficiency in English is essential because most of the available documents that they should explore, the exercises that they should deal with, the video that they watch are in English and in addition to that, some lecturers give them math lessons in English. Which means not only that they need to speak English, but their listening and speaking skills also need to be strengthened.

The emphasis on English proficiency causes enough stress for students who are not proficient in English and need extra instruction to compensate for this shortcoming. For teachers, the task of leading their students to reach the expected potential becomes more difficult. Research has found that integrating writing into other subjects and solving vocabulary problems not only demonstrates the student's ability to improve their language acquisition skills, but students benefit from a teacher who can track and help improve certain language and critical thinking challenges that students may present through their writing entries, and vice-versa. versa (Armon & Morris 2008: Honnert & Bozart 2005).

In addition, to improve English language skills in mathematics and to enable effective teaching using English as the language of instruction, the teacher will need to develop the language to be used during face-to-face teaching as well as the language necessary for out-of-class activities related to the subject. This would primarily involve speaking and writing skills and will be supported by adequate grammar introduction and practice.

Why is mathematics a language?

To be considered a language, a communication system must have a grammar, vocabulary, syntax and people who use and understand it. Mathematics meets those definitional criteria of a language that linguists who do not consider mathematics to be a language cite that it is used as a form of written rather than spoken communication. Mathematics is a universal language, the symbols and the organization to form equations are the same in all countries of the world.

Mathematics Vocabulary

Mathematics vocabulary consists of many different alphabets and includes math-specific symbols. A mathematical equation can be stated in words to form a sentence which has a noun and a verb, just like a sentence in a spoken language.

For example: f(x)= 9x+6y (f of x equals nine x plus six y).

What is the importance of the English language in mathematics?

The important role of language in mathematics is to communicate mathematical ideas and teachers of mathematics must deal with both content instruction and language development to support students in their achievement in mathematics.

How are language and math related?

Teachers use language when explaining mathematical concepts to students, while students need language skills to develop and test hypotheses. Students also use language to demonstrate their understanding of mathematical reasoning.

The math record helps in communication between the student and the teacher, or a record can break down the communication barrier and alleviate any fears the teacher may have of not communicating. Writing strategies and integrated math concepts are not only beneficial for students, many teachers also struggle with math and teaching math concepts.

Verbal communication is easier for the student. The math record has also been introduced as an alternative source of communicating and navigating academic concepts, not just for low-achieving students, so journaling helps these students open and maintain a communicative dialogue with teachers. which otherwise might not have existed. Being more connected with a student's work can help teachers understand where the student is lacking in understanding. Teachers gain insight into a student's understanding. As a condition of the student's ability to learn and reflect, reviewing one's own writing and explaining how answers were obtained creates an active, not passive learner.

This study examines the possible benefits of using record writing in mathematics lessons to increase math and language skills. Students classified as beginners are the main target. But because there is research that suggests this type of integrative intervention is beneficial for all students, this study also considered the effect of the math record on achievement in students with special needs.

1. Methods

The purpose of this study is to investigate what kinds of advantages students who are proficient in English perceive from learning mathematics in English and what kinds of advantages mathematics teachers have in teaching mathematics to EFL students. To this end, a series of individual interviews with teachers from the Ecole Normale Supérieure and the Faculty of Sciences of the University of Fianarantsoa was conducted and collective interviews with students were carried out.

More details, data collection and analysis method will be presented below.

1.1 Respondents

The professors teaching mathematics in English in the two institutions of the University of Fianarantsoa were contacted and asked "if they would be interested in participating in this study. They are also asked if they would be interested in letting their students also participate in the investigations. Four teachers who taught math in English, where most of the instruction given to students is in English, and four groups of students agreed to answer questions. All are Malagasy, all having English as a foreign language. Students are divided into four specialty groups, Group 1 studies Economic Mathematics, Group 2 studies Fundamental Mathematics, Group 3 studies Computational Mathematics for Social Sciences, and Group 4 is a group of students who are trained to teach high school mathematics in the future. All students are expected to have learned English from the sixth grade (1st cycle of secondary school in Madagascar) to the twelfth form (second cycle of secondary school).

1.2. Data gathering

The four teachers who participated in this study were interviewed separately outside of their teaching hours. The interviews lasted 20 to 30 minutes and were recorded. As for the students, they were divided into four groups of five participants in each group. Each group was interviewed for 30-40 minutes in a quiet environment and at a time convenient for each group. Most of these teachers have been teaching mathematics for more than fifteen years and started teaching mathematics in English a few years ago. They have found that teaching mathematics in English is more beneficial because

it is an opportunity for their students to perfect their knowledge of this language. They may not be geniuses, but at least they can improve their language proficiency very well by studying both subjects in English, which gives students a chance to learn English more. This improves their English and will be an advantage for students with either basic or high level of English proficiency. Fluency in English is extremely essential.

The responding students sat in a circle at a table to discuss the questions, a mobile phone is used to record their speech and notes were taken during the interviews. Interviews with the four lecturers and four groups of students are conducted in Malagasy and English, as respondents feel more comfortable speaking in their native language. Although group discussion can have its drawbacks (retention of information), it can be a kind of brainstorming.

According to Bryman (2008, P449), the advantage of group discussions is that informants have the opportunity to discuss and share their opinions with each other. Conversely, however, some informants may not want to share their views clearly. opinions or information with other informants depending on the questions asked.

Interview Question for lecturers:

- Do you have experience teaching mathematics in English?
- Which do you prefer, teaching mathematics in English or in French?
- What kind of difference can you point out?
- What kind of language difficulties have you noticed in EFL students in teaching mathematics?

o Difficulty discussing

o Difficulties in textbooks and assessments

- What kinds of challenges and problems have you encountered as a maths teacher when teaching maths in English to EFL students?
- How can you, as a teacher, overcome these challenges and problems?
- Do you think there is a link between students' command of English and their success in mathematics?
- What should be remembered when teaching Mathematics in English to EFL students?

Interview question for students:

How long have you studied English?

How long have you been studying mathematics in English?

- What is your experience of studying mathematics in English?
- What do you prefer, studying mathematics in English or in French?
- What kind of difficulties did you encounter, if any, during your mathematics studies in English?
- Which do you think is quite understandable than the language in textbooks, courses in French or in English?
- In which language do you think you are able to show and express your mathematical knowledge well enough?
- What do you think of the way in which they could facilitate the study of mathematics in English?

1.3. Analysis method

Thematic analysis was used to analyze the collected data. This method is used as a flexible method. According to Braun and Clark, (2006), a thematic analysis is a flexible method for identifying, analyzing, and reporting patterns of themes in the interview date. From noted responses and recorded interview responses, the parts relating to this study have been transcribed and then analyzed. The results have been sorted into recurring themes in the responses of students and teachers that relate to the difficulties of the English language and its usefulness in teaching and learning. mathematics.

Before the interviews, participants were informed of the purpose of the study before the interviews and that they could either withdraw their participation or refuse to answer a question, they were also informed that their personal information would be protected so that no unauthorized person be able to have an access offense. The lecturers were aware of what was being studied. Level, student and teacher details have not been provided to protect the identity of participants.

2. Results

The results of the interviews will be presented according to the common themes found in the responses of the informants. Quotes from respondents will be used to support the claims made. To make the sentences correct and appropriate, the quotes have

been grammatically corrected and have been translated from Malagasy to English for accessibility. Only the experiences of teachers and students will be focused not on gender or differences in level. Lecturers will be referred to as L1, L2, L3 and LE4 and student groups as G1, G2, G3 and G4

2.1. Lecturers' experiences in teaching mathematics in English

Lecturer 1

The strategies developed from my personal teaching and learning are grounded in reflection: what works? what is not working? For what?

The collection of strategies represents the culmination of a long teaching career. Teachers who are just beginning to consider a more serious role for math vocabulary in their classrooms are encouraged to choose the techniques.

The techniques, places and challenges that are used to support vocabulary acquisition are described. They include all aspects of a fully implemented mathematics program, setting the environment, class work (including individual, small group, and whole group work), assignments, assessments, connections to the real world, problem solving explanations, and the mathematical record math word problem solving ability" (Capps 5), (Teaching math vocabulary in context by Miki Murray - HEINEMENN 2004 P.4)

The math journal in which a student writes in English what worked, what didn't work, what practices should be continued, and what improvements a student should focus on in the future after each activity shows process evidence student learning and reflections. The writing records not only the important ideas related to the content, but also the reflection on the learning itself. This is a personal experience record showing what a student has done or tried to do. Math record can be used even at all levels.

Lecturer 2 said that in addition to understanding vocabulary, the way the lecturer speaks needs to be changed. When talking to students, you sometimes tend to start speaking quickly, which can be very difficult for second language learners to understand. Thus, students interpret certain statements differently

Then, lecturer 2 added that a teacher should always remember that using simple words and specific words is helpful for second language learners because they do not have as much vocabulary knowledge as a native speaker.

Lecturer 3 reiterated the thinking of Camille Blachowicz and Peter Fisher (1996) saying that research as well as practice matches the importance of vocabulary learning, across

all content areas, to achieving the goal wider of acquiring content knowledge In fact, tracing students' use of terminology is one of the ways we have to assess conceptual development. Otherwise, how can we assess a student's comfort with an expected concept as he or she explains the solution to a problem in which the concept is embedded accurate vocabulary use is an effective measure of conceptual understanding

Lecturer 4 announced that Janet Allen (1999) advocates direct vocabulary instruction in all content areas because it promotes the learning of new concepts, deeper conceptual understanding, and more effective communication. She cites evidence from a synthesis of research on vocabulary acquisition by Baker, Simons and Kameenui (1995). The report documents a reciprocal relationship between conceptual understanding and vocabulary knowledge in any content domain (Allen 29).

Overall, four of the lecturers agreed that vocabulary and using the right words was problematic for them as lecturers and it was something all four of them focused on, especially when teaching. mathematics in English to students who are low in English.

2.2. Study and problems of materials

The teachers interviewed use English math textbooks and French math books, apart from the video which can be explored on You tube. It is a little difficult to use documents in English because they are suitable for native speakers, which is why teachers resort to reformulation or even translation into French and Malagasy (mother tongue).

Lecturer3: the third lecturer encountered the same problem and explained that when teaching math lessons in English, the lecturer is obliged to prepare and know the vocabulary to be used because students can easily confuse them. "Sometimes it's not the math vocabulary that's the problem when I am teaching, it is more the everyday English words that can be the problem. ».

According to Lecturer4, certain mathematical problems must be reformulated and even translated into the mother tongue or into French. Also in French math books they give students multiple problems to solve, whereas in English math books you only get a few and then move on to the next problem, and it can be difficult if you have language problems or if the students did not understand. the problem correctly.

Lecturer 4 had a similar experience and explained that he changed his English math textbooks to French math textbooks because students struggled with his language and structure. The teacher further explained that they have students at the Ecole Normale and the Faculty who are learning French and they do not want to force them to speak

English, especially those who are not used to it. to speak English. However, students continue to have tasks and quizzes in French and English. Math word problems can have language related issues, but English should never be a problem because it is the math question that students need to focus on and not the language part.

Lecturer 4 explains that math word problems can be a problem and students cannot be taught how to solve them; teachers can only help students learn how to target them and give them simple steps on how to break them down, but they can't show them how problems in the math world should be solved, which will only prevent them from learning. Students learn and understand the problems themselves.

2.3 How to tackle with and overcome difficulties ?

When teachers have difficulties, they obviously try to find solutions to overcome them and work on them.

Lecturer 1: Let the students talk and work in groups and let them highlight the words they don't understand, then write them on the board. The lecturer may resort to the use of interdisciplinary activities when the teachers of English and mathematics can formulate questions on this subject.

Lecturer 2: We may have a problem based on English that students can translate. If we are talking about proof or mathematical reasoning, the English teacher can demonstrate how to formulate and communicate it correctly in English.

2.4 Students experiences with the study of mathematics in English

Students have different answers about learning math in English

Group 1: It is a difficult transition from French to English but we get used to it.

Group 2: Others say: mathematics is a challenge and not the language, because we are good in English and understand the structures in English, but not the mathematics itself.

Group 3: Other students say it is good to have math books in French because they are easier to understand, but when the teacher started using synonyms in English and explaining them, it becomes much easier.

Group 4: learning math in English is much more resourceful because we are able to discover information that is easier to find via YouTube, Google, etc… and difficult words can be translated.

2.5 Problems in tasks, manuals and lessons

Vocabulary and language are more difficult. So if someone does not speak English yet, they would be in big trouble.

Students who learn math in English are more advantaged and beneficial because all the information is easily accessible compared to those in French. In addition to this, it is important to emphasize that vocabulary and terminologies should be presented and explained preferably using synonyms.

2.6 Solutions to problems

Some students experience math language difficulties, others find suggestions and options on what the teacher can do to fill this gap. Some have suggested that the speaker could use different synonyms or use less difficult vocabulary that is then easier to understand.

Others see an advantage in learning math in English rather than French and explained that the advantage of learning math in English is that you can always go to YouTube and find your answer. But some math lessons are hard and complicated and it would be a great advantage if you have a good command of English.

It can be pointed out that regarding the experiences of EFL students, they have vocabulary problems when studying math in English. Which means that if students want to develop language and math skills, they need to know the meaning and proper use of vocabulary. Without really understanding the meaning and function of the words used in their classroom or math textbooks, it will be difficult for students to distinguish what to do or how, even if they are good mathematicians. They need to learn new words and practice using them. When working with math word problems, students should focus on analyzing and understanding the text and then identifying the math aspect.

Word problems may have linguistic components that are important to understand, such as *"plot"* which was an example given in one of the groups. Again, from what the students said, the English language plays an important role to some extent in their understanding of mathematics.

As for the teachers, they don't think they have any problems teaching mathematics in English. According to the speakers.

According to them, it is mainly about planning well and using the right vocabulary in English, speaking at the right context and being very precise when explaining something, because students may not understand, especially if English is a foreign

language for them. Mathematics has an important potential role in the teaching of mathematics, especially in the problems of the mathematical world. Along the same line, Bernardo (2005) mentioned that the problems of the mathematical world could be problems related to language or mathematics. Either the problem is badly formulated, or it is mathematically too abstract. Which means math lecturers need to understand what kinds of language-related challenges math word problems may contain in lessons, so students will continue to have difficulty solving them. The lecturers themselves are the ones who shape them for their assessments, because without their teachers' awareness of the students' problems, their mistakes will last forever, creating incomprehensible math word problems.

For teachers, integrating the teaching of English and mathematics into cross-curricular activities deserves even more thought. In their experience, students who are good at English can be good at math or vice versa. So; the English language can be a corroborating asset to improve the understanding of mathematics.

3. Discussion

The fact of having few participants in this study limits the results and prevents generalizations. The following discussion and conclusion can therefore above all be a source of inspiration for future studies or aspects to be explored further.

The results of this study will be discussed in relation to the research question posed on language-related difficulties EFL students and participating teachers claim to experience difficulties when studying and teaching mathematics in English.

Some of the students think that they frequently encounter vocabulary problems that textbooks have. Some words have multiple meanings or are not explained correctly. Others had problems with formulations and expressions and difficulty with math word problems:

For example: one of the students said that he had never heard the word "plot" before, which is another word for "making the graph". I think it plays a part, you have to know what the word means.

However, the word problems are the most difficult part. This is when the language comes into play and it is kind of difficult to understand the real question or what one should do. As the student does not know how to approach the problem.

Group2: The words are difficult to understand, and they make the students confused and they end up not knowing how to solve the problem.

Sometimes, we hesitate in the formulation of ideas. It is easier to read than to answer a question. It also depends on the way a problem is solved and its complexity. According to the teachers, it is not the language that prevents their students from solving the problems of the mathematical world, it is however the lack of knowledge on how to approach them. Yet these students explained that math word problems are worded in a difficult way and have a formal language that prevents them from distinguishing the math part of the problem and this is a different perspective than the teachers proclaimed.

However, other students think they have no problem speaking and communicating in English, but the math itself can be a problem and having to use two different languages in math can be confusing and it is better to use only one of them.

In a nutshell, a conclusion can be drawn that since the difficulties arise mainly when students work with word problems and encounter unfamiliar vocabulary, especially the Anglo-Saxon word, many of them pointed out that mathematics is the main problem and not the language in which it is presented.

4. Conclusion

Regarding the way this study is conducted, some methodological aspects may have affected the results. One of them is related to survey questions. They were very similar to each other and quite specific, which prevented the answers from being broader and more open. So looking back, you could say there should have been more elaboration and open questions. The respondents have great experiences and give answers more than expected, but there was a risk of not having so many too.

Moreover, only a few students in each group have problems related to the English language. During the interview, they talked more about mathematical problems than the language part, and they had to be guided to questions and the object of study a few times. Unnecessarily spent discussing unrelated topics, although there were good discussions.

Nevertheless, this study aimed to know the linguistic difficulties encountered by students and lecturers of university programs when teaching and learning mathematics in English. As the results showed, the students had some problems with vocabulary and expression, but the main problem was the word math problem. Likewise, the math lecturers in these programs were aware of the problems and tried to help their students in a number of ways. Yet, based on their responses, it seemed that the lecturers did not understand the impact language can have on math comprehension. It does not necessarily mean not knowing specific math vocabulary or everyday English words, as

it can happen in any other subject, including English itself. The point here is to understand what linguistic difficulties exist in mathematical word problems. Students tend to have a good command of English and are good readers, so why are math word problems a problem? Is it because math lecturers write too abstract texts or because students have language problems can be a challenge?

Even so, it was interesting and relevant to investigate whether language can impact student performance in mathematics. Researchers have different opinions regarding the link between students' English proficiency and math success. In a sense, mathematics is a universal language communicated through symbols and numbers, but often natural language is also needed to express itself. Show, distinguish and prove something in mathematics, and this is where mastering such a language also plays an important role. On a different note, research on how lecturers of English and lecturers of mathematics can work together could be very critical to the issues addressed in this study. Language awareness in subjects such as mathematics is necessary. Further research on supporting English lecturers and ideas to help math lecturers become aware of the language in their subject is needed.

Therefore, lecturing mathematics in English should not be left to chance. The failure of these lecturers to master English will be detrimental as it will affect not only the language ability of the students but also the delivery of math content to the students.

Thus, to successfully implement the lecturing of mathematics in English, an integrative teaching method to put a rapprochement and collaboration between the teaching of the mathematical discipline and the English language can be envisaged, an integrative method to preserve at both the language and the content of the discipline.

The study, however, is not without limit. The study sample was too small to generalize the results to the entire country. A study with a larger and more diverse sample may provide different results. Thus, it is recommended to conduct a new study with a larger sample.

In addition, the study relating only to lecturers and university students, a study relating to the reactions, receptions and performances of the teaching of mathematics in English should be explored.

5. References

Bernardo, A.(2005). Language and modelling word problems in mathematics among, bilinguals. The *Journal of Psychology*, 139 (5), 413-425.

Dale, T.C., and Cuevas, G. J. (1987). *Integrating Language and Mathematics Learning. ESL. Through Content- Area Instruction.* (Ed) JoAnn Crandall, Prentice Hall, US.

Hoyles, C., Noss, R., Kent, P., Bakker, A. (2010). *Improving mathematics at work: The need for techno- mathematical literacies*. London: Routledge.

Janzen, J. (Dec2008). Teaching English Language Learners in the content Areas. *Review of Education Research*. 78(4): 1010-1038.

Kristy L. Turner, (2019), *Teaching Chemistry in Higher Education: Integration of technology in the Chemistry Classroom and laboratory*. London, Barry J. Bryan pp 39-54.

Liebenberg Elsa, (2011), *Comment allier l'enseignement d'une langue étrangère à celui d'une discipline spécifique et pointue*, https://doi.org/10.4000/apliut.1445, p.125-141

Main, J. and Eggen, P. (1991). *Developing Critical Thinking Through Science*. Midwest Publications, US.

Miki Murray, (2004). *Teaching Mathematics Vocabulary in Context,* Heineman by Mabelle Murray 196p.