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The Impact of the Way Bilinguals Acquire Their Second Language on Their Language Comprehension and Lexical Access

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Abstract

The present study aims to look at how bilinguals' lexical access and language understanding varies depending on how they acquired their second language. When considering second-language acquisition, the contrast between formal and informal learning environments is critical. According to Lightbown and Spada (2001), informal settings are those where an adult learner is exposed to the target language at home, at work, or via social contact, while formal settings are those where the target language is taught to a group of second or foreign language learners. The present study found that bilinguals who learned their second language formally performed better than bilinguals who learned their second language informally.

Keywords: Lexical Access- Language Comprehension- Linguistics Stimuli- Mode of Acquisition.

Introduction

One of the key elements that is considered or known to impact bilingual language performance is the method of acquisition, often known as the manner of acquisition. In his landmark work *Informal Adult Education*, Knowles (1950) originated and popularized the phrase "informal language learning" in relation to formal language acquisition. Later, Coombs and Ahmed (1974) characterized informal learning as a lifelong process in which individuals acquire knowledge, skills, attitudes, and ideas by exposure to the environment at home or at work, such as reading newspapers and books, listening to the radio, or watching movies or television. According to Coombs and Ahmed, informal education is disorganized, unsystematic, and usually accidental.

When considering second-language acquisition, the contrast between formal and informal learning environments is critical. According to Lightbown and Spada (2001), informal settings are those where an adult learner is exposed to the target language at home, at work, or via social contact, while formal settings are those where the target language is taught to a group of second or foreign language learners. In a formal language learning situation, the focus of teaching is on the language itself. The focus in a informal language learning situation, on the other hand, is on meaning. In an informal language learning situation, language learners chat with native speakers in the target language country, use different technologies at home or at work, watch a movie, or listen to music or a song just for entertainment, all of which may help with language acquisition. In other words, when language learners watch a movie or

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listen to a song in a relaxing environment and try to decipher it with the help of a dictionary or subtitles, they are unwittingly contributing to the language acquisition process (Pemberton, Fallahkhaier & Mosthoff, 2004 & AlShraah et al. 2023). According to Marsick and Watkins (1990), structured instruction takes place in a classroom and is meticulously planned and executed.

There is a contrast between representations of the (lexical) word and semantic representations of language processing in lexical semantics models. Because readers can quickly and readily deduce meaning from written language, these models often provide simple interfaces between native word types and their key concepts. Language learning strategies have yet to be studied in terms of how they could change the order of lexical models in theory, according to psycholinguistic research. On the other hand, current lexical organization theories imply a high amount of inter-language cross-activation. Even in a single language, all bilingual languages are engaged, according to Kroll et al. (2012). According to these theories, just having a bilingual system will increase language learning flexibility. As a consequence, the literature has a plethora of lexical organization hypotheses for multilingual memory. All of these theories presuppose that there are many versions of the mental lexicon. Each will have its own language and vocabulary, according to the semantic inventory and other models.

As young as three years old, bilinguals may understand higher taxonomic linkages (e.g., animal grouping) (Waxman & Gelman, 1986). Youth prefer lexical components based on personal experiences (for example, animals reside in a child's home) to better genre understanding (Nelson, 1988). The ability of children to keep connected lexical elements utilizing higher taxonomic categories (e.g., species, food, and clothes) increases with time (Nelson & Nelson, 1990). Preschoolers remember more information in event-related domains than those in higher taxonomic groups. Children under the age of eight, on the other hand, recognize the same number of things in both scenarios (Nelson & Nelson, 1990). Changes in lexical-semantic organization may be linked to shifts in oral and written understanding (Cronin, 1999). A taxonomy lexical-semantic structure system may also indicate mature lexical-semantic patterns when contrasted to event-related entities.

Methodology

Participants

By assessing the study's formal and informal participants' reaction time, the present study examines how the manners and techniques of learning a language impact linguistic output and organization. Based on their language learning mode, participants were divided into formal and informal bilingual groups. There were 29 formal and 21 informal bilinguals in the group.

Procedures

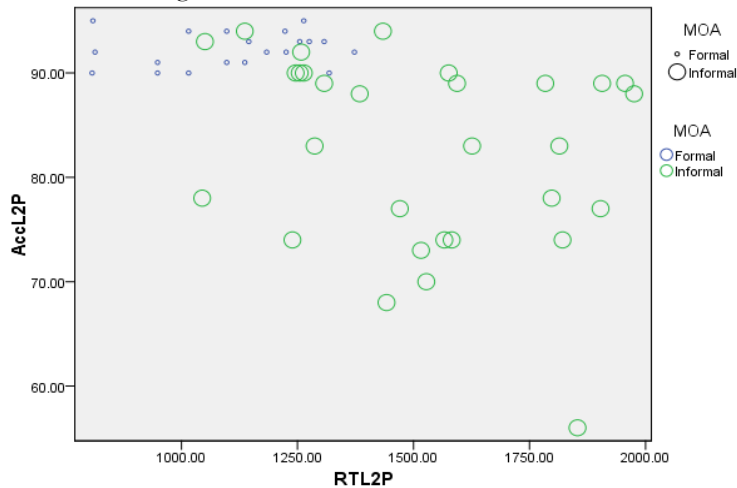
The visual cue will be shown on the screen throughout the test, and the respondent will be asked to identify or translate the word using headphones. When evaluating the written form, the time allotted must be taken into account. The DMDX program imports each segment's hundred images and displays them at random. This procedure was used twice in the translation and once in the picture naming, each time in the same style and with the same structure. Each participant was given two different experimental sequences in each study: one with L1 to L2 word stimuli and the other with L2 to L1 word stimuli.

Results and Discussion

An analysis of variance was conducted on the reaction time and accuracy scores. A t-test was used to examine the tempo of lexical activation in the formal and informal bilinguals groups on the picture naming task. The response time for formal bilinguals was 1113.0283, MSE = 39.62520, whereas the reaction time for informal bilinguals was 1520.5910, MSE = 50.74154. A substantial difference in reaction time was found between

formal and informal bilinguals ($t(2, 48) = -5.808$, $MSE = 70.17651$, $p = .001.05$). The formal bilinguals were faster and had a higher accuracy rate than the informal bilinguals, as can be shown. The formal bilinguals had a 92.25 percent correct response rate. $MSE = .36903$, with an accuracy rate of 82.53 percent among informal bilinguals. 1.69904 is the MSE. This indicates a substantial difference in accuracy between formal and informal bilinguals ($t(2, 48) = 4.606$, $MSE = 2.109509$, $P = .001.05$). In terms of reaction time and accuracy, Figure 1. illustrates the outcomes of the formal and informal groups of participants on the picture naming task.

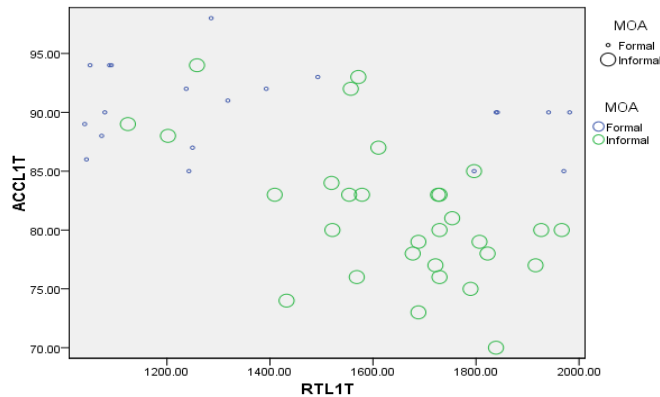
Figure 1: Distribution of Reaction Time and Accuracy of Both Formal and Informal Bilinguals on the Picture Naming Task.



The findings of the previous investigation show that a bilingual's approach to learning a second language influences the pace of lexical activation, which helps us understand lexical-semantic structure and how meanings are processed in the bilingual's brain. In terms of response time and accuracy, the formal participants outperformed the informal ones. Formal bilinguals are highly proficient bilinguals who can handle and organize language more quickly and accurately than informal bilinguals who are unable to function in the formal group. This finding does not indicate that all informal bilinguals are ineffective since some informal bilinguals outperformed formal bilinguals. As a result, we may assume that how a bilingual learns a language influences his or her competence, which in turn influences how the bilingual organizes and processes the language. Formal bilinguals outperformed informal bilinguals in the picture naming test, resulting in a statistically significant difference.

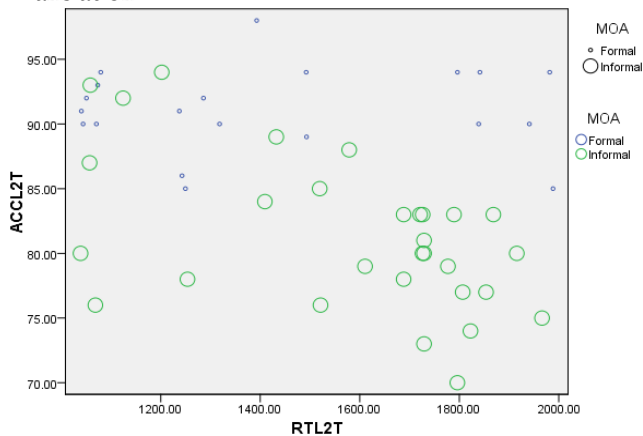
Another technique to compare the results of formal and informal participants is to look at the forward translation response time and accuracy of all groups. In the forward translation task, the formal and informal bilingual groups' lexical activation speed was assessed using a t-test. The response time of professional bilinguals in forward translation from L1 to L2 was 1402.8827, $MSE = 79.18312$, while the reaction time of informal bilinguals was 1640.3459, $MSE = 37.53950$. There was a significant difference in response time between formal and informal bilinguals ($t(2, 48) = -3.000$, $MSE = 79.151351$, $p = .001.05$). Formal bilinguals were faster and had a higher accuracy score than informal bilinguals, as indicated. The formal bilinguals answered correctly 90.15 percent of the time. Formal bilinguals had an accuracy rate of 81.34 percent ($MSE = 1.07568$), whereas informal bilinguals had an accuracy rate of 81.34 percent ($MSE = 1.07568$). There is a significant difference in accuracy between formal and informal bilinguals ($t(2, 48) = 6.006$, $MSE = 1.467954$, $P = .001.05$). Figure 2. displays the influence of the formal and informal groups of participants on the forward translation task in terms of reaction time and accuracy.

Figure 2: Distribution of Reaction Time and Accuracy of Both Formal and Informal Bilinguals in the Forward Translation.



The backward translation reaction time and accuracy of both groups is another comparison of formal and informal participants' findings. On the backward translation task, a t-test was used to determine the speed of lexical activation in the formal and informal bilingual groups. The professional bilinguals' response time in backward translation from L2 to L1 was 1422.8827, MSE = 78.10605, while the informal bilinguals' response time was 1573.5768, MSE = 52.82559. Between formal and informal bilinguals, there was no significant difference in response time ($t(2, 48) = -1.660$, MSE = 790.771987, $p = .103 > .05$). As can be seen, formal bilinguals were exactly as fast as informal bilinguals, but their accuracy was greater. The accuracy rate for formal bilinguals was 91.1 percent (MSE = .73592), whereas the rate for informal bilinguals was 81 percent (MSE = 1.07568). There is a significant difference in accuracy between formal and informal bilinguals ($t(2, 48) = 6.732$, MSE = 1.450854, $P = .00105$.) Figure 3. depicts the impact of participants' formal and informal groups on the backward translation task in terms of response time and accuracy.

Figure 3: Distribution of Reaction Time and Accuracy of Both Formal and Informal Bilinguals In L2 Translation.

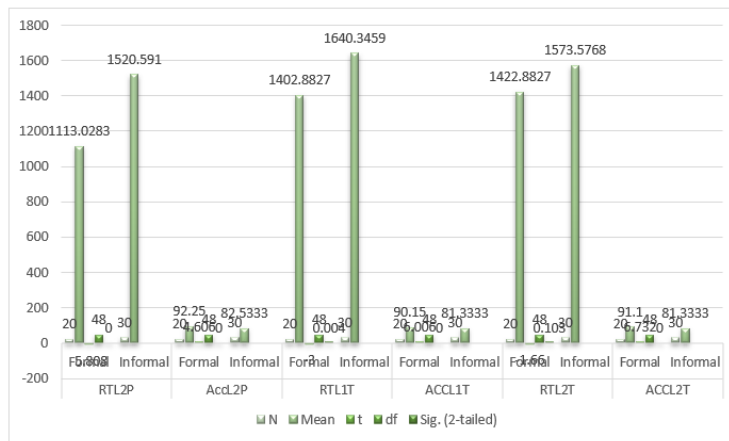


On the picture naming task, the formal and informal groups showed a statistical difference, with the formal participants responding better and more accurately than the informal ones. Furthermore, although the formal participants excelled in backward translation, there was no significant statistical difference in forward translation proficiency. The null hypothesis, which claimed that no statistical difference could be found between the participants' formal and informal groups, was refuted by this discovery. Table 1. Shows the differences in reaction time and accuracy scores between the formal and informal bilingual groups in both tasks.

Table 1: MRTS & ACC of formal and informal groups in picture naming and translation tasks.

	Factor	N	Mean	t	df	Sig. (2-tailed)
RTL2P	Formal	20	1113.0283	-5.808	48	.000
	Informal	30	1520.5910			
AccL2P	Formal	20	92.2500	4.606	48	.000
	Informal	30	82.5333			
RTL1T	Formal	20	1402.8827	-3.000	48	.004
	Informal	30	1640.3459			
ACCL1T	Formal	20	90.1500	6.006	48	.000
	Informal	30	81.3333			
RTL2T	Formal	20	1422.8827	-1.660	48	.103
	Informal	30	1573.5768			
ACCL2T	Formal	20	91.1000	6.732	48	.000
	Informal	30	81.3333			

Figure 4: MRTS & ACC of F & INF.



Informal language learning technique was born out of informal education and was popularized by Knowles in the field of education (1950). Coombs and Ahmad (1974) defined this kind of language learning as a widely accepted way of enhancing people's knowledge and abilities in an unstructured, non-institutional setting. On the other hand, formal approach or way of instruction is strongly institutionalized and takes place in standardized contexts. The impact of language learning styles was explored in the preceding paper. The leading function of this major variable in lexical-semantic structure and its relationship with bilingual proficiency level were summarized. There were significant differences between the formal and informal groups of participants on the photo naming test. In the L1 to L2 area of the translation task, however, both groups scored equally well, with the formal participants outperforming the informal participants in the second direction from L2 to L1.

The results show that how bilinguals learned their L2 plays a significant role in the mechanism of lexical activation, and they support the theory that bilinguals who followed a formal strategy in learning their L2 would be able to organize meanings in their memories better than those who learned their L2 in an ad hoc manner. The formal technique of language acquisition aids bilinguals in recalling words and ideas more quickly and accurately than the unstructured method. This research into the impact of acquisition mode on lexical activation or access mechanism is a novel topic in language organization, and no earlier studies have looked at the link between this variable and lexical activation or access mechanism. As a consequence of the statistical tests done, the acquired result was evaluated and qualitatively reported, indicating a substantial difference in both groups' performance in L2. At the same time, there is little relevance in L1.

Conclusion

The results support the theory that bilinguals who followed a formal technique in learning their L2 were better able to organize meanings in their memory than those who studied their L2 in an informal manner. The formal technique of language acquisition aids bilinguals in recalling words and ideas more quickly and accurately than the informal way. This research into the impact of acquisition mode on lexical activation or access mechanism is a novel topic in language organization, and no earlier studies have looked at the link between this variable and lexical activation or access mechanism. As a consequence, based on the statistical tests done, the acquired result was evaluated and qualitatively reported, indicating a substantial difference in both groups' performance in L2. Simultaneously, L1 seems to have little relevance. Formal participants performed better and more correctly than informal ones in the image naming test, with a statistical difference between them. When it came to forward translation, however, there was no statistically significant difference between the formal people and the non-formal ones. Contrary to expectations, the results demonstrated a statistical difference between the organized and unstructured groups of individuals.

Acknowledgements

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