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Multilingualism In Algerian Primary Schools: Unveiling Its Role As A Barrier Or An Advantage

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Abstract	Article info
This research aims to investigate the effects of multilingualism in primary schools and its implications for pupils' language proficiency and cognitive development. It seeks to provide insights into effective educational strategies that harness the benefits of multilingualism in the Algerian primary school settings. This study has a mixed method research design. The research instruments were implemented include questionnaire, classroom observation, and test. The results were analyzed with the regard to the statistical elements (means, standard deviations) and the percentages presented. The findings highlight the positive effects of multilingualism on the linguistic and cognitive development, emphasizing the potential advantages it offers. Multilingual individuals demonstrate enhanced language skills, such as improved vocabulary acquisition, greater metalinguistic awareness, and heightened language-processing abilities. Moreover, the study explores the potential cognitive advantages associated with multilingualism, including enhanced executive functions, improved attention control, and cognitive flexibility.	Received 15 July 2023 Accepted 26 September 2023 ▲ Multilingualism ▲ primary schools ▲ language proficiency ▲ Cognitive skill.

# 1. Introduction

The inclusion of multilingualism in primary schools has emerged as a prominent and critical area of focus within contemporary educational discourse. As societies become our increasingly interconnected and culturally diverse, recognizing and harnessing the potential of multilingual education in the primary school setting has gained considerable significance. Multilingualism refers to the proficiency and utilization of multiple languages, and its incorporation in primary schools holds substantial implications for educational policies, curricular design, and pedagogical practices. The primary school years represent a crucial phase in children's linguistic and cognitive development, making the integration of multilingualism all the more vital. Departing from the conventional monolingual approach, multilingual education within primary schools acknowledges and embraces the diverse languages spoken by students in their homes, communities, and educational contexts. This paradigm shift underscores the intrinsic worth of multilingual learning learners' linguistic improve and to cognitive features. On the light of this thought, the current investigation tends to explore the effects of multilingual learning on pupils' language proficiency and cognitive development. It also aims to discover teachers' perspectives towards the implementation of multilingualism in Algerian primary schools. Hence, it attempts to answer the following research questions:

**a.** How does the implementation of multilingualism in primary schools influence pupils' language proficiency and cognitive development?

**b.** What are the perspectives of Algerian teachers towards the implementation of multilingualism in primary schools?

# 2. Multilingualism and Language Proficiency Development

Multilingualism has been shown to positively affect vocabulary acquisition. (Baker, 2011, p. 98). Studies indicate that individuals who are exposed to and engage in multiple languages tend to have larger vocabularies compared to monolinguals (Bialystok, 2009). Through exposure to diverse linguistic contexts, multilingual individuals encounter a wider range of vocabulary, enabling them to draw upon a larger lexical repertoire (Tokuhama-Espinosa, 2008, p. 102). For example, a study by Kaushanskaya and Marian (2009) that bilingual demonstrated children outperformed monolingual children in vocabulary tasks, showing accelerated growth in word knowledge across multiple languages.

Greater metalinguistic awareness is another language skill that develops through multilingualism. Metalinguistic awareness refers to the ability to think about and reflect on language as an object of study. Multilingual individuals have increased opportunities to compare and



contrast different languages, leading to heightened awareness of language structures, grammar rules, and linguistic concepts (Cummins, 2017). For instance, a study by Antoniou, Gunasekera, and Wong (2013) found that multilingual children exhibited greater metalinguistic awareness, demonstrating understanding an of language rules and the ability to manipulate language components more effectively.

Multilingualism also contributes to heightened language-processing abilities. Research suggests that multilingual individuals develop enhanced cognitive flexibility and efficiency in language processing tasks (Kroll & Bialystok, 2013). The constant activation and control of multiple languages require individuals to switch between languages and inhibit interference, leading to improved cognitive control mechanisms. For example, a study by Costa, Hernández, and Sebastián-Gallés (2008) demonstrated that multilingual adults exhibited faster language processing speeds and more efficient cognitive control compared to monolingual adults.

Derwing and Munro delve into the positive effects of multilingualism on pronunciation, emphasizing how exposure to multiple languages enhances phonetic awareness and improves pronunciation skills (Derwing & Munro, 2015, p. 74). When individuals learn multiple languages, they are exposed to different phonetic systems and speech patterns. This exposure broadens their understanding of various sound distinctions, leading to increased phonetic awareness. For example, а multilingual person who speaks both Spanish and English may be more attuned to the subtle differences in vowel sounds between the This two languages. heightened phonetic awareness allows multilingual individuals to produce sounds more accurately and distinguish between similar phonemes. Moreover, multilingualism exposes individuals to diverse accents and speech styles, helping them develop a flexible and adaptable approach to pronunciation. For instance, a multilingual speaker who has been exposed to British English, American English, and French accents will likely have a more nuanced understanding of pronunciation variations and be able to adapt their speech accordingly. Overall, the exposure to multiple languages enhances phonetic awareness and pronunciation skills, multilingual individuals enabling to communicate with greater clarity and accuracy.

Additionally, Cook delves into the positive influence of multilingualism on grammar structure, explaining how multilingual individuals develop a heightened awareness of grammatical structures across languages (Cook, 2013, p. 68). When individuals are exposed multiple to languages, different they encounter



grammatical systems, sentence structures, and rules. This exposure fosters a comparative perspective, enabling multilingual individuals to recognize similarities and differences in grammar languages. For across example, a multilingual speaker who learns both Spanish and English may develop a heightened awareness of verb conjugation patterns and sentence structure variations between the This two languages. comparative understanding enhances their metalinguistic awareness and deepens their comprehension of the underlying principles that govern grammatical structures. Additionally, multilingualism provides opportunities for cross-linguistic transfer, where knowledge from one language can be applied to another. For instance, a multilingual individual who is proficient in both German and English may transfer their understanding of case systems from German to assist in learning grammatical structures of other the ability to languages. This draw on knowledge from multiple languages the overall enhances mastery of grammatical structures. By developing a heightened awareness and understanding of grammar structures across languages, multilingual individuals not only refine

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their language-specific grammar skills but also acquire a broader linguistic toolkit that allows for more effective communication and expression (Grosjean, 2010, p. 72).

# 3. Multilingualism and Cognitive Development

Multilingualism has been found to have a positive impact on executive functions. (Bialystok, 2001, p. 145). Studies have shown that individuals who are fluent in multiple languages demonstrate enhanced executive functions, such as cognitive flexibility, working memory, and inhibitory control. The constant need to switch between languages and inhibit interference strengthens these cognitive processes. For example, a study by Bialystok and Martin (2004) found that bilingual children outperformed monolingual children in tasks that required executive control, indicating that bilingualism can contribute to the of advanced development executive functions. Improved attention control is another cognitive advantage associated multilingualism. with Multilingual often exhibit heightened individuals attentional skills and the ability to maintain focused attention in the face of distractions (Costa, Hernández, & Sebastián-Gallés, 2008). The constant activation and monitoring of multiple languages require individuals to selectively attend to relevant language cues and suppress irrelevant



information. For instance, a study by Barac and Bialystok (2012) found that bilingual children demonstrated superior attention control compared to monolingual children, suggesting that multilingualism contributes to enhanced attentional abilities.

Cognitive flexibility is another cognitive advantage that is fostered by multilingualism. Multilingual individuals often exhibit greater mental agility and to flexibility in adapting changing circumstances tasks and (Costa, Hernández, & Sebastián-Gallés, 2008). The constant need to switch between languages and navigate different linguistic systems strengthens cognitive flexibility. For example, a study by Kroll and Dussias (2017) found that bilingual individuals showed enhanced cognitive flexibility in tasks that required them to shift attention and switch between linguistic structures.

Multilingualism has also been linked to enhanced problem-solving skills. Multilingual individuals tend to exhibit advanced problem-solving abilities, as they are accustomed to navigating and resolving language-related challenges. The cognitive demands of using multiple languages encourage flexible thinking and the ability to find creative solutions. That is, bilingual individuals demonstrate superior problemsolving skills compared to monolingual individuals, suggesting that multilingualism may enhance cognitive problem-solving abilities.

The cognitive advantages of multilingualism extend beyond specific executive functions to overall cognitive flexibility and adaptability (Grosjean, 2010, p. 72). Multilingual individuals often exhibit a more flexible mindset, being able to shift perspectives and adapt to different linguistic and cultural contexts. Their exposure to multiple languages and cultures fosters an openness to diverse perspectives and enhances their ability to navigate unfamiliar situations. For example, a study by Kovács (2009) found multilingual individuals that showed cognitive flexibility greater and adaptability when faced with cognitive challenges, indicating the broader cognitive advantages associated with multilingualism.

#### 4. Research Aims

This exploratory research aims to delve into the effects of multilingualism in primary schools and its implications for pupils' language proficiency and cognitive development. The study recognizes the potential impact of multilingualism on students' educational experiences and aims to understand the factors that influence whether multilingualism acts as a barrier or an advantage in Algerian primary school settings. By exploring these factors, the research seeks to uncover insights into effective educational strategies that can effectively harness the benefits of multilingualism. The study will investigate



the relationship between multilingualism and language proficiency, examining how exposure to multiple languages influences pupils' language skills and competencies. Additionally, the research will explore the cognitive development of pupils in multilingual environments, assessing how multilingualism affects cognitive processes such as executive functions, memory, and attention control. By gaining a comprehensive understanding of the effects of multilingualism in Algerian primary schools, this research aims to inform educational practices and policies, facilitating the implementation of effective strategies that optimize the benefits of multilingualism and support pupils' language proficiency and cognitive development.

#### 5. Research Design

#### 5.1Participants

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The sample for this study consists of primary school pupils who are engaged in the study of Arabic, French, and English languages. The selection of participants for this sample was based on one specific criterion to ensure the diversity and representativeness of the multilingual context. The participants include 85 primary school pupils of the third grade level (1<sup>st</sup> November Primary School, M'sila). The sample size is determined to provide a sufficient representation of the multilingual population within the primary

school setting. This sample population was deliberately selected as pupils at the third grade are exposed to a multilingual learning context. In other words, the participants at this level are actively engaged in studying Arabic, French, and English as part of their curriculum (i.e., a multilingual setting). Teachers, on the other hand, are also considered as within the participants current investigation. 36 language teachers from different primary schools were selected. Each group of 12 teachers are responsible for teaching one single language. That is, the participants are grouped into three subgroups (12 teachers responsible for other teaching Arabic, 12 teachers responsible for teaching French, and other 12 teachers responsible for teaching English).

## 5.2 Research Procedure and instruments

This study utilizes a mixed-method research design to investigate the attitudes of teachers towards the linguistic and cognitive advantages of multilingual learning in primary schools. The research design incorporates multiple data collection methods to gather comprehensive insights into the research topic. Firstly, a questionnaire is administered to teachers who specialize in teaching the three languages of interest: Arabic, French, and English. The questionnaire aims to explore their attitudes towards the perceived benefits of

multilingual learning in terms of linguistic and cognitive development. The questionnaire provides a quantitative assessment of teachers' perspectives and allows for statistical analysis of the collected data.

In addition to the questionnaire, classroom conducted observations are in three different language-teaching classrooms. The observations are designed to detect observable outcomes related to the linguistic and cognitive dimensions of multilingual learning. By directly observing classroom interactions and instructional practices, the researchers gain qualitative data that provides insights into the actual implementation and impact of multilingual education.

Furthermore, language proficiency tests are administered to the primary school pupils studying the three languages. These tests tend to assess the pupils' language proficiency levels of each of the three language being taught (Arabic, French, and English). results The test provide quantitative data on the language abilities of the students, allowing for an evaluation linguistic development of their and proficiency across the different languages. By using a mixed-method research design with questionnaires, classroom observation, and language proficiency tests. this study aims to obtain a comprehensive understanding of teachers' attitudes towards the implementation of multilingualism in primary schools. The combination of quantitative and qualitative data provides a well-rounded perspective on the research topic, facilitating a deeper exploration of the potential benefits of multilingual education for both teachers and students in the primary school context.

#### 6. Discussion of the Results

This section provides data collected from the three research instruments used in this investigation. The percentages for each language stand independently and represent the performance of learners in that specific language.

# 6.1 Teachers' Questionnaire

The questionnaire that was distributed to teachers of the three languages, Arabic, French, and English, incorporated questions, which aim to collect data about attitudes towards multilingualism in Algerian primary schools. The following table indicates their answers in relation to the questions asked:

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# Table 1. Teachers' attitudes towards the effects of multilingualism in Algerian primaryschools

Teachers' personal clarifications towards the positive effect of multilingualism	Arabic Teachers	French Teachers	English Teachers
Raising pupils' awareness towards the linguistic construction and diversity of their first language	82%	71%	92.%
Developing pupils' flexibility and learning ability of different languages	56%	62%	70%
Enhancing pupils' linguistic proficiency and communication skills	81%	72%	75%
Improving pupils analytical and cognitive skills when learning different languages	85%	89%	91%
Fostering inclusivity and accommodating language and culture diversity	51%	68%	77%
Emphasizing the preservation of Algerian cultural and linguistic heritage	52%	70%	82%
Preparing pupils for future learning opportunities and challenges in different languages	68%	62%	78%

According to the answers gathered from the teachers' questionnaire, the majority of them (81.98%) agree that multilingualism acts as an advantage when it is applied in Algerian primary schools. The table above shows their clarifications when answering the questionnaire. According to the table 1, a significant percentage of teachers across all language categories recognize the positive impact of multilingualism on

raising pupils' awareness towards the linguistic construction and diversity of their first language. This is particularly evident among Arabic teachers (82%), followed by English teachers (92%) and French teachers (71%). This suggests that teachers perceive multilingualism as a means to enhance learners' understanding of language structure and variability,



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fostering a deeper appreciation for their own language.

Regarding the development of pupils' flexibility and learning ability in different languages, the percentages indicate that English teachers (70%) tend to have the highest acknowledgment, followed by French teachers (62%) and Arabic teachers (56%). This implies that teachers, those teaching especially English, recognize the benefits of multilingualism in equipping pupils with adaptable language skills and the ability to learn and communicate effectively in diverse linguistic contexts.

The percentages related to enhancing pupils' linguistic proficiency and communication skills reveal a positive consensus among all three categories of teachers. Arabic teachers show the highest percentage (81%), followed closely by French teachers (72%) and English teachers (75%). This indicates a widespread belief that multilingualism contributes to improving pupils' language proficiency and their ability to effectively communicate in different languages.

Teachers also perceive multilingualism as a catalyst for improving analytical and cognitive skills when learning different languages. The table shows that the majority of teachers in all categories acknowledge this positive effect, with percentages ranging from 85% to 91%. These findings indicate a recognition that multilingualism can enhance learners' cognitive abilities, such as critical thinking, problem-solving, and analytical skills, when navigating various languages.

In terms of fostering inclusivity and accommodating language and cultural diversity, the percentages demonstrate that English teachers (77%) have the highest level of acknowledgment, followed by French teachers (68%) and Arabic teachers (51%). This suggests that while there is a general understanding of the role of multilingualism in promoting inclusivity, English teachers show a greater inclination towards embracing language and cultural diversity in the classroom.

The percentages related to emphasizing the preservation of Algerian cultural and linguistic heritage show that a majority of teachers in all categories acknowledge this aspect of multilingualism. Arabic teachers demonstrate the lowest percentage (52%), followed by French teachers (70%) and English teachers (82%). This suggests that English teachers, in particular, recognize the importance of preserving the Algerian cultural and linguistic heritage through multilingual education.

Lastly, the table reveals that teachers, regardless of their teaching language, acknowledge the importance of multilingualism in preparing pupils for future learning opportunities and



challenges in different languages. The percentages range from 62% to 78%, indicating a shared belief among teachers that multilingualism equips students with the necessary skills to navigate diverse linguistic environments and adapt to future language learning requirements.

In summary, the percentages provided in the table reflect the varying degrees of agreement among Algerian teachers regarding positive effects of the multilingualism in primary schools. The data indicate a general recognition of multilingualism's benefits in terms of raising awareness, developing flexibility, enhancing linguistic proficiency, improving analytical and cognitive skills, fostering inclusivity, emphasizing cultural

heritage, and preparing students for future language learning. However, there are slight variations in the degree of agreement among teachers from different language backgrounds, suggesting the influence of their specific teaching contexts and linguistic preferences.

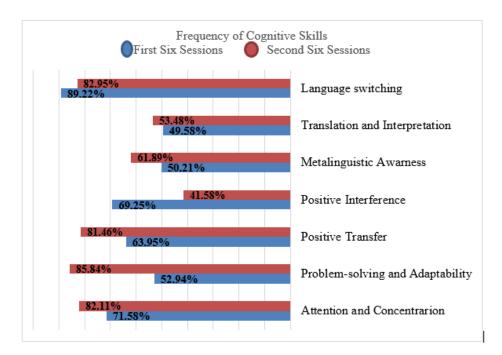
#### **6.2 Classroom Observation**

To cross-check the data gathered, the researcher used another research instrument to obtain results regarding pupils' language and cognitive development. The following table provides the frequency percentages of the language proficiency development and the cognitive strategies used when learning in Arabic, French, and English teaching classes

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Figure.1. The Frequency Percentages of Cognitive skills used by pupils in multilingual teaching classes



The table presents data from 12 observation sessions that focused on the cognitive behaviors of multilingual pupils. The percentages provided in the table offer insights into the effects of multilingualism on pupils' cognitive skills, particularly regarding language switching, translation and interpretation, metalinguistic awareness, positive interference, positive transfer, problem-solving and adaptability, as well as attention and concentration.

According to the data presented, it is clear that multilingualism has a positive impact on the cognitive skills of the observed pupils. In terms of language switching, both the first six sessions (89.22%) and the second six sessions (82.95%) demonstrate high percentages. This suggests that multilingual pupils are adept at switching between languages, indicating the cognitive flexibility and adaptability that multilingualism fosters.

The percentages related to translation and interpretation also indicate positive effects of multilingualism. While the first six sessions show a frequency of 49.58%, the second six sessions exhibit a slightly higher percentage at 53.84%. This suggests that multilingual pupils are actively engaging in translation and interpretation tasks, which requires cognitive skills such as lexical retrieval, semantic understanding, and the ability to bridge meaning across languages. Metalinguistic shows awareness an increase in the second six sessions (61.89%) compared to the first six sessions (50.21%). This indicates that multilingual developing pupils are a deeper understanding of language structures, rules. and patterns. Metalinguistic awareness is crucial for language analysis and comprehension, and its growth among multilingual pupils highlights the cognitive benefits of multilingualism.

Positive interference, which refers to the use of knowledge from one language to aid understanding or production in another, demonstrates a higher frequency in the first six sessions (69.25%) compared to the second six sessions (41.58%). This suggests that as multilingual pupils become more proficient in individual languages, they rely less on positive interference, indicating improved language separation and proficiency.

Positive transfer, on the other hand, shows consistently high percentages in both sessions, with the second six sessions (63.95%) slightly lower than the first six sessions (81.46%). This indicates that multilingual pupils are effectively transferring their linguistic and cognitive skills across languages, benefiting from the cognitive advantages of multilingualism.

Furthermore, the data reflect the positive effects of multilingualism on problemsolving and adaptability, as well as



attention and concentration. The percentages consistently demonstrate high levels of these cognitive skills in both the first and second six sessions, emphasizing the cognitive benefits that multilingual pupils gain from engaging in a multilingual learning environment.

To conclude, the data from the observation sessions highlight the positive effects of multilingualism on the cognitive skills of the observed pupils. Language switching, translation and interpretation, metalinguistic awareness, positive transfer, problem-solving and adaptability, as well as attention and concentration. all significant demonstrate percentages, indicating the cognitive advantages that multilingualism provides. These findings emphasize the cognitive flexibility, enhanced adaptability. and cognitive abilities that multilingual pupils develop through their exposure to multiple languages.

## 6.3 Language Proficiency Tests

Learners were tested in the three languages to obtain some data regarding their language proficiency in multilingual teaching settings. In each language test, learners received other three tests to assess three main language criteria namely vocabulary acquisition, grammar structure, and pronunciation. That is, in each language test (Arabic, English, and French), learners had other three tests to undertake. The results gathered reflect pupils' performance in these three main criteria and within the three languages: Arabic, French. and English. The researcher analyzed the data in terms of whether pupils outperform in the tests of the three languages to see if learning three languages at the same time affects pupils' language proficiency positively or negatively. The results are presented and analyzed separately.

Test Criteria	Percentages of Outperformed Pupils			
Vocabulary acquisition	Arabic French English			
	Language	Language	Language	
Vocabulary acquisition	61.45%	51.22%	68.74%	
Grammar structures	50.23%	49.71%	51.42%	
Pronunciation	63.85%	56.84%	59.69%	

Table 2. The percentages of Pupils who outperformed in the Arabic, French, andEnglish Test

The table presents the percentages of pupils who outperformed in a language proficiency test for Arabic, French, and English. These percentages provide insights into the positive effects of multilingual learning on the development of language proficiency among pupils at the primary school level.

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Regarding vocabulary acquisition, the data indicate that multilingual learning pupils' positively affects language proficiency in all three languages. The show that a percentages significant majority of pupils outperformed in Arabic (61.45%) and English (68.74%), while a slightly lower percentage outperformed in French (51.22%). This suggests that multilingual learning contributes to the expansion of pupils' vocabulary across different languages, enabling them to effectively acquire and utilize a broader range of words and expressions.

In terms of grammar structures, the percentages highlight a relatively similar performance across all three languages. While the percentages are relatively close, multilingual learning still plays a positive role in pupils' grammar skills. The data indicate that a substantial proportion of pupils outperformed in Arabic (50.23%) and English (51.42%), with slightly fewer pupils outperforming in French (49.71%). This suggests that multilingual learning understanding facilitates the and of grammatical application structures across different languages, enhancing pupils' overall proficiency in grammar.

Pronunciation is another aspect of language proficiency addressed in the table. The data reveal that multilingual learning has a positive impact on pupils' pronunciation skills. The percentages show that a significant majority of pupils outperformed in Arabic (63.85%), while a slightly lower percentage outperformed in English (59.69%) and French (56.84%). This indicates that multilingual learning helps pupils develop accurate pronunciation skills across multiple languages, allowing them to articulate sounds and words more effectively.

Overall, the data from the table highlight the positive effect of multilingual learning on the language proficiency development of pupils at the primary school level. Pupils demonstrate higher percentages of outperformance in vocabulary acquisition, grammar structures, and pronunciation across all three languages, indicating the benefits of multilingualism in fostering a strong foundation in language proficiency. These findings suggest that exposure to multiple languages in a multilingual learning environment supports pupils in acquiring a diverse range of language skills and enhances their overall language proficiency.

# 7. CONCLUSION

In conclusion, the discussion on the positive effects of multilingualism on pupils' language proficiency and cognitive development reveals a clear and significant impact of multilingual learning in primary schools. The data presented in various tables demonstrate that multilingual pupils outperform in different aspects of language proficiency, including vocabulary

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acquisition, structures, and grammar pronunciation, across multiple languages. This indicates that exposure to and engagement with multiple languages fosters a strong foundation in language skills, enabling pupils to expand their vocabulary, complex grasp grammar structures. develop and accurate pronunciation.

Moreover, multilingualism positively influences cognitive development, as evidenced by the enhancement of executive functions. attention control, cognitive flexibility, problem-solving skills, and metalinguistic awareness among multilingual pupils. The cognitive demands of managing multiple languages promote cognitive agility, adaptability, and a deeper understanding of language structures and cultural diversity. These findings suggest that multilingual learning offers pupils significant advantages in both language proficiency and cognitive skills, providing them with valuable tools for academic success and future opportunities.

Based on the discussion, several recommendations can be made to harness the positive effects of multilingualism in primary schools. First, teachers should receive training and support in multilingual pedagogy to effectively integrate and leverage multilingualism in the classroom. This includes utilizing language-switching strategies, code-switching activities, and fostering a supportive environment that

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values and encourages the use of multiple languages. Second, school stakeholders should ensure access to a variety of resources, such as books, materials, and technology, in different languages. This promotes exposure to diverse linguistic contexts and encourages active engagement with languages beyond the classroom.

In addition, teachers should have access to ongoing professional development opportunities that enhance their knowledge multilingual teaching of strategies, and language assessment, cultural sensitivity. This ensures they remain wellequipped to meet the evolving needs of multilingual pupils. Finally, teachers need also to develop comprehensive and contextually appropriate language proficiency assessments that accurately measure pupils' skills in each language. Regular assessment can help identify areas of strength and areas that need further support, enabling targeted interventions to enhance language proficiency.

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