

English Reading Skills and their Influence on German Reading Proficiency: A Case Study of Moroccan Middle School Students

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Abstract:- This study investigated the relationship between English and German reading comprehension among Moroccan middle school students. The primary objective was to examine whether proficiency in one language influenced performance in the other. A correlational design was employed, with data collected from 92 students at Ibn Rochd Middle School in Sidi Kacem. Participants completed standardized reading tests in both languages, assessing a range of comprehension skills. Correlation and regression analyses were conducted to explore the relationship between the two variables. Results indicated a lack of significant correlation between English and German reading scores, suggesting that shared alphabetic features do not necessarily translate into direct transferability of reading skills. These findings challenge the notion of automatic language transfer and emphasize the complex nature of bilingual reading development. The study highlights the need for further research to investigate factors influencing language transfer in the Moroccan context, such as instructional practices, curriculum design, and individual differences. Implications for teachers, syllabus designers, and educational stakeholders are discussed.

Keywords:- English Reading, German Reading, Bilingualism, Language Transfer, Moroccan Students, Correlational Study.

I. INTRODUCTION

The acquisition of multiple languages has become an increasingly significant aspect of contemporary society. As globalization continues to shape educational landscapes worldwide, the importance of multilingualism is undeniable (Graddol, 2006). Research has consistently highlighted the cognitive benefits associated with bilingualism, including enhanced problem-solving, critical thinking, and improved academic performance (Bialystok, 2017).

While the advantages of bilingualism are well-established, the intricate relationship between different languages, particularly in terms of reading skills, remains a subject of ongoing exploration. Reading proficiency is a fundamental skill that underpins academic success and contributes to overall cognitive development (OECD, 2019). Consequently, understanding the factors influencing reading

competence in multiple languages is crucial for effective language pedagogy.

Despite the growing body of research on bilingualism and reading, studies specifically examining the correlation between English and German reading skills among Moroccan students are relatively scarce. This research gap underscores the need for further investigation into the language transfer processes that occur when learners acquire multiple alphabetic languages. The present study aims to address this gap by examining the relationship between English and German reading competencies among 9th-grade Moroccan middle school students enrolled at Ibn Rochd School in Sidi Kacem.

By investigating the correlation between English and German reading skills, this study seeks to determine the extent to which English reading skills predict German reading proficiency among 9th-grade Moroccan students and to identify specific English reading skills that are more strongly associated with German reading competence. The findings of this research have the potential to inform language teaching practices and curriculum development in Moroccan schools, as well as contribute to the broader understanding of language transfer and bilingualism.

This paper will present the results of a correlational study conducted among 9th-grade students at Ibn Rochd School. The methodology employed, including participant selection, data collection instruments, and data analysis procedures, will be detailed. The findings of the study, including the correlation between English and German reading skills, will be presented and discussed in relation to existing research. Finally, the implications of the findings for language education and directions for future research will be explored.

II. LITERATURE REVIEW

➤ Introduction

The acquisition of multiple languages has become an increasingly prevalent phenomenon in today's interconnected world. Research consistently demonstrates that bilingualism offers cognitive advantages, enhancing problem-solving, critical thinking, and overall cognitive flexibility. While the cognitive benefits of bilingualism are well-established, the intricate relationship between language acquisition and

specific skills, such as reading, remains an area of ongoing investigation.

Reading is a foundational skill that underpins academic success and contributes significantly to cognitive development. To fully understand the complexities of bilingual reading, it is essential to explore the interplay between different languages. This literature review focuses on investigating the relationship between English and German reading skills, aiming to provide a comprehensive overview of existing research on this topic. By examining the available literature, this review seeks to establish a solid foundation for understanding the potential transferability of reading skills between these two languages and to identify knowledge gaps that warrant further exploration.

➤ *Theoretical Framework*

Jim Cummins, a leading figure in bilingual education, proposed the Interdependence Hypothesis to explain the relationship between first language (L1) and second language (L2) development (Cummins, 1981). This hypothesis

suggests that L1 and L2 abilities are interconnected and mutually supportive. In other words, Cummins argues that the development of cognitive and linguistic abilities in one language positively influences the development of these same abilities in the other language. This interdependence is particularly evident in academic language proficiency, which encompasses skills like critical thinking, problem-solving, and analysis (The Interdependence Hypothesis, EdTech Books, edtechbooks.org).

Applying the Interdependence Hypothesis to the context of English and German language learning in Morocco offers valuable insights. Given the shared alphabetic system and some linguistic similarities between the two languages, it's plausible to suggest that strong proficiency in English can positively influence German language acquisition. However, the specific nature of these language relationships requires further investigation. While shared cognates and grammatical structures might facilitate transfer, differences in pronunciation, vocabulary, and sentence structure could also pose challenges.

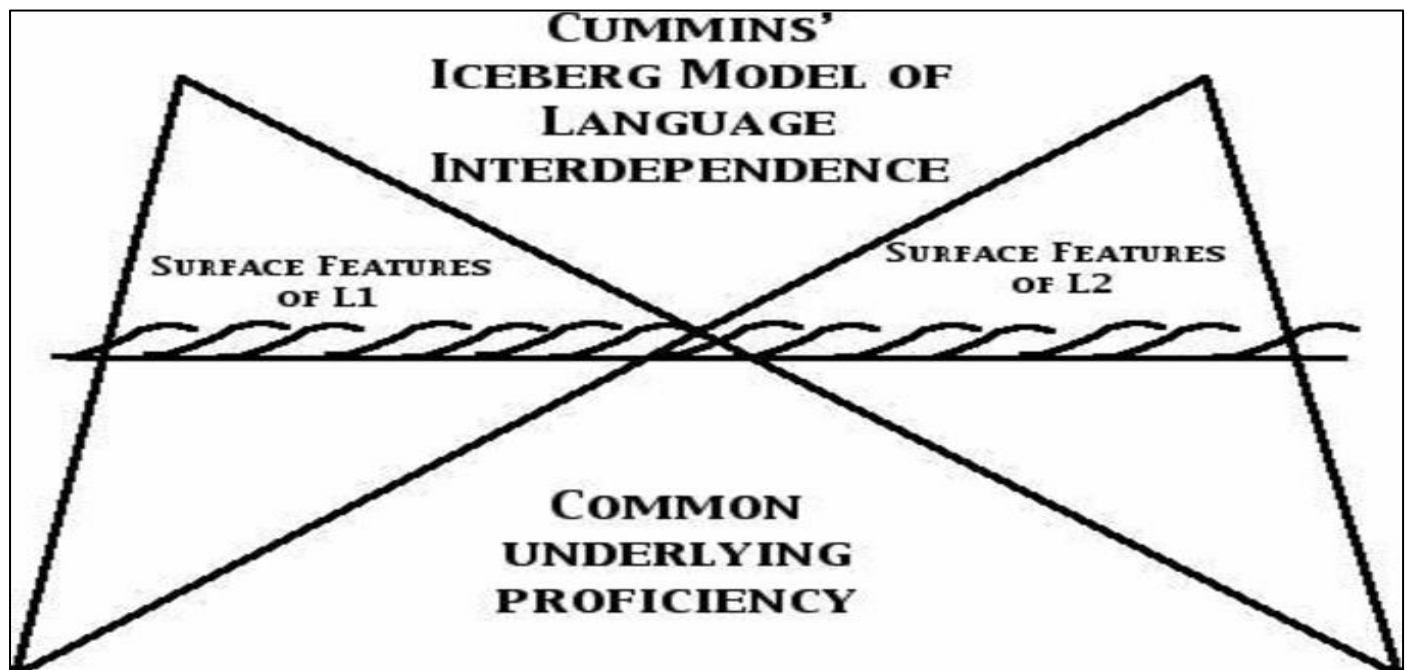


Fig 1 The Interdependence Model (Cummins, 1979, 1981)

The Common Underlying Proficiency (CUP), a key concept within the Interdependence Hypothesis, suggests there's a shared pool of cognitive and linguistic resources that underlie proficiency in both languages. As L1 proficiency develops, it strengthens the CUP, which in turn benefits L2 development (The Interdependence Hypothesis, EdTech Books, edtechbooks.org). This notion has important implications for bilingual education in Morocco, as it emphasizes the importance of maintaining and developing Arabic skills (the L1 for most Moroccan students) while fostering English and German acquisition.

Cummins' work, such as his Interdependence Hypothesis, has significantly influenced bilingual education policies and practices (The Role of Primary Language

Development in Promoting Educational Success for Language Minority Students, ResearchGate, www.researchgate.net). The Interdependence Hypothesis provides a valuable framework for understanding the complex relationship between L1 and L2 development and highlights the importance of supporting all languages involved to maximize students' academic potential in Morocco.

➤ *Bilingualism and Cognitive Development*

The intricate relationship between bilingualism and cognitive development has been a subject of extensive research. Theories such as the critical period hypothesis and the sensitive period hypothesis have explored the optimal age for language acquisition and its impact on cognitive

development. Additionally, the competition model and the interdependence hypothesis offer perspectives on how multiple languages interact within the mind.

A substantial body of research has consistently linked bilingualism to cognitive advantages. Bilingual individuals often exhibit enhanced executive functions, including problem-solving, critical thinking, and attention control. The constant mental juggling of two languages is believed to strengthen these cognitive abilities. For instance, studies have shown that bilingual children outperform monolingual peers on tasks requiring inhibitory control, such as the Stroop test (Bialystok, 2006).

Furthermore, bilingualism has been associated with improved academic performance. Several studies have reported that bilingual students demonstrate higher scores in standardized tests, particularly in subjects requiring analytical and reasoning skills. The ability to switch between languages and manage linguistic demands is thought to contribute to these academic advantages. However, it is essential to note that the relationship between bilingualism and academic achievement is complex and influenced by various factors, including socioeconomic status, educational resources, and language proficiency.

Recent studies have continued to support the cognitive benefits of bilingualism. For example, Kohnert et al. (2016) found that bilingual adults showed enhanced executive function compared to monolingual controls. Additionally, García-Pentón et al. (2018) demonstrated that bilingual children exhibited superior metalinguistic awareness, suggesting that the experience of managing multiple languages contributes to a deeper understanding of language structure.

➤ *Reading Acquisition and Development*

Reading is a complex process that involves multiple cognitive and linguistic skills. The ability to decode written language and comprehend its meaning is influenced by a variety of factors. At the core of reading is phonological awareness, the ability to manipulate the sounds of language. This skill is crucial for learning to read and spell (Moats, 2000). Vocabulary development is another essential component, as readers must understand the meanings of words to comprehend text (Beck, McKeown, & Kucan, 2013). Finally, reading comprehension involves constructing meaning from text by integrating information from the text with prior knowledge (National Reading Panel, 2000).

Several factors influence reading development. Socioeconomic status has been consistently linked to reading achievement, with children from low-income backgrounds often facing challenges in acquiring literacy skills (Sirin, 2005). Instructional quality is another critical factor, with effective teaching practices promoting reading success (Snow, Burns, & Griffin, 1998). Additionally, individual differences in cognitive abilities, motivation, and language experience contribute to reading development (Stanovich, 1986).

Reading difficulties, such as dyslexia, can significantly impact a reader's ability to learn and succeed.¹ Research has identified various interventions that can help struggling readers, including phonics instruction, explicit comprehension strategies, and fluency practice (Torgesen, Wagner, & Rashotte, 1994).

It is important to note that reading is a dynamic process that continues to develop throughout life. As readers encounter new texts and experiences, their reading skills and strategies become more sophisticated (Chall, 1983).

➤ *Bilingualism and Reading*

The relationship between first and second language reading skills is a complex one. Research suggests that strong proficiency in the first language often serves as a foundation for developing reading skills in a second language (Collier, 1989). This concept, known as language transfer, implies that skills acquired in one language can be applied to another. However, the extent to which this transfer occurs varies depending on factors such as language similarity, age of acquisition, and instructional methods. Studies by Goldenberg and Truelove (2001) have demonstrated that bilingual children who are proficient readers in their first language tend to develop stronger reading skills in their second language compared to their monolingual peers.

While language transfer can be beneficial, it is essential to consider the specific characteristics of each language. Differences in orthography, phonology, and syntax can influence the transferability of reading skills. For instance, research by Koda (1987) has shown that while some reading skills, such as vocabulary knowledge, may transfer relatively easily between languages, other skills, such as phonological awareness, might require more explicit instruction in the second language.

Reading comprehension in bilingual contexts is influenced by various factors, including language proficiency, code-switching, and cultural background. Studies by Baker (2006) have highlighted the importance of developing literacy in both languages to enhance overall comprehension. Bilingual readers often possess the ability to draw on knowledge from both languages to construct meaning, a process known as cross-lingual transfer. However, challenges such as language interference and code-switching can also impact reading comprehension.

➤ *English and German as third Languages*

Morocco, a culturally and linguistically diverse nation, has witnessed a growing emphasis on foreign language education in recent decades. English has solidified its position as the primary foreign language taught in Moroccan schools, driven by its global dominance in business, technology, and academia. Research by El Kadiri (2015) has highlighted the increasing importance of English language proficiency for Moroccan students' future opportunities. However, challenges such as teacher training, curriculum development, and assessment remain obstacles to achieving optimal English language outcomes.

While English reigns supreme, German has emerged as a language of growing interest in Morocco. The expanding economic ties between Morocco and Germany have contributed to the increased demand for German language skills. However, the teaching and learning of German in Morocco is still in its nascent stages compared to English. Limited research is available on the specific challenges and opportunities associated with German language education in the Moroccan context.

It is essential to acknowledge that the Moroccan educational landscape is dynamic, and language policies are subject to change. As the country continues to evolve, the status of English and German as foreign languages may also undergo transformations. Further research is needed to explore the factors influencing language choice, learner motivation, and the effectiveness of language teaching methodologies in the Moroccan context.

➤ *Research Gap and Study Significance*

A comprehensive review of the literature reveals a dearth of research specifically examining the relationship between English and German reading skills among Moroccan students. While studies have explored bilingualism and reading in various contexts, investigations focusing on the interplay of these two languages in the Moroccan educational landscape are notably absent. This gap in knowledge limits our understanding of the factors influencing reading development in this specific bilingual context.

Addressing this research gap is crucial for several reasons. First, it contributes to the growing body of literature on bilingualism and reading, providing valuable insights into language transfer and development. Second, the findings of this study can inform language teaching and learning practices in Moroccan schools, enabling educators to develop more effective strategies for teaching reading in both English and German. Finally, by exploring the relationship between English and German reading skills, this research contributes to a better understanding of the complexities of multilingualism in educational settings.

III. METHODOLOGY

➤ *Research Design*

A correlational research design was employed for this study to investigate the relationship between English and German reading competencies among Moroccan middle school students. This design allowed for the examination of the extent to which variations in English reading skills correspond to variations in German reading skills without manipulating any variables. By utilizing this approach, the study aimed to identify potential patterns or associations between the two language domains.

➤ *Population and Sampling*

The population for this study comprised Moroccan middle school students. Given the constraints of time and resources, a convenience sampling technique was employed to select participants. The sample consisted of 92 students from Ibn Rochd Middle School in Sidi Kacem, a public

institution. The sample was predominantly female, with 65% of participants identifying as female and 35% as male. While English language instruction commenced in the first year of middle school, German language education began in the final year.

➤ *Data Collection Instruments*

To assess participants' reading proficiencies in English and German, standardized reading comprehension tests were administered. These instruments were adapted from a pool of teacher-developed assessment tools designed to measure reading ability in both French and English. The tests evaluated a range of reading skills, including literal comprehension (e.g., true/false questions, direct questions), inferential comprehension (e.g., title generation), and vocabulary knowledge (e.g., synonyms, antonyms, word reference). To ensure comparability and rigor in data analysis, the tests were structured identically, employing consistent item formats, scoring rubrics, and weighting schemes for both languages.

➤ *Piloting*

Prior to full-scale administration, the research instruments underwent a pilot testing phase involving a sample of 10 students. This process aimed to assess the reliability and validity of the reading proficiency tests. A Cronbach's alpha coefficient of .72 was obtained, indicating a satisfactory level of internal consistency for the measurement scales.

➤ *Data Analysis Procedures*

Data analysis was conducted using SPSS version 21. Descriptive statistics were employed to characterize the sample and variables. To explore the relationship between English and German reading scores, scatterplots were generated. Correlation analysis was performed to quantify the strength and direction of the association between the two variables. Regression analysis was utilized to examine the predictive power of English reading skills on German reading performance. Finally, ANOVA was conducted to compare mean reading scores.

IV. RESULTS

➤ *Descriptive Statistics*

This section aims to investigate the relationship between students' English and German reading comprehension performance. Specifically, it will address the research question of whether a correlation exists between these two variables. The corresponding directional hypothesis posits a positive association between English and German reading proficiency.

• *The Null Hypothesis for this Analysis is:*

NH: there is no relationship between students' English reading comprehension performance and their German reading comprehension skills.

This section focuses on examining the relationship between English and German reading comprehension scores. To quantify this relationship, Pearson's correlation coefficient

will be computed. Additionally, regression analysis will be performed to determine the predictive power of English reading comprehension on German reading comprehension. Before proceeding with these analyses, the data will be visually inspected using a scatterplot to assess the linearity

and homoscedasticity of the relationship. The null hypothesis, stating no correlation between the two variables, will be tested against the alternative hypothesis of a positive correlation.

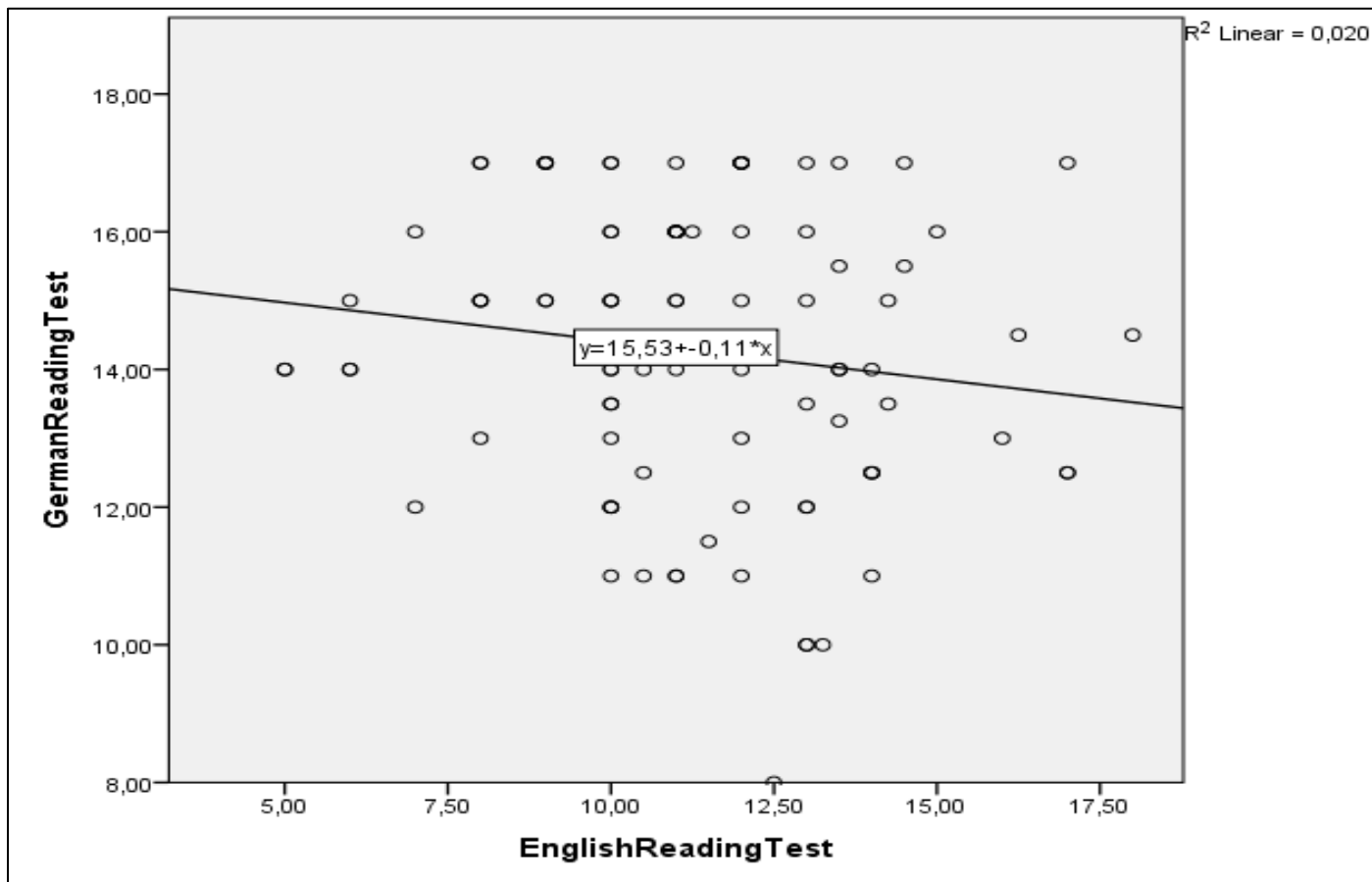


Fig 2 Scatterplot of the EGT and GRT

Based on the provided R-squared value of 0.020 and the regression equation $y = 15.53 - 0.11 * x$, the scatterplot is anticipated to depict a weak, linear relationship between English and German reading scores. The low R-squared value indicates that a minimal proportion of the variance in German reading scores can be explained by variations in English

reading scores. Consequently, the data points are likely dispersed randomly with little discernible pattern. The regression line, represented by the equation, would exhibit a slight negative slope, but its predictive capacity is limited due to the overall weak association between the variables.

Table 1 The Correlation between the EGT and GRT

Correlations			
		EnglishReadingTest	GermanReadingTest
EnglishReadingTest	Pearson Correlation	1	-,142
	Sig. (2-tailed)		,176
	N	92	92
GermanReadingTest	Pearson Correlation	-,142	1
	Sig. (2-tailed)	,176	
	N	92	92

The correlation analysis revealed a weak, negative correlation ($r = -.142, p = .176$) between English and German reading test scores. This finding indicates that there is no significant relationship between students' performance in English and German reading comprehension. The results

suggest that higher English reading scores are not associated with higher or lower German reading scores among the sample population. These findings contradict the initial hypothesis of a positive correlation between the two variables.

Table 2 Model Summary of the EGT and GRT

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,142 ^a	,020	,009	2,09880	1,892
a. Predictors: (Constant), EnglishReadingTest					
b. Dependent Variable: GermanReadingTest					

The model summary indicates a weak relationship between English reading test scores and German reading test scores. The R-squared value of .020 suggests that only 2% of the variance in German reading scores can be explained by variations in English reading scores. The adjusted R-squared value, which accounts for the number of predictors in the model, is .009, further emphasizing the limited explanatory

power of the model. The Durbin-Watson statistic of 1.892 falls within the acceptable range of 1 to 3, suggesting no significant autocorrelation in the residuals. Overall, the model has limited predictive ability, and English reading scores are not a strong predictor of German reading scores in this sample.

Table 3 ANOVA for the EGT and GRT Scores

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8,209	1	8,209	1,864	,176 ^b
	Residual	396,445	90	4,405		
	Total	404,654	91			
a. Dependent Variable: GermanReadingTest						
b. Predictors: (Constant), EnglishReadingTest						

The ANOVA results indicate that the regression model is not statistically significant. The F-statistic of 1.864 with a p-value of .176 suggests that there is no significant difference between the model with the predictor (English reading test)

and a model with only the intercept (mean of the dependent variable). This finding reinforces the conclusion drawn from the correlation analysis that English reading scores do not significantly predict German reading scores.

Table 4 Coefficients of the EGT and GRT Scores

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15,528	,948		16,382	,000
	EnglishReadingTest	-,111	,082	-,142	-1,365	,176
a. Dependent Variable: GermanReadingTest						

The coefficients table provides further insights into the relationship between English and German reading scores. The intercept of 15.528 represents the predicted German reading score when English reading score is zero, which is not meaningful in this context. The coefficient for English reading test is -.111, indicating that for each one-point

increase in English reading score, German reading score is predicted to decrease by .111 points. However, this relationship is not statistically significant (p = .176), as confirmed by the t-test and the previously reported correlation and ANOVA results.

Table 5 Residual Statistics of the EGT and GRT

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	13,5238	14,9713	14,2690	,30034	92
Residual	-6,13620	3,36485	,00000	2,08723	92
Std. Predicted Value	-2,481	2,338	,000	1,000	92
Std. Residual	-2,924	1,603	,000	,994	92
a. Dependent Variable: GermanReadingTest					

The residuals statistics provide information on the distribution of the errors between the predicted and actual German reading test scores. The mean residual is close to zero, indicating that the model's predictions are centered around the actual values. The standard deviation of the residuals is relatively small (2.08723), suggesting that the model's predictions are reasonably close to the observed

values. The minimum and maximum residuals provide insights into the range of prediction errors, with some cases showing larger deviations from the predicted values than others. Overall, these statistics offer a preliminary assessment of the model's fit, but further diagnostic checks, such as residual plots, would be necessary to evaluate the model's

assumptions and identify potential outliers or patterns in the residuals.

V. DISCUSSION

The findings of this study indicate a lack of significant correlation between English and German reading comprehension among the sampled Moroccan middle school students. This result is contrary to expectations given the potential for language transfer between related languages (Cummins, 1981). However, it aligns with studies emphasizing the complex nature of language acquisition and the influence of various factors beyond shared linguistic features (Koda, 1987).

Several explanations could account for these findings. Firstly, the relatively short exposure to German language instruction might have limited students' opportunities to develop proficient reading skills. According to Siegel and Faux (1989), prolonged and consistent exposure is critical for developing phonological recoding skills essential for reading fluency. Therefore, the limited time spent learning German might have hindered students' ability to transfer their English reading skills effectively.

Secondly, the specific teaching methodologies and curriculum implementation for both languages could have influenced the outcomes. Research by Cuetos (1989) and Doctor and Coltheart (1980) suggests that instructional approaches that emphasize phonological awareness and decoding strategies can significantly impact reading development. If the methodologies used in teaching English and German were not aligned, this misalignment could explain the lack of transfer between the two languages.

Additionally, individual differences in language aptitude, motivation, and cognitive abilities might have masked potential transfer effects. Studies by Jorm et al. (1984) and Byrne et al. (1992) highlight the significant role of individual differences in reading development and suggest that factors such as phonemic awareness and cognitive processing speed can influence language acquisition outcomes.

It is essential to acknowledge the limitations of this study. The convenience sampling technique may not represent the entire population of Moroccan middle school students, potentially limiting the generalizability of the findings. Furthermore, the focus on reading comprehension without considering other language skills, such as vocabulary and grammar, limits the scope of the findings. According to Perfetti (1994), a comprehensive assessment of language skills is necessary to understand fully the interplay between different aspects of reading development.

Future research should explore the relationship between English and German reading skills in a longitudinal design to examine the impact of increased exposure to German. Longitudinal studies by Share (1995) and Sprenger-Charolles and Casalis (1995) have shown that extended exposure and consistent practice can enhance reading proficiency and

facilitate language transfer. Additionally, investigating the role of language teaching methodologies and curriculum alignment could provide valuable insights into factors influencing language transfer. Studies by Gough and Walsh (1991) and Wimmer and Goswami (1994) suggest that a structured and systematic approach to teaching reading can significantly impact learning outcomes.

By addressing these limitations and expanding the scope of inquiry, future studies can contribute to a deeper understanding of the complexities of bilingual reading development. A more comprehensive approach that includes various language skills and considers individual differences will help to uncover the intricate dynamics of language transfer and inform effective instructional practices.

VI. CONCLUSION

The primary objective of this study was to examine the relationship between English and German reading comprehension among Moroccan middle school students. The findings of the correlational analysis revealed a lack of significant association between the two language skills. This unexpected result challenges the notion of direct transferability of reading competencies between related languages as proposed by theorists like Cummins (1981). The results align with Koda's (1987) assertion that language acquisition is influenced by a myriad of factors beyond mere linguistic similarities.

Several factors may contribute to these findings. Limited exposure to German likely played a significant role, as suggested by Siegel and Faux (1989), who emphasized the importance of extensive practice for developing phonological skills. Furthermore, the distinct teaching methodologies employed for each language could have impacted the outcomes. Research by Cuetos (1989) and Doctor and Coltheart (1980) underscores the critical role of instructional strategies in shaping reading development. Additionally, individual differences in language aptitude, motivation, and cognitive abilities could have obscured potential transfer effects, as highlighted by Jorm et al. (1984) and Byrne et al. (1992).

While this study provides valuable insights into the complexities of bilingual reading in the Moroccan context, it is essential to acknowledge its limitations. The convenience sampling and cross-sectional design restrict the generalizability of the results. Moreover, focusing solely on reading comprehension without considering other language components, such as vocabulary and grammar, might have obscured potential transfer effects. Perfetti (1994) emphasizes the need for a comprehensive assessment of language skills to fully understand reading development dynamics.

To advance understanding of bilingual reading development among Moroccan students, future research should adopt longitudinal designs to track changes in reading proficiency over time. Longitudinal studies by Share (1995) and Sprenger-Charolles and Casalis (1995) indicate that

extended exposure and consistent practice enhance reading proficiency and facilitate language transfer. Additionally, investigating the impact of instructional practices and curriculum alignment on language transfer is crucial. Studies by Gough and Walsh (1991) and Wimmer and Goswami (1994) highlight the significance of structured and systematic teaching approaches in improving learning outcomes.

By addressing these research gaps, future studies can provide a more comprehensive and nuanced picture of the factors influencing bilingual reading outcomes, contributing to a deeper understanding of the complexities involved in bilingual education and informing effective instructional practices.

IMPLICATIONS

➤ Implications for Teachers

The findings of this study suggest that teachers should foster a strong foundation in the first language while introducing the second language. A balanced approach, emphasizing both languages, is essential. While explicit instruction on language transfer might be beneficial, teachers should be mindful of the potential limitations and individual differences among students. Continuous assessment and adaptation of teaching strategies based on students' needs are crucial for effective bilingual education.

➤ Implications for Syllabus Designers

Syllabus designers should consider the complex nature of language transfer when developing curricula. While incorporating cross-lingual activities can be beneficial, it is equally important to provide ample opportunities for independent language development. A curriculum that balances explicit instruction with opportunities for authentic language use is likely to be more effective. Additionally, ongoing evaluation and revision of syllabi are necessary to ensure alignment with emerging research and student needs.

➤ Implications for Educational Stakeholders

Educational stakeholders, including policymakers and administrators, should recognize that the development of bilingual proficiency is a gradual process that requires sustained support. Investing in teacher training and professional development is crucial for effective language instruction. Furthermore, providing adequate resources and infrastructure for language learning is essential. By prioritizing bilingual education and conducting ongoing research and evaluation, educational stakeholders can contribute to the development of effective language programs that meet the needs of Moroccan students.

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