The interplay between French and English reading skills among Moroccan 9th-grade middle school students: a correlational study

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Abstract

This correlational study investigates the association between reading skills in French (L2) and English (L3) among 9th-grade middle school students in Morocco (n = 70). Building on Cummins' Interdependence Hypothesis, the study explores the extent to which L2 French reading proficiency is associated with L3 English reading abilities. Standardized cloze tests were administered to students in Sidi Kacem, Morocco, to assess reading comprehension in both languages. Data analysis using SPSS 21 employed descriptive statistics and Pearson's correlation coefficient to examine the relationship between L2 and L3 reading skills. The findings revealed a significant positive correlation (R = 0.69, p < .001) between L2 and L3 reading skills, particularly in sub-skills like skimming and scanning. This suggests that strong foundational reading abilities acquired in French (L2) can facilitate the development of reading skills in English (L3). The discussion emphasizes the importance of capitalizing on existing L2 competencies to enhance L3 learning. It proposes a pedagogical approach that acknowledges the interconnectedness of language abilities, fostering a cross-linguistic instructional perspective that leverages students' strengths across their linguistic repertoire. Overall, this study contributes empirical evidence to the field of language acquisition, offering valuable insights into effective language education practices in multilingual contexts like Morocco.

Keywords: language acquisition, reading skills, L2 modalities, L3 proficiency, bilingualism, cross-linguistic influence, cognitive transfer

1. Introduction

Multilingual environments present a captivating tapestry of interwoven languages, each influencing and shaping the others. Formal education plays a crucial role in this intricate interplay, particularly in contexts like Morocco, where French (L2) and English (L3) are introduced sequentially (Ennaji, 2005; Sayeh & Razkane, 2022). This sequential introduction offers a unique opportunity to explore the relationship between established and developing language skills. Research suggests that proficiency in a student's native language (L1) can significantly influence their ability to acquire a second language (L2) (Cummins, 1979). This interconnectedness, where skills learned in one language can facilitate learning in another, forms the core of Cummins'

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"Interdependence Hypothesis." Investigating this relationship between Moroccan 9th-grade students' French reading abilities (L2) and their English reading modalities (L3) can not only enhance our understanding of the dynamics of multilingual learning but also inform the development of targeted language instruction methods that leverage these connections.

Cummins' (1979) Interdependence Hypothesis proposes a paradigm shift in understanding the relationship between language skills across various domains. He argues against a compartmentalized view of language acquisition, suggesting that L1 proficiency, particularly in aspects related to "Basic Interpersonal Communicative Skills" (BICS), has a significant impact on the development of Cognitive Academic Language Proficiency (CALP) in both L1 and L2 (Albirini, 2019). BICS refer to the everyday language skills used for social interaction and basic communication. In contrast, CALP encompasses the more complex language skills required for academic success and abstract thought. Crucially, Cummins posits that strong BICS development in L1 lays the foundation for CALP development in both L1 and L2. This is because the underlying cognitive processes involved in language acquisition, such as analysing sentence structure, understanding vocabulary meaning, and making inferences, are not language-specific (Taillefer, 1996). By mastering these processes in L1, students can transfer this knowledge to L2 learning, accelerating their acquisition of CALP in the new language.

Cummins' (1979) Interdependence Hypothesis sheds light on how L1 proficiency in specific reading sub-skills can act as a scaffold for L2 acquisition. Imagine a student who has a strong foundation in skimming and scanning techniques in French (L2). When encountering an English passage (L3) for the first time, these established skills can be readily transferred and applied (Razkane et al., 2023b). Skimming, the ability to quickly identify key points and main ideas, is a crucial skill for navigating unfamiliar texts. The student's experience skimming French texts can translate directly to skimming English passages, allowing them to grasp the general gist and identify relevant sections more efficiently (Madani, 2016). For example, the student's knowledge of French sentence structure and vocabulary can facilitate identifying topic sentences and key phrases in English, even if they do not understand every word. Similarly, scanning, the ability to locate specific information within a text, becomes more efficient when students can leverage existing L2 knowledge. Having honed their scanning skills in French, the student can apply the same strategies to locate specific dates, names, or figures within the English text. This transfer of knowledge demonstrates how proficiency in L2 reading sub-skills can scaffold the development of CALP in L3 reading, highlighting the interconnectedness of these abilities within a learner's repertoire (Madani & Larouz, 2020).

Morocco's educational system offers a fascinating case study for exploring the Interdependence Hypothesis in action. Public schools typically introduce English (L3) at the 9th-grade level, while private schools may begin instruction earlier (Sayeh& Razkane, 2022). This variation in the starting point for English learning creates a context where students' existing French language skills (L2) can serve as a valuable foundation for developing English reading proficiency (L3) (Sadiqi, 2006). Since French is typically introduced earlier in the educational system, students will have had more time to develop BICS and

some aspects of CALP in French (Zouhir, 2013). Drawing on the Interdependence Hypothesis, we can expect these established language skills in French to facilitate the development of CALP in English, particularly in areas where transferable cognitive processes are involved. Therefore, a strong understanding of the relationship between French reading skills (L2) and English reading modalities (L3) can inform the design of targeted language instruction methods that capitalize on this interconnectedness.

By investigating the association between L2 and L3 reading skills in the Moroccan context, this study aims to contribute to the growing body of research on the Interdependence Hypothesis. A deeper understanding of how established language skills in French influence the development of English reading abilities will be crucial for educators in Morocco and other multilingual contexts. Such knowledge can help tailor language instruction methods that leverage the existing linguistic strengths of students, ultimately fostering more effective and efficient language learning experiences. In a nutshell, exploring the intricate interplay of languages through the lens of the Interdependence Hypothesis holds the potential to revolutionize our approach to language education in multilingual environments.

Research Question:

The current study is guided by the following research question:

Is there a significant relationship between Moroccan 9th-grade students' existing French reading abilities (L2) and the development of their English reading comprehension skills?

1.1.   Literature review

Reading has garnered significant attention from scholars and language experts who recognize it as a "highly complex skill" essential for success in societies where written communication is prevalent" (Rayner et al., 2012, p. vii). This very complexity has given rise to a diverse range of definitions for reading, reflecting different perspectives.

Brassell and Rasinski (2008) define reading as the ability to comprehend and derive meaning from written text. They emphasize that comprehension is an integral aspect of reading, as it signifies successful interaction with the text. Similarly, Grabe (2009) cites scholars who view reading as encompassing "...learning new conceptual information from texts, synthesizing information across multiple texts, critiquing information presented, and drawing upon comprehension skills to re-interpret texts" (Elley, 1992; Kirsch et al., 2002; NAAL, 2005; NAEP, 2007 as cited in Grabe, 2009, p. 4). This perspective underscores reading as not just a singular skill, but rather a constellation of sub-skills.

From a cognitive standpoint, reading is viewed as a mental ability that allows individuals to leverage their existing knowledge, process information, interpret text mentally, and engage with it (Perfetti, 2007; Urquhart & Weir, 2014; Perfetti, Landi, & Oakhill, 2005; Brassell and Rasinski, 2008). This cognitive dimension of reading necessitates consideration of other psychological factors such as working memory, eye movements, and word conceptualization. In a nutshell, these diverse definitions converge on the idea that reading is a receptive and perceptive language skill that facilitates a

reciprocal exchange and interpretation of (Jayaseelan, Varshini, & Rajeswaran, 2024).

Understanding how language skills develop and interact across multiple languages is crucial for optimizing language learning experiences. This research delves into the relationship between established French reading abilities (L2) and the development of English reading comprehension among Moroccan 9th-grade students. Cummins' (1979) Linguistic Interdependence Hypothesis (LIH) provides a robust theoretical framework for examining this phenomenon.

The LIH challenges the compartmentalized view of language acquisition, proposing a strong interconnectedness between language skills across various domains (Cummins, 1979). Central to the LIH is the concept of Common Underlying Proficiency (CUP) which refers to the underlying cognitive processes involved in language acquisition, such as analyzing sentence structure, understanding vocabulary meaning, paraphrasing, providing an outline to the text, providing a title to the texts and making inferences. These processes are not language-specific; proficiency in one language strengthens these cognitive abilities, which can then be leveraged for learning another language (Cummins, 2008).

The LIH posits a crucial distinction between Basic Interpersonal Communicative Skills (BICS) and Cognitive Academic Language Proficiency (CALP). BICS encompass the everyday language skills used for social interaction and basic communication. CALP, on the other hand, refers to the more complex language skills required for academic success and abstract thought. While BICS development precedes CALP development within a single language, the LIH suggests that strong BICS development in L1 lays a strong foundation for CALP development in both L1 and L2 (Cummins, 1979). This is because the mastery of CUP in L1 facilitates its application to learning CALP in L2.

A growing body of research supports the core tenets of the LIH. A study by Hamied et al. (2017) investigated the relationship between L1 reading skills and L2 academic writing proficiency among Arabic-speaking university students. Their findings aligned with the LIH, demonstrating that stronger L1 reading skills positively impacted L2 academic writing proficiency. Similarly, a study by Schlechter (2014) explored the influence of L1 literacy skills on L2 reading comprehension among adult learners. The results supported the LIH, indicating that well-developed L1 literacy skills facilitated the development of L2 reading comprehension.

These studies, along with others (e.g., Jakiel et al., 2019), highlight the validity of the LIH and its explanatory power in understanding how language skills developed in one language can be transferred and applied to learning another. In the context of this research, we can expect Moroccan students' existing French reading skills (L2) to influence the development of their English reading comprehension. While Kramsch's (1998) Cultural Competence Hypothesis and Vygotsky's (1978) Zone of Proximal Development (ZPD) framework are valuable in language learning research, they are not directly relevant to the current study's focus. This research investigates the transfer of reading skills across languages, not the acquisition of cultural knowledge (Kramsch, 1998) or the role of scaffolding in language development

(Vygotsky, 1978). Therefore, the focus of this literature review remains on the LIH and its explanatory power in understanding the interconnectedness of reading skills across L2 and L3.

Several studies demonstrate the transferability of reading skills across languages. A study by Wang (2013) investigated the relationship between L1 reading comprehension and L2 vocabulary acquisition among Chinese learners of English. Their findings aligned with the LIH, suggesting that strong L1 reading skills facilitated vocabulary learning in L2 English. This highlights the transfer of cognitive processes involved in reading, such as understanding text structure and analysing word relationships, to a new language.

Similarly, a study by Dong (2006) explored the impact of L1 reading fluency on L2 reading comprehension among Korean learners of English. Their results supported the notion of transfer, indicating that well-developed L1 reading fluency positively influenced reading comprehension in L2 English. This suggests that established automaticity in decoding text in L1 can be leveraged to navigate unfamiliar texts in L2.

While research directly examining the transfer of reading skills between English (L3) and French (L2) appears limited in Morocco, studies investigating the relationship between EFL reading and reading in other languages offer valuable insights. One such study by Madani and Larouz (2020) explored the correlation between French (L2) reading proficiency and English (L3) reading skills among Moroccan EFL learners. Surprisingly, their findings revealed no significant correlation between the two language skills. This result contradicts previous research that suggests a transfer effect, where skills learned in one language can benefit learning in another. The authors propose alternative explanations for these findings. They suggest that motivational factors, such as the perceived global importance of English compared to French, might influence student performance. Additionally, they point towards the potential impact of teaching methodologies, where ineffective French teaching strategies could hinder student achievement in that language.

A study by Cheng et al. (2014) explored the impact of L1 reading strategies on EFL reading comprehension among Chinese learners. Their findings aligned with the LIH, suggesting that strong L1 reading strategies facilitated the use of similar strategies in EFL reading. This highlights the transferability of underlying cognitive processes involved in reading comprehension across languages. Another study by Nassaji & Farid (2012) investigated the influence of L1 reading skills on vocabulary acquisition in L2 English among Iranian learners. Their results supported the notion of interdependence, indicating that well-developed L1 reading skills positively impacted vocabulary learning in L2 English. This suggests that strong reading skills in one language can provide a foundation for building vocabulary knowledge in another.

Morocco's multilingual educational environment offers a unique context to explore the interdependence between English (L3) and French (L2) reading skills. Recent studies by Razkane and Diouny (2022, 2021) shed light on this specific phenomenon. Their research investigated the "retroactive transfer" of reading strategies, which are conscious processes readers use to plan, monitor, and evaluate their comprehension.

While research specifically examining the transfer of reading skills in the Moroccan context appears limited, a recent study by Razkane et al. (2023a) offers valuable insights. This study investigated the use of metacognitive reading strategies by Moroccan 11th-grade students in both Arabic (L1) and English (L3). The findings of Razkane et al. (2023a) align with the LIH by demonstrating some transfer of reading strategies between Arabic and English. Students exhibited similar strategy use for tasks requiring planning and monitoring comprehension in both languages. However, the study also revealed areas where strategy use differed between languages, suggesting the need for targeted instruction to bridge these gaps.

This brief exploration of international research and the Moroccan study by Razkane et al. (2023a) highlights the potential for transfer of reading skills and strategies across languages. While the specific nature and extent of transfer may vary depending on factors like language similarity and instructional approaches, the underlying cognitive processes involved in reading offer a foundation for building proficiency in a new language. Investigating these transfer phenomena within the Moroccan context of French (L2) and English (L3) reading can provide valuable insights for educators seeking to optimize multilingual learners' reading development.

Razkane and Diouny (2022) explored the transfer of reading strategies from English (L3) to French (L2) among Moroccan trilingual learners. Their findings provided evidence for cognitive retroactive transfer, demonstrating that established strategies in L3 English could be applied to enhance comprehension in L2 French. This highlights the potential for learning in English to positively impact reading skills in French.

This current study aims to address this gap by investigating the specific reading skills and strategies Moroccan students leverage when encountering English texts for the first time. By examining the relationship between their established French reading abilities (L2) and their developing English reading skills (L3), this research seeks to contribute to the growing body of knowledge on the interdependence between reading skills across languages within a multilingual learning environment like Morocco. The findings can inform the development of targeted language instruction methods that capitalize on the interconnectedness of reading skills to optimize Moroccan students' success in acquiring English reading proficiency.

The present study delves into the intricate relationship between Moroccan students' reading abilities in French (L2) and English (L3). The Moroccan educational system presents a unique case, as French is typically introduced earlier in the curriculum compared to English. This sequential language learning experience raises a fascinating question: Do established French reading skills (L2) serve as a springboard for developing English reading comprehension (L3)? By investigating this directional hypothesis, the present study seeks to illuminate the dynamic relationship between reading skills across languages within a multilingual learning environment like Morocco.

DH1: There is a significant positive relationship between Moroccan 9th-grade students' existing French reading abilities (L2) and the development of their English reading comprehension (L3).

2. Methodology

2.1.   Participants and research site

This study investigates the relationship between established French reading skills (L2) and developing English reading comprehension (L3) among Moroccan 9th-grade students. The target population for this research comprises students enrolled in the 9th grade curriculum within public schools located in the urban centre of Sidi kacem, Morocco. The selection of this specific population is strategic and aligns with the study's objectives.

Ninth graders represent a critical juncture in Moroccan language education, as they typically begin formal instruction in English (L3) after having established a foundation in French (L2) for eight years. This sequential language learning experience positions these students at an ideal stage to examine the potential transfer of reading skills between French and English. Furthermore, the focus on 9th graders ensures a relatively homogenous level of exposure to both languages within the Moroccan educational system.

To ensure a focused and representative sample, this study employed a non-random convenience sampling approach. Logistical constraints prevented testing the entire population of 9th graders in the target city of Sidi Kacem, Morocco. Therefore, the study recruited participants from two public schools: Ibn Rochd and Ibn Tomart. A total of 70 students participated, with 35 students from each school. The sample reflects the city's demographics, with the majority of students residing in Sidi Kacem and the remaining 20% coming from neighbouring rural areas. Furthermore, all participants belong to the middle class, ensuring a relatively homogenous socioeconomic background within the sample and the sample comprised a gender balance which means that 50% are females and 50% are males.

2.2.   Data collection tools

This study relied on two comprehension tests: An English reading comprehension test and a French reading comprehension test. The English Reading Comprehension Test (ERCT) was devised by the researchers based on many reading comprehension exams administered by teachers in the department of English studies. It was also revised by many teachers who did a lot of modifications and provided advice on some possible issues. The French Reading Comprehension Test (FRCT) was adapted from a collection of middle school reading comprehension exams and revised by experienced French teachers. To ensure consistency in measuring reading comprehension across languages, the researchers employed identical rubrics for both the French and English reading tests. These rubrics evaluated various reading skills, including: selecting an appropriate title, understanding vocabulary, answering true/false and direct questions, paraphrasing text, summarizing key points, and outlining the overall structure. The rubrics were meticulously designed to maintain a similar level of difficulty for both tests, with identical scoring procedures applied to ensure reliable data collection.

2.3.   Instrument Validation and Reliability

The study's foundation rests on the instruments employed to measure reading ability. Therefore, meticulous attention was paid to both the reliability and validity of these instruments. Reliability, ensuring the consistency of the

measurements, was addressed through internal consistency. This involved consulting with middle school teachers to verify that the scoring rubrics and subcategories within the three tests accurately assessed reading skills. Additionally, inter-rater reliability was emphasized to ensure consistency in scoring across different examiners. Validity, focusing on whether the instruments truly measured reading ability, was addressed through face validity. Here, the researchers sought feedback from practitioners in the field to determine if the tests appeared to capture the intended construct.

2.4. Data gathering processes

The researchers employed a two-part testing schedule, acknowledging the length of the instruments (90 minutes each). This method prioritized participant comfort and minimized disruption to academic routines. Before each session, researchers obtained informed consent after thoroughly explaining the study's research nature (not for grading). To ensure anonymity, participants could use nicknames. Standardized testing conditions were maintained by recruiting colleagues to act as invigilators. Participants received clear instructions and the opportunity to ask clarifying questions. Initial recruitment efforts faced limitations; however, these were addressed through collaboration with teachers. The teachers facilitated test administration by integrating it into their existing class schedules. This collaborative approach significantly boosted participation rates.

2.5. Data Analysis Procedures

Effective data collection is only the first step in achieving the study's objectives. Rigorous analysis is required to uncover meaningful insights from the gathered information. The nature of the data collection instruments (tests and inventories) yielded quantitative data in the form of scores. Therefore, the Statistical Package for Social Sciences (SPSS) software 21 was employed to analyze this numerical data. The initial stage involved descriptive statistics, examining central tendencies (e.g., means, medians) of participant scores in French, English, and interpreted scores. To investigate the research hypothesis, which posits a correlation between French and English reading ability, Pearson's correlation coefficient was utilized. This statistical test assesses the strength and direction of the linear relationship between these two variables.

3. Findings

3.1. Descriptive statistics

Table 1 shows that scores ranged from 4.00 to 10.00 in both languages, with averages of 6.53 (L2) and 6.49 (L3). Standard deviations (1.38 for L2 and 1.29 for L3) indicate moderate variability around the means. No missing data were observed (n = 70).

Table 1

Descriptive Statistics of French and English Reading Skills

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ReadinginL2	70	4,00	10,00	6,5286	1,38021
ReadinginL3	70	4,00	9,00	6,4857	1,29372
Valid N (listwise)	70				

3.2. Correlation Results

To visualize the type of relationship that exists between French and English reading skills, a scatterplot is displayed (see Figure 1 below).
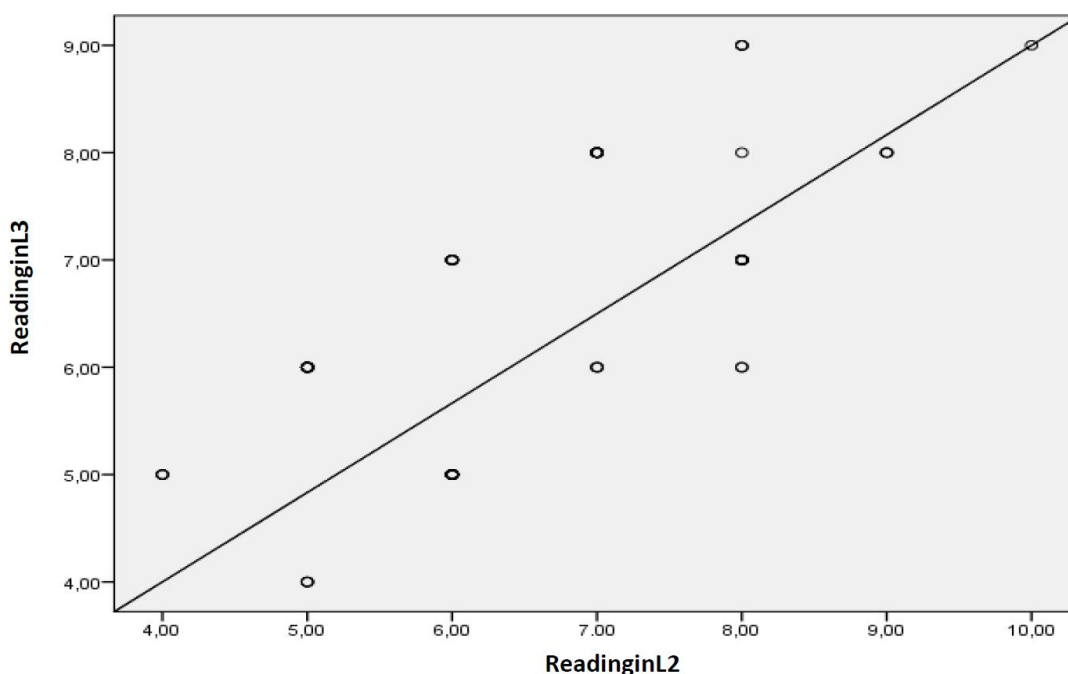
Figure1. Scatter plot of the relationship between French and English reading skills

The scatter plot visually represents the relationship between "Reading in L2" and "Reading in L3" for the 70 participants. This graphical depiction allows us to observe the distribution of data points and patterns within the correlation. As we examine the scatter plot, the clustering of points along a positively sloped line indicates a positive correlation between the two variables. This alignment reinforces the quantitative correlation coefficient, revealing that participants with higher scores in reading proficiency in their second language tend to have correspondingly higher scores in their third language reading skills. Additionally, the plot's spread and density of points offer insights into the strength and consistency of the relationship. The scatter plot provides an accessible and insightful visualization that complements the

statistical analysis, enabling a clearer understanding of the interrelation between the participants' reading skills in both languages.

Table 2
Correlation between French and English reading skills

Correlations		Readingi nL2	Readingin L3
Reading inL2	Pearson Correlation	1	,698**
	Sig. (2-tailed)		,000
	N	70	70
Reading inL3	Pearson Correlation	,698**	1
	Sig. (2-tailed)	,000	
	N	70	70
**. Correlation is significant at the 0.01 level (2-tailed).			

A Pearson correlation analysis was conducted to investigate the relationship between L2 and L3 reading proficiency. The analysis revealed a significant positive correlation (R = 0.69, p < .001), indicating that participants with higher scores in L2 reading also tended to have higher scores in L3 reading

3.3.   Simple Linear Regression

A basic linear regression analysis was conducted to assess the predictive capability of French reading skills for determining the extent of English reading proficiency. The outcomes of this analysis are presented in Table 3 as shown below:

Table 3
Model Summary[b] (FRS and ERS)

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,698[a]	,488	,480	,93290	2,283
a. Predictors: (Constant), ReadinginL2					
b. Dependent Variable: ReadinginL3					

The analysis revealed a significant positive relationship (R = 0.69) between L2 and L3 reading proficiency. The R-squared value of 0.48 indicates that L2 reading proficiency explains nearly 49% of the variance in L3 reading skills. The adjusted R-squared value of 0.48 provides a more conservative estimate that accounts for model complexity. The standard error of the estimate (0.93) suggests a reasonable fit of the model to the data. Finally, the

Durbin-Watson statistic (2.28) suggests minimal autocorrelation in the residuals.

Table 4
ANOVA a (FRS and ERS)

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	56,305	1	56,305	64,696	,000[b]
	Residual	59,181	68	,870		
	Total	115,486	69			
a. Dependent Variable: ReadinginL3						
b. Predictors: (Constant), ReadinginL2						

The ANOVA results (Table 4) show a statistically significant relationship between L2 and L3 reading proficiency (F = 64.69, p < .001). This indicates that the model explains a significant portion of the variance in L3 reading scores.

Table 5
Coefficients a (FRS and ERS)

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,213	,543		4,077	,000
	ReadinginL2	,654	,081	,698	8,043	,000
a. Dependent Variable: ReadinginL2						

The regression analysis revealed a significant positive effect of L2 reading proficiency on L3 reading skills (Beta = 0.69, p < .001). This indicates that for every one-standard-deviation increase in L2 reading, L3 reading scores are expected to increase by 0.69 standard deviations.

4. Discussion

This study examined the association between reading skills in participants' second language (L2) and their third language (L3). The analysis revealed a robust positive correlation (R = 0.69), signifying a statistically significant link between stronger L2 reading skills and stronger L3 reading skills. The significance value (sig value) and scatterplot analysis suggest a statistically significant relationship between French and English reading test scores. This strong correlation provides evidence to reject the null hypothesis, which proposed no correlation between these variables. Conversely, it supports the acceptance of the alternative hypothesis, positing a relationship between French reading ability and English reading ability. Our findings align with previous research suggesting a connection between reading abilities across languages (e.g., Carrell, 1983; Dong, 2006; Kim & Castro, 2018; Razkane et al., 2023a; Razkane & Diouny, 2022).These results imply that

foundational reading skills developed in one language may have a transferable influence on reading development in another The current findings regarding transfer of reading skills from French (L2) to English (L3) resonate with established research on language learning. Geva and Ryan's (1993) work demonstrates that "the underlying proficiency, which is mediated through the child's first language, can then resurface as a transfer of relevant concepts and skills to another language" (p. 6). This aligns with the notion that successful first-language learning, particularly in reading development, can activate the transfer of acquired skills to subsequent languages. Similarly, Jiang (2011) found that participants with strong Chinese reading ability had an advantage when learning English. These well-developed Chinese reading skills positioned them cognitively to leverage the reading strategies learned in their native language when approaching English texts. In essence, these studies, along with the present research, emphasize the critical role of maintaining strong first-language literacy skills in supporting second-language reading development.

The rejection of the second research hypothesis, which posited a straightforward disconnection between French reading proficiency and English reading success, necessitates a more nuanced interpretation of its sub-hypotheses. While the sample demonstrates instances where strong French reading skills transferred effectively to English reading, as initially expected, other participants with well-developed French reading still struggled in English. This finding underscores the influence of factors beyond French proficiency on English reading development.

The sub-hypothesis suggesting a connection between weak French reading and English reading difficulties finds some support. The observed correlation implies that students experiencing difficulties in both languages might share underlying challenges. However, the direction of causality remains unclear. It's uncertain whether French reading difficulties hinder the development of English reading skills, or if broader learning issues manifest in both languages. Attributing English reading difficulties solely to problems with French is an oversimplification. Instructional methods, student motivation, and individual cognitive differences likely play a role. Future research should investigate these factors alongside French reading ability to gain a more comprehensive understanding of English reading development in Moroccan students (Razkane & Diouny, 2022).

Beyond the scope of this study, several factors could potentially influence the observed correlation between L2 and L3 reading skills. Participants' overall language proficiency in both L2 and L3, their exposure to diverse languages throughout their lives, and socio-cultural influences within their learning environment could all interact with the observed association. For instance, research suggests that a strong L2 foundation can facilitate the acquisition of L3 vocabulary and grammar (Cummins, 2008). Similarly, exposure to multiple languages from a young age might enhance cognitive flexibility, potentially benefiting reading development in both languages (Marian & Klebahn, 2006). Future research that delves deeper into these factors and their potential influence on the association between L2 and L3 reading skills would provide a more comprehensive understanding of the complex interplay at work (de Jong, 2010).

4.1. Limitations

The correlational nature of the study necessitates acknowledging certain limitations. While the findings demonstrate that stronger L2 reading skills co-occur with stronger L3 reading skills, they cannot definitively establish causation. Our data cannot confirm that strong L2 reading directly leads to improvement in L3 reading. Longitudinal studies that track participants' reading development over time would be necessary to explore this possibility and establish causal relationships.

The generalizability of the present findings might be limited by the sample employed. The study participants were exclusively Moroccan 9th-grade middle school students who live in Sidi Kacm. It is crucial to consider whether this association holds true for individuals of different age groups or language backgrounds. Future research that investigates this correlation in more diverse populations, encompassing varying ages, language pairs, and educational contexts, would be valuable to broaden the generalizability of these results.

4.2. Methodological considerations for future research

This study's findings offer valuable insights for researchers exploring language transfer in future investigations. Firstly, employing a mixed-methods approach could provide deeper understanding. Qualitative data, such as student interviews, could illuminate reasons for difficulty with French, student attitudes towards language learning and transfer, and their awareness of language systems. Secondly, including additional language skills beyond reading, like writing and speaking, would provide a more comprehensive picture of transfer phenomena. Examining transfer across different skill domains could be a fruitful avenue for future research. Thirdly, diversifying reading comprehension assessments beyond the current rubrics would ensure a more nuanced evaluation of reading ability. Exploring alternative assessment methods could offer a richer understanding of student competencies. Fourthly, comparative studies involving participants from various contexts, universities, or departments could enhance the generalizability of findings. The current results might not be universally applicable, and contrasting them with other settings could offer valuable insights. Finally, longitudinal research designs could provide a clearer picture of how language abilities develop and at which stage transfer typically occurs. Examining language development over time could offer deeper understanding of the transfer process.

4.3. Pedagogical implications for language learning

The level observed in French among participants suggests a need to refocus French language instruction on developing advanced reading skills. This could involve diversifying reading techniques and strategies employed in the classroom. Catering to students' different learning styles by incorporating a variety of instructional methods would be beneficial. Furthermore, utilizing authentic texts that address real-world issues could enhance engagement and motivate students. Early and consistent practice of scanning and skimming techniques would equip students to navigate diverse reading materials efficiently.

5. Conclusion

This study investigated the association between reading skills in participants' second language (L2) and their third language (L3) among Moroccan 9th-grade middle school students. The findings reveal a robust positive correlation (r = 0.69) between L2 and L3 reading proficiency, indicating that strong reading skills in a student's second language often correspond with strong reading skills in their third language. These insights hold substantial implications for language education practices and policy development.

The identified correlation between L2 and L3 reading skills extends its significance beyond the classroom, informing language education policy. This correlation underscores the benefits of integrating students' L2 strengths into pedagogical strategies for L3 learning. It aligns with the evolving consensus in language education that advocates for a comprehensive, inclusive approach that leverages learners' diverse linguistic and cognitive assets.

Exploring the intricate relationship between L2 and L3 reading skills provides valuable insights for educators and policymakers. It highlights the transferability of language competencies across different languages. By recognizing this positive correlation, educational institutions can devise more effective and targeted interventions. These interventions can build upon foundational skills acquired in the second language to support the acquisition of the third language. Moreover, this understanding promotes a paradigm shift, moving away from isolated language instruction toward an integrated approach that acknowledges and values the interconnectedness of languages within a learner's cognitive framework.

In a world characterized by linguistic diversity and multilingualism, this study reinforces the notion that language abilities are inherently linked. It underscores the importance of leveraging existing language competencies to facilitate the learning of new languages. As language education continues to adapt to a globalized context, this study highlights the critical importance of recognizing, valuing, and utilizing the correlations between L2 and L3 skills. Doing so will contribute to the development of more effective language instruction, ultimately achieving broader educational objectives.

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Appendices

Appendix A: The English Reading Comprehension Test

FULL NAME:…………………………………

Please read the text and answer all the questions

My name is Amina. I am twenty years old and I live in Paris. I like my city very much because it is big, beautiful and modern. Many tourists visit our city every year because it is very famous in the world. I am a university student. I study economics because my ambition is to be a businesswoman in the future. I speak French and English fluently. My classmates are from different countries like China, Japan, Morocco, Italy and Canada. I work on weekends in a restaurant because studies are expensive. I like this job because it gives me a good experience.

    I live with my parents in a beautiful house. I have one brother. His name is Robert. He is married and has got two kids. They are so cute and intelligent. My brother often helps me with my homework because he is an engineer in a big company.

In my free time, I usually surf the internet and chat with my friends. I also like to play computer games. I sometimes help my mother in the kitchen. I have three meals every day. For breakfast, I often have a glass of orange juice with some bread and cheese. I always have my lunch at university. For dinner, I like to eat spaghetti and meatballs.

                       Rachid Amri, Middle school tests

COMPREHENSIONS QUESTIONS: Base your answers on the text

A.   Provide a title to the text:
…………………………………………………………………

B. Choose the best alternative
1. big: afflicted with, used to, heir, liable, gigantic
2. beautiful: funny, crazy, hungry, awesome
3. Modern: old-fashioned, repaired, revised, trendy
C. find the words in the text that have the same meaning as:
1. Well-known (Paragraph 1):…………………………………………………………
2. Smart (Paragraph 2):………………………………………………
3. Spare (Paragraph 3):…………………………………………

C-ARE THE FOLLOWING STATEMENTS TRUE OR FALSE JUSTIFY FROM THE TEXT :
1. A lot of tourists visit Paris.
………………………………………………………………………………………………
2. Amina works on Saturday and Sunday. .
…………………………………………………………………………
3. Amina's brother does not have children. . .
…………………………………………………………………………

D- ANSWER THE FOLLOWING QUESTIONS FROM THE TEXT :
1. What is the nationality of
Amina?…………………………………………………………………………………………
2. Why do many tourists visit
Paris?…………………………………………………………………………………………..
3. Why does she work in a
restaurant?…………………………………………………………………………………………

4. Where does she eat lunch?..

E.Paraphrase the following sentences:
1. Many tourists visit our city every year because it is very famous in the world.
....
....
2.My brother often helps me with my homework because he is an engineer in a big company.
....
....

F.In no more than 60 words, summarize the last paragraph of the text.
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G. Provide an outline of the three paragraphs.
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Appendix B: The French Reading Comprehension Test

NOM ET PRENOM:....................................

Lisez le passage et repondez aux questions:
Je m'appelle Ali. J'ai vingt ans et j'habite à Fès. J'adore ma ville car elle est riche en histoire et en culture. De nombreux touristes la visitent chaque année, car elle est une destination populaire pour les amateurs de voyages authentiques. Je suis étudiant à l'université. Je fais des études d'économie parce que mon ambition est de devenir homme d'affaires plus tard. Je parle couramment arabe et français. Mes camarades de classe viennent de différents pays : Maroc, Tunisie, Algérie, France et Espagne. Je travaille le week-end dans un café car les études coûtent cher. J'aime ce travail car il me permet de rencontrer des gens de tous horizons.
J'habite avec mes parents dans une belle maison traditionnelle marocaine. J'ai une sœur. Elle s'appelle Nadia. Elle est médecin et travaille dans un hôpital à Casablanca. Elle est très gentille et attentionnée. Ma sœur m'aide souvent avec mes devoirs et me

donne de bons conseils.Pendant mon temps libre, j'aime regarder des matchs de football et jouer aux jeux vidéo. Je suis un grand fan de l'équipe nationale marocaine de football et je ne manque jamais un match. J'aime aussi jouer à des jeux de simulation de football sur mon ordinateur. Je suis également membre d'un club de jeux vidéo et je participe souvent à des tournois.

Je prends trois repas par jour. Au petit-déjeuner, je mange généralement du thé à la menthe et des msemen (crêpes marocaines). Je déjeune toujours à l'université. Pour le dîner, j'aime manger du couscous ou du tajine.J'aime beaucoup ma vie à Fès. C'est une ville dynamique et cosmopolite où il y a toujours quelque chose à faire. J'apprécie également la culture et les traditions marocaines. Je suis fier d'être marocain et je suis heureux de vivre dans ce beau pays.

Omar Amri, Annales du collège

A. Donnez un titre convenant au texte
……………………………………………………………………………..

B. Répondez par vrai ou faux. Justifier votre réponse.
1. Ali parle couramment arabe et français.
…………………………………………………………………………….
2. Ali travaille dans un restaurant le week-end.
……………………………………………………………………………
3. Ali a un frère jumeau.
……
…………
4. Ali aime regarder le football et jouer à des jeux vidéo.
…………………………………………………………………
5. Ali déjeune toujours à la maison.
……………………………………………………………………………

C. A partir du texte retrouvez les mots avec le meme sens des mots suivantes :
1. fameux : ……………………
2. Agréable :………………..
3. Actif :…………………
4. Admirer :…………………

D. utilisez vos propres mots et répondez aux questions suivantes:
1.Selon le texte, pourquoi Ali travaille-t-il le week-end?
……
……
………………………………………………………………………………………
2. Quels indices nous donnent à penser qu'Ali est fier de sa culture et de son pays?
……
……
………………………………………………………………………………………
3.Le texte mentionne plusieurs activités qu'Ali pratique pendant son temps libre. Laquelle d'entre elles suggère qu'il a un intérêt pour la technologie ?
……
……
…………………………………………………………………………………

4.Le texte mentionne le football à plusieurs reprises. Est-ce que cela suggère qu'Ali joue également au football dans la vraie vie, ou est-ce uniquement un intérêt passif?

………
………
……………………………………………………………………………………………

E. Reformulez les phrases suivantes :

1. Ma sœur m'aide souvent avec mes devoirs et me donne de bons conseils.

………
……………
………
……………

2.   Pendant mon temps libre, j'aime regarder des matchs de football et jouer aux jeux vidéo.

………
…………
………
…………

F. Donnez un résumé au deux premiers paragraphes (ne dépassez pas 60 mots).

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G. Donnez un plan au texte.

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