The Impact of Language Transition on Mathematics Comprehension in Moroccan Middle Schools

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Abstract: This study examines the impact of the linguistic transition from Arabic to French on the comprehension of mathematical concepts among first-year middle school students in Morocco. Utilizing a mixed-methods approach, the research analyzes student performance in identifying quadrilaterals and calculating their area and perimeter in both languages. Results indicate a significant decline in students' mathematical performance when instructed in French compared to Arabic. The study also explores the perspectives of 249 mathematics teachers, revealing a predominant preference for Arabic as the language of instruction. The findings suggest that the sudden shift to French imposes cognitive challenges, potentially hindering students' academic progress. This research contributes to the ongoing debate on the efficacy of bilingual education in Morocco and highlights the need for gradual implementation and enhanced language support to optimize learning outcomes.

Keywords: bilingual education, language transition, mathematics education, Content and Language Integrated Learning (CLIL).

INTRODUCTION:

In 2017, Morocco initiated a substantial endeavor in mathematics education by implementing French as the medium of instruction for middle school students. Prior to this alteration, the instruction of mathematics predominantly took place in Arabic, which is the official language of the nation. This move signifies a significant linguistic change with the purpose of equipping pupils for higher education, which is primarily performed in French in Morocco. Nevertheless, this approach has not been universally followed and has generated discussions among educators, parents, and legislators.

The decision to use French as the medium of teaching for mathematics is driven by the need to harmonize the school curriculum with higher education, where French is the predominant language in scientific fields (Messaoudi; 2008). Nevertheless, this change is not devoid of its difficulties. Students who have acquired fundamental mathematical principles in Arabic are now required to acquire them again in French, a language that many do not have a proficient command of, making it difficult for them to readily comprehend abstract concepts. This circumstance results in a disparity between the necessary language abilities and the ones that the students actually have, which could have a detrimental effect on their performance in mathematics. Two predominant viewpoints dominate the discourse surrounding this linguistic change. Some individuals argue against the inclusion of mathematics in the French language curriculum, asserting that Morocco's official languages, Arabic and Amazigh, should take precedence in all courses, including the sciences. Advocates argue that the utilization of indigenous languages enhances both national and cultural identification, while also enabling pupils to grasp things more effectively in a language they are completely at ease with. In addition, there is concern that the inclusion of French in the curriculum could worsen educational disparities by putting pupils from non-Francophone backgrounds at a disadvantage (Mabrour, 2007).

Conversely, there are individuals who back the proposal, arguing that it is essential for Morocco to adopt global languages, namely French, which has a significant impact on worldwide economic, scientific, and cultural interactions. According to Sagh (2022), proponents claim that instructing pupils in French for mathematics starting in middle school would enhance their readiness for higher education, where fluency in French is essential. In addition, proponents argue that this technique would effectively narrow the language barrier that exists between secondary and higher education, therefore improving students' transfer and enhancing their likelihood of achieving academic success.

Additionally, instructing mathematics in French is in accordance with the CLIL (Content and Language Integrated Learning) methodology, which has numerous benefits. CLIL enhances students' linguistic proficiency by allowing them to acquire specialized information while simultaneously learning a foreign language. According to (Kaddouri, 2023), this activity facilitates the learning of new words, improves the ability to understand written and spoken language, and increases self-assurance in utilizing the language. Furthermore, CLIL promotes active learning methodologies by exposing students to authentic challenges and providing them with the chance to apply their knowledge. This might enhance their motivation and involvement (Jamil et al. , 2023). Furthermore, this approach enables individuals to obtain expertise in a foreign language, which can be especially advantageous for international students or individuals aspiring to specialize in a certain domain (Barwell et al. , 2005). Furthermore, CLIL promotes the growth of cognitive abilities by establishing connections between conceptual comprehension, understanding, and language acquisition. CLIL ultimately exposes students to other viewpoints and common understandings, enhancing their sense of diversity and personal identity.

Nevertheless, CLIL also has several disadvantages. For instance, when course design lacks clarity, it becomes challenging to strike a balance between acquiring language skills and absorbing course information (Wunberg et al. , 2024). In addition, students may encounter difficulties in articulating their thoughts in the foreign language, especially when constructing inquiries and employing subject-specific jargon. Another obstacle arises from the requirement for specialist teacher training, as educators must possess the ability to adjust their instructional methods to suit both the subject matter and the language used (Bruton, 2013). There is a genuine risk of an imbalance between substance and language, where one may be prioritized at the cost of the other. While CLIL's usefulness is universally acknowledged, further research is necessary to investigate various instructional designs and enhance its implementation (Novotná & Moraová, 2005). The incorporation of French into mathematics teaching in Morocco is a component of a wider educational overhaul that seeks to enhance the caliber of education and harmonize the Moroccan education system with global benchmarks. Nevertheless, the transition from one language used for teaching to another gives rise to intricate pedagogical inquiries. Undoubtedly, a profound comprehension of mathematical concepts is essential for effective education, and any language barrier has the potential to impede this comprehension.

Hence, the forthcoming study will concentrate on examining the influence of this linguistic shift on the comprehension of quadrilaterals among Moroccan pupils, a pivotal subject in the middle school mathematics syllabus. The objective is to examine the impact of incorporating the Content and Language Integrated Learning (CLIL) approach on students' comprehension of mathematics when taught in French, as compared to their prior instruction in Arabic (Er-radi & Bouali, 2020). The study will additionally investigate the viewpoints of instructors on this transition and the difficulties they encounter in applying this novel language policy.

Within this particular context, this research holds significant importance in contributing to the continuing discussions regarding the language used for instruction in Morocco. It achieves this by presenting empirical evidence on the tangible effects of incorporating French into mathematics education (Jiang et al. , 2024). The results of this study have the potential to enhance our comprehension of the impacts of this policy and provide suggestions for enhancing the efficacy of mathematics education in a bilingual setting (Hao et al. , 2023). The main objective is to ascertain the most effective language of instruction for Moroccan students to enhance their mathematical abilities, while considering the societal and linguistic factors specific to the nation.

LITERATURE REVIEW:

Teaching mathematics in a foreign language is a topic of growing interest, particularly in contexts where educational policies promote the integration of global languages into school curricula. This approach offers substantial benefits as well as considerable challenges, which need to be carefully evaluated in light of current research.

Advantages of Teaching Mathematics in a Foreign Language

An inherent benefit of instructing mathematics in a foreign language is the enhancement of pupils' linguistic proficiency. Through complete immersion in the target language during their math sessions, students can enhance their oral and written comprehension, expand their vocabulary, and cultivate fluency in expressing themselves in that language (Martí Arnándiz et al. , 2022). Linguistic immersion fosters a highly immersive learning environment in which students are consistently and continuously exposed to the language, hence aiding the acquisition of new linguistic abilities (Smit & Finker, 2022). Furthermore, this immersive setting enables students to acquire mathematical concepts while simultaneously honing their foreign language skills, so enhancing their desire and involvement (Sharma, 2022).

Another advantage of this strategy is the improvement of understanding mathematical concepts. When students acquire mathematical knowledge in a language that is not their native tongue, they frequently encounter the need to engage in more profound cognitive processes in order to comprehend and effectively utilize the concepts at hand (Jamil et al. , 2023). The need to mentally convert concepts from one language to another might result in a more abstract and nuanced comprehension of mathematics. Students must not only become proficient in mathematical language, but also guarantee that their understanding is precise in both languages (Surmont et al. , 2016). Engaging in cognitive double-checking might enhance individuals' general understanding of mathematical concepts, hence improving their ability to solve intricate issues (Pérez Cañado, 2018).

Teaching mathematics in a foreign language equips pupils with the necessary skills and knowledge to excel in higher education and pursue international employment. Proficiency in both mathematics and a foreign language is a significant advantage for students who intend to seek higher education overseas or work in an international setting. According to (Setati, 2005), students who have acquired proficiency in mathematics in a foreign language are typically more equipped to handle the difficulties of higher education programs conducted in a language that is not their mother tongue. Moreover, possessing both linguistic and mathematical proficiency provides access to job prospects overseas, where there is a growing need for individuals who are fluent in many languages (Mercer & Sams, 2006).

Another significant benefit is the cultivation of analytical reasoning and the ability to solve complex problems. Students in a bilingual situation need to have higher cognitive flexibility in order to learn mathematics effectively. Students are required to traverse between two linguistic systems while using mathematical principles, which enhance their capacity for creative thinking and enable them to discover novel solutions to issues. This technique not only improves their mathematical proficiency but also boosts their capacity to tackle problems from several perspectives, a vital talent applicable in both academic and professional domains (Ruiz-Cecilia et al. , 2023).

Teaching mathematics in a foreign language ultimately fosters cultural openness and enhances knowledge of variety. Studying mathematics in a different language exposes students to a new culture, fostering a greater understanding and appreciation for linguistic and cultural diversity. Exposing pupils to different cultures helps foster open-mindedness and appreciation for diversity, which are crucial values in today's interconnected world. Furthermore, it has the potential to motivate individuals to acquire proficiency in additional languages and develop a curiosity for diverse cultures, so expanding their global outlook (Bustard et al. , 2023).

Challenges of Teaching Mathematics in a Foreign Language

Although there are benefits, instructing mathematics in a language that is not native also poses notable difficulties. An inherent limitation is the challenge of understanding for certain students. For numerous pupils, learning mathematics is already a formidable task, and when a language barrier is introduced, it might intensify these challenges (Petty et al. , 2023). Students lacking proficiency in a foreign language may have feelings of being overwhelmed and upset, leading to a detrimental effect on their academic performance (Planas et al. , 2023). Moreover, these challenges can result in a decline in self-assurance, thus complicating the process of learning mathematics (Oumelaid et al. , 2023).

Another disadvantage is the potential for ambiguity between mathematical terminology and everyday language. Certain mathematical phrases has distinct definitions that may vary from their everyday usage in the target language (Barwell, 2023). This discrepancy can lead to perplexity among students, particularly while they are still in the midst of acquiring proficiency in the foreign language (Orozco & Pedrosa, 2022). For example, the term "table" in English has different meanings depending on the context. In mathematics, it refers to a data table, whereas in a non-mathematical context, it refers to a piece of furniture (Pires et al. , 2024). Ambiguities in mathematical concepts can create complexity in the learning process, necessitating teachers to provide additional attention to ensure pupils have a thorough understanding. In addition, instructing mathematics in a foreign language necessitates the presence of very skilled educators who possess expertise in both mathematics and the foreign language (Paraide et al. , 2022). Locating educators possessing these proficiencies can prove to be arduous, particularly in areas afflicted by a dearth of competent instructors. Furthermore, it is imperative that these educators receive specialized training in pedagogical methodologies for instructing mathematics in a non-native language, thereby introducing an additional level of intricacy. The insufficiency of competent instructors may impede the efficacy of this approach and result in disparities in educational standards.

Another major obstacle is the requirement for tailored instructional materials. Textbooks and instructional materials should be explicitly tailored for instructing mathematics in a non-native language (Sarrazy, 2002). The resources should encompass mathematical principles while being written in a style that is easily understandable for students who are acquiring the foreign language.

However, the production of such educational resources incurs significant expenses and may not be accessible in all schools, especially in rural or underprivileged regions. Inadequate resources can hinder the effectiveness of education and worsen disparities among students (Roussel et al. , 2017).

Teaching mathematics in a foreign language might result in disparities among students. Individuals who possess a proficient mastery of the foreign language may possess a notable edge over those who do not. This scenario has the potential to exacerbate the disparity among pupils, resulting in performance gaps that mostly reflect differences in verbal aptitude rather than mathematical prowess. In addition, pupils from socioeconomically deprived homes, who have limited exposure to the foreign language outside of school, are especially susceptible to these disparities (De Courcy & Burston, 2000). These circumstances prompt inquiries regarding the equity of this educational methodology and the strategies that might be employed to mitigate disparities.

To summarize, instructing mathematics in a foreign language provides significant benefits in terms of fostering language proficiency, deepening comprehension of mathematical principles, and equipping individuals for advanced education and global professional opportunities (Volmer et al. , 2018). Nevertheless, this technique also poses notable obstacles, such as difficulty in understanding, ambiguity in terminology, the requirement for skilled educators, customized instructional materials, and the potential for disparities among pupils (Barwell, 2005). In order for this approach to provide desired results, it is imperative to adequately educate teachers, furnish suitable instructional materials, and guarantee equitable opportunities for all students to excel, irrespective of their skill level in the foreign language.

METHODOLOGY:

This study's methodology is to investigate the influence of linguistic transition on the acquisition of mathematical knowledge among first-year middle school students in Morocco. Additionally, it seeks to explore the perspectives of mathematics teachers on this matter. The research methodology is a combination of quantitative and qualitative approaches, which allows for a thorough comprehension of the topic being investigated.

Research Design

This study used a mixed-methods technique, which involves gathering and analyzing both quantitative and qualitative data. This method enables the measurement of the impact of the language shift on student learning and also investigates the perspectives and experiences of teachers regarding this transition. By integrating these two types of data, it becomes possible to triangulate the results, which in turn improves the validity of the conclusions made.

Sample/Population

The sample for this study consists of two main groups: students and teachers.

Students: The student sample consists of 30 first-year middle school students, randomly selected from 9 classes, each with 30 students. The class assignments were made through the official Moroccan school management platform, MASSAR, which ensures that the distribution of students across classes is done without human intervention. This platform guarantees that each class includes a diverse range of students, taking into account factors such as gender, academic performance, and other socio-economic characteristics. This random assignment enhances the representativeness of our sample and minimizes any selection bias.

We observed that the students' results in French, as recorded on the MASSAR platform, were satisfactory, with all students scoring above 5/10 (50%). This observation allowed us to conclude that their proficiency in French was adequate for continuing the study on the language transition and its impact on mathematics comprehension, without the need for additional language testing.

Teachers: The survey included a total of 249 middle school mathematics teachers from different regions of Morocco. The selection of these instructors was based on their extensive expertise in teaching mathematics at the middle school level and their active involvement in discussions regarding the linguistic transition through a dedicated WhatsApp group for mathematics teachers. This group functioned as a platform for disseminating a questionnaire and gathering data on their perceptions and experiences.

Data Collection Instruments

To address the research questions, several data collection instruments were used, each targeting specific aspects of the study.

- **Student Test** : A test was designed to evaluate students' ability to recognize quadrilaterals and compute their area and perimeter in both Arabic and French. This test was carefully developed in line with the principles of Content and Language Integrated Learning (CLIL), aiming to seamlessly integrate subject content with language learning. To ensure the test results accurately reflect the impact of the language transition on mathematical comprehension, students' proficiency in French was assessed beforehand using standardized tests. This step ensures that the results measure the influence of the language shift, rather than general language difficulties.
- **Teacher Questionnaire** : A survey was administered to 249 mathematics teachers to gather their perspectives on how the language shift affects student learning. The survey addressed the challenges and benefits of Content and Language Integrated Learning (CLIL), as well as the teachers' preferred language for teaching mathematics. In addition, specific questions were included about pedagogical methods and classroom observations, providing deeper insights into current teaching practices and teacher attitudes.
- **Classroom Observations** : Classroom observations were conducted to analyze the teaching methods used in French-language mathematics classes within the CLIL framework. The observations focused on student participation, teaching techniques, and

challenges faced by the students. These observations, combined with the test and questionnaire data, offer direct insights into classroom dynamics, enabling a deeper analysis of students' experiences and the effectiveness of the teaching methods employed.

Data Analysis

The data analysis in this study was conducted in two phases: quantitative and qualitative.

- **Quantitative Analysis:** The data obtained from the student assessments and teacher questionnaires underwent statistical analysis in order to uncover patterns and relationships. Comparative experiments were carried out to ascertain the extent to which the linguistic transfer affected pupils' mathematical performance. In addition, the responses of the instructors were examined to find recurring trends in their judgments of Content and Language Integrated Learning (CLIL) and their preferred language for instruction.
- **Qualitative Analysis:** Thematic analysis was conducted on the qualitative data obtained from classroom observations and open-ended questionnaire responses. This methodology enables the recognition of repetitive patterns in the data and facilitates a more profound comprehension of the experiences of students and teachers throughout the transition period. Qualitative analysis enhances the quantitative findings by providing a more comprehensive understanding and in-depth observations of the difficulties and achievements in teaching mathematics in French in Morocco.

Essentially, this study's methodology aims to offer a thorough comprehension of how the shift in language affects the learning of mathematics in Morocco. This will be achieved by gathering both quantitative and qualitative data from students and teachers. This methodology, which combines several research approaches, allows for the cross-validation of findings and offers well-informed suggestions for enhancing mathematics instruction in a setting characterized by a shift in language.

RESULTS

The study sought to evaluate the influence of shifting from Arabic to French on the mathematical aptitude of first-year middle school pupils in Morocco. The results are derived from two main sources: student assessment data and teacher questionnaire replies. The student assessments were designed to assess their proficiency in identifying quadrilaterals and conducting calculations pertaining to area and perimeter in both Arabic and French. The teacher questionnaire assessed the opinions of mathematics teachers regarding whether French is a suitable language for teaching first-year middle school students.

Student Performance

Identification of Quadrilaterals:

It was a test for the students to name quadrilaterals in both Arabic and French. Table 1 shows what the findings were.

Language	Quadrilateral	Correct Responses	Incorrect Responses	Percentage Correct
Arabic	Square	28	2	93. 3%
French	Square	22	8	73. 3%
French	Parallelogram	5	25	16. 7%
French	Rectangle	10	20	33. 3%
French	Rhombus	7	23	23. 3%

Table 1: Comparison of Student Performance in Identifying Quadrilaterals in Arabic and French

Table 1 shows that students did much better at finding quadrilaterals when they were tested in Arabic than when they were tested in French. In both languages, the most correct answers were given for squares. However, when students had to name the shapes in French, their total accuracy dropped by a large amount.

Calculation of Area and Perimeter:

Students were also evaluated on their ability to calculate the area and perimeter of squares and rectangles, with results summarized in Tables 2 and 3.

Language	Shape	Correct Responses	Incorrect Responses
French	Square	11	19
French	Rectangle	14	16

Table 2: Student performance in calculating the area of shapes in French.

Language	Shape	Correct Responses	Incorrect Responses
Arabic	Square	25	5
Arabic	Rectangle	23	7

Table 3: Student performance in calculating the area of shapes in Arabic.

Table 2 shows that students had a hard time figuring out how to calculate areas in French; most of them gave wrong answers. But as you can see in Table 3, achievement went up a lot when the same tasks were done in Arabic.

Language	Shape	Correct Responses	Incorrect Responses
French	Square	6	24
French	Rectangle	7	23

Table 4: Student performance in calculating the perimeter of shapes in French.

Language	Shape	Correct Responses	Incorrect Responses
Arabic	Square	8	22
Arabic	Rectangle	4	26

Table 5: Student performance in calculating the perimeter of shapes in Arabic.

Tables 4 and 5 show that students had a hard time figuring out perimeters, especially when they were learning French. Many students had trouble with perimeter math even when they were learning Arabic. The error rate was higher when they were learning French, though.

Teacher Questionnaire

The teacher questionnaire provided insights into the perceptions of 249 middle school mathematics teachers from various regions in Morocco. The results are summarized in Tables 6 and 7.

Is French an appropriate language for teaching mathematics to first-year middle school students?	**Teachers**
No	203
Yes	46

Table 6: Teacher opinions on the appropriateness of French for teaching mathematics.

Most suitable language for teaching mathematics to first-year middle school students	**Teachers**
Arabic	190
French	50
English	9

Table 7: Teacher preferences for the language of instruction.

Table 6 shows that a majority of teachers (81. 5%) do not consider French appropriate for teaching mathematics to first-year middle school students. Table 7 reveals that 76. 3% of teachers prefer Arabic as the language of instruction, with a much smaller percentage favoring French or English.

During the interviews with the teachers, several suggested that teaching mathematics in Arabic would be more suitable due to its simplicity for students compared to French, and to maintain coherence between primary education and the middle school cycle. Some teachers also proposed giving students the option to choose the language of instruction, and allowing teachers the flexibility to select the language in which they teach. Others advocated for diversifying the languages of instruction, particularly emphasizing English, given its prominence in scientific research.

The teachers also suggest implementing a bilingual approach initially, using both Arabic and French for instruction. They recommend allowing students to respond in Arabic during exams at first, and gradually transitioning to French (or other languages) over time.

Furthermore, during our classroom observations, we discovered that some students were able to provide correct answers but struggled to explain their reasoning fluently in French. These students have not yet become sufficiently familiar with this new language to express and explain mathematical concepts clearly and confidently.

DISCUSSION:

The findings of this study align with previous research on the challenges of language transition in education, particularly in bilingual contexts. The noticeable decline in students' performance during French assessments, compared to Arabic ones, underscores the cognitive burden imposed by acquiring knowledge in a second language. This is consistent with the viewpoint of Alhaider et al. (2024), who posited that students need to reach a certain threshold of language proficiency to successfully acquire academic knowledge in that language. The findings also resonate with Yang et al. (2024), who observed that students often struggle to apply their understanding of concepts across languages without adequate support.

Teachers' comments further emphasize the difficulties of using French as the language of instruction. Most teachers prefer Arabic due to concerns that students are not adequately prepared to face the cognitive challenges of learning mathematics in French. This aligns with Alexander and Maeda's (2015) perspective, which stresses the importance of using a language of instruction in which students are proficient, to facilitate their full engagement with the subject matter. The suggestion that Arabic should be the primary language of instruction for first-year middle school students is consistent with research advocating for the use of students' native language as a foundation for understanding complex subjects (Younes et al., 2023).

While the advantages of teaching mathematics in a foreign language, such as enhanced language proficiency and preparation for higher education, have been well-documented (Krause, 2023), this study's findings indicate that the benefits of bilingual education may not be fully realized if students are not adequately prepared for the transition. The subpar academic performance of students in French, particularly in tasks requiring perimeter calculations, suggests that introducing

French as the language of instruction may be premature for first-year middle school students transitioning from Arabic-medium education.

Moreover, the challenges highlighted in this research align with Sweller's Cognitive Load Theory (Sweller, 1988), which suggests that learning in a second language can increase cognitive load, thereby hindering students' ability to grasp and absorb new information. The findings of this study support this theory, as students made more frequent errors in French, likely due to the increased cognitive load of working in a less familiar language.

These findings also raise questions about the effectiveness of Content and Language Integrated Learning (CLIL) in situations where students have not yet developed sufficient proficiency in the target language. While CLIL is often praised for its potential to enhance both language and content acquisition (Reikerås, 2024), this study's results suggest that students may struggle to grasp mathematical concepts when taught in a foreign language if they do not receive adequate language support. This is especially evident in the higher rate of incorrect answers to perimeter calculation tasks in French.

When comparing these results to other international studies, it becomes evident that the success of bilingual education depends heavily on students' linguistic readiness. For instance, Chronaki and Planas (2018) found that Canadian students taught in both French and English achieved high academic performance due to the extensive linguistic support they received before being introduced to content education in their second language. In contrast, the students in this Moroccan study appear to lack the linguistic skills necessary to excel in mathematics when instructed in French.

Moroccan teachers' strong preference for Arabic also reflects broader concerns about the cultural and linguistic appropriateness of the language of instruction. Wang et al. (2023) argued that language serves not only as a communication tool but also as a marker of cultural identity. The resistance to adopting French as the language of instruction for mathematics may stem from a desire to preserve students' cultural and linguistic identity, especially in a foundational subject like mathematics.

In conclusion, the shift toward teaching mathematics in French in Morocco is intended to meet the linguistic demands of higher education and global opportunities. However, the results of this study suggest that more attention should be given to students' linguistic preparedness. The difficulties students face in understanding mathematical concepts in French, combined with teachers' strong preference for Arabic, indicate that a more gradual approach to bilingual instruction is needed. Further research is required to explore effective strategies for supporting students during this transition, such as enhanced language support programs and the development of bilingual educational materials that bridge Arabic and French instruction.

CONCLUSION:

The study's findings show that students' performance in mathematics suffers significantly when the language of instruction changes from Arabic to French. When given the same test in French and Arabic, students had far more difficulty with quadrilateral identification and perimeter and area calculations. Some teachers were concerned that French wouldn't be a good fit for their first-year middle school children, and their survey responses indicated a significant preference for Arabic as the medium of teaching. Nevertheless, these difficulties could be linked to the abrupt change from Arabic, the language used in primary school, to French, the language used in middle school. This change disrupts kids' learning processes and adds cognitive burden. The fact that middle school math instruction in French in Morocco is a very new phenomenon (beginning only seven years ago) is a caveat of this research. Therefore, the present group of educators and students is still adjusting to this shift, and it may be some time before the complete impact of the linguistic shift becomes obvious. This opens the door for researchers to come back to this study in a few years and see if the problems have been fixed and what the effects of teaching mathematics in French will be in the long run.

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APPENDIX

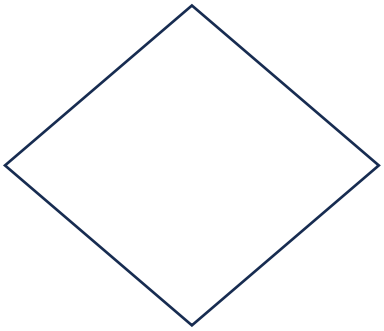
Here is the test that the students took

1) Donner le nom de chaque figure : اعط اسم كل شكل بالعربية و الفرنسية
(translation : Provide the name of each figure (question asked in Arabic and French) so that each student gives the figure's name in both Arabic and French.)

Arabe :……
francais : ……

Arabe :……
francais : ……

Arabe :……
francais : ……



Arabe :……
francais : ……

2) Calculer la surface de chaque figure : **(translation : Calculate the area of each figure)**

a) Carré de coté 5cm **(translation : Square with a side length of 5 cm)**

……
……

b) Rectangle de dimension 5cm et 6cm **(translation : Rectangle with dimensions 5 cm by 6 cm)**

……
……

3) Calculer le périmètre de chaque figure : **(translation : Calculate the perimeter of each figure)**

c) Carré de coté 5cm **(translation : Square with a side length of 5 cm)**

……
……

d) Rectangle de dimension 5cm et 6cm **(translation : Rectangle with dimensions 5 cm by 6 cm)**

……
……

4) أحسب مساحة هذه الاشكال **(translation from arabic : Calculate the area of each figure)**

a) مربع طول ضلعه 3cm **(translation : square with side 3cm)**

……
……

b) مسطيل أبعاده 4cm و 3cm **(trasnlation : rectangle with dimension 3cm&4cm)**

……
……

5) أحسب محيط هذه الاشكال **(translation : calculate the perimeter of each figure)**

c) مربع طول ضلعه 3cm **(translation :square with side 3cm)**

……
……

d) مسطيل أبعاده 4cm و 3cm **(translation : rectangle with dimension 3cm & 4cm)**

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