

Acquiring Multiple Languages: Comparing the Efficiency of Learning L3 and L4 Simultaneously vs. Learning L3 First and L4 Later

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Abstract: This article discusses the worldwide demand for third language acquisition and fourth language acquisition. It reviews the current research on Language acquisition in relevant fields. Previous research is mainly about L2 learning, while this paper will fill the blank of L3 and L4 learning and compare the efficiency of learning L3 and L4 in different ways. By Control variates, we may find a more reasonable way for adults to learn new languages. There are experiments that the researchers let the Turkish-Persian bilinguals, Armenian-Persian bilinguals, and Persian monolinguals learn English, and compare their performance in vocabulary, or study Chinese students' learning outcome of studying English and Russian. These experiments are all helpful and meaningful, but they only compare one aspect--vocabulary or writing, which is isolated and one-sided. This article compares students' performance comprehensively, adopting standardized language tests to test students' reading, listening, speaking and writing skills. But one major limitation of the study is that we don't exclude the gender impact. This will be the later future directions. This research shows that there is a need on acquiring multiple languages in today's globalized world, our researches should pay more attention on this field.

Keywords: simultaneous learning, sequential learning, bilingual, trilingual

1. Introduction

The acquisition of multiple languages is becoming important in today's globalized world. Being multilingual is crucial for global communication, job opportunities and personal growth. However, most adults come from monolingual families and need to acquire additional languages after adulthood. This raises the question of how adults can acquire multiple languages efficiently and effectively in a limited time.

2. Background

Previous research has suggested that learning two languages simultaneously may hinder the motivation of both languages due to limited resources [1], while some studies have found that bilingual learners have an advantage in L3 learning, regardless of their L1, and when the L1 or the

L2 is less complex in morphological, and distant in lexicology, learning L3 becomes more difficult [2].

Rahmatian and Farshadjou's study investigated the simultaneous learning of two foreign languages, English and French, by adult Persian-speaking learners to explore whether simultaneous learning of two languages has any effect on the acquisition of each language. The findings of the study showed that "not only simultaneous learning is not an impeding factor but also it reinforces learning of the two languages" [3].

Ting Huang, Steinkrauss, and Verspoor's study compared the language acquisition outcomes of two groups of Chinese university students who learn English (L2) and Russian (L3) using two different strategies: One group learned English only and another group learned English and Russian simultaneously. The study found that learning L2 and L3 simultaneously did not hinder the development of L2 [4].

Keshavarz and Astaneh compared the performance of two bilingual groups of English as a foreign language with that of a monolingual group on a controlled vocabulary test. The study involved 30 Turkish-Persian bilinguals, 30 Armenian-Persian bilinguals, and 30 Persian monolinguals who were all female Iranian students, aged between 17-18 years old. The results of the study showed that both the bilingual groups performed better than the Persian monolingual learners on English, which suggested the positive effect of bilingualism on the third language vocabulary achievement [5].

Previous research mainly focused on L2 and L3, but in reality, people often have the demand of learning L3 and L4, such as Hong Kong's language students needing to learn Cantonese, English, Mandarin and another foreign language. We cannot know whether the research on L2 and L3 can be applied to L3 and L4. In addition, their tests mostly focus on vocabulary or writing levels, which are relatively single and the test they use are not international assessments, lacking large-scale transcript comparisons.

3. Proposed Study

My research will fill the gap in the field of L3 and L4 learning. There are no research comparing the learning outcomes between learning two languages simultaneously and learning L3 first and L4 later. My study aims to comparing the two ways adults may adopt to learn two different languages. We compare the language acquisition outcomes of two groups of Chinese university students who learn Japanese and German using two strategies: Group A learns L3 first and L4 later, while Group B learns both languages simultaneously.

We will use comprehensive standardized tests, which include listening, reading, speaking and writing parts. Comparing the average scores of two groups. If the scores of Group A is better than Group B, then we can guess learning two languages together will interfere both languages development. Other researches have already proved that bilinguals have benefits in learning L3, when compared to monolinguals. Then we can guess there might be a limitation about the amount of language people can get, beyond which the expansionary effect will decrease. If Group B's score is better than Group A, then we can encourage adults to learn two new languages together.

4. Methods

4.1. Participants

We recruited one hundred Chinese university students who had studied English for more than 10 years since primary school. The students are from Shanghai International Studies University. Their enrollment score, as well as their talents and abilities for language learning, are similar. We have controlled for the potential influences of dialects and family economic backgrounds on foreign

language acquisition, they are all from normal family whose annual income is between 200,000 to 4,000,000 CNY, and they are from the same dialect.

They were divided into two groups: Group A and Group B. Each group consisted of 50 students, which is the maximum number of people in a class. Group A learned only Japanese (L3) in their freshman year and only learned German (L4) in their sophomore year. Group B learned both Japanese and German simultaneously from their freshman to sophomore year.

Both groups are taught by the same experienced teachers who have over 20 years of teaching experience. The teacher responsible for teaching German and Japanese are equally qualified and knowledgeable.

4.2. Materials

We used standardized language tests, including The Japanese-Language Proficiency Test (JLPT) and Test Deutsch als Fremdsprach (TestDaF), to evaluate the language abilities of the two groups. Both tests are widely used for international students and immigrants and can assess students' comprehensive language abilities. The textbooks the two groups use are the same, Standard Japanese and Passwort Deutsch, which are the most popular resources for learning these two languages.

4.3. Procedure

After consulting with foreign language training institutions (Table 1-5), we have learned that mastering a language through massed learning typically requires 8 to 15 months. Therefore, we have developed a learning schedule that consists of a total of 480 class hours, with each lesson being 3 class hours long. Students will have four lessons per week, which equates to 12 class hours per week and 48 class hours per month. Both groups will spend 480 class hours studying Japanese and 480 class hours studying German. Each class hour is equivalent to 45 minutes and there are short breaks during the lesson. The total study time is about 2 hours, which is a reasonable amount of time for most adults to allocate studying each day, regardless of whether they are workers or students.

Table 1: The schedule of freshman year (2023/09/01).

Group A	4 Japanese lessons a week	Teacher A
Group B	2 Japanese + 2 German lessons	Teacher A + Teacher B

Table 2: The exam schedule of freshmen year.

Time	Group	Test	Average Score
2024/03/01	Group A	the mid-term examination for Japanese	A-JLPT M
2024/09/01	Group A	the final examination for Japanese	A-JLPT F
	Group B	the mid-term examination for Japanese	B-JLPT M
		the mid-term examination for German	B-Daf M

Table 3: The schedule of sophomore year (2024/09/02).

Group A	4 German lessons a week	Teacher B
Group B	2 Japanese + 2 German lessons	Teacher A + Teacher B

Table 4: The exam schedule of sophomore year.

Time	Group	Test	Average Score
2025/03/02	Group A	the mid-term examination for German	A-Daf M
		the examination for Japanese	A-JLPT 3
2025/09/02	Group A	the final examination for German,	A-Daf F
		the examination for Japanese	A-JLPT 4
	Group B	the final examination for Japanese	B-JLPT F
		the final examination for German	B-Daf F

Table 5: The final test of two languages (have 1 month to review).

2025/10/02 (Ultimate Test)	Group A (Average Score)	Group B (Average Score)
Morning	JLPT Test (A-JLPT U)	JLPT Test (B-JLPT U)
Afternoon	TestDaf Test (A-Daf U)	TestDaf Test (B-Daf U)

5. Results and Discussion

We compare different scores (Table 6), assuming that Group B will need one year to study the same content that Group A studied for half a year. All scores are average scores.

Table 6: For Comparison 1.

A-JLPT M > B-JLPT M	Studying two languages simultaneously will have a negative influence.
A-JLPT F > B-JLPT F	
A-Daf M > B-Daf M	
A-Daf F > B-Daf F	
A-JLPT M < B-JLPT M	Studying two languages simultaneously will have a positive influence.
A-JLPT F < B-JLPT F	
A-Daf M < B-Daf M	
A-Daf F < B-Daf F	

For Comparison 2.

A-JLPT U > B-JLPT U	Studying two languages simultaneously is not efficient.
A-JLPT U < B-JLPT U	Studying 2 languages simultaneously is more efficient and causes less language attrition.

For Comparison 3.

A-JLPT U > A-JLPT F	Studying German (L4) does not cause language attrition in Japanese (L3).
A-JLPT U < A-JLPT F	Studying German (L4) causes language attrition in Japanese (L3).

6. Conclusion and Future Directions

If Group B, who learned Japanese and German concurrently, performed better in both languages' final tests than Group A, who learned L3 followed by L4, then we can predict that simultaneous

learning of multiple languages is more effective and results in less language attrition when acquiring different languages. If Group A performed better in both languages' tests, it suggests that for adults it's a better way to learn different languages sequentially.

However, one major limitation of the study is that we don't exclude the gender impact. Most participants are girls, and we don't know if there will be a difference when the participants are mainly boys. Furthermore, the study's outcomes are limited to Japanese and German, and it's uncertain whether Group A would perform differently if they learned German first and then Japanese. Additionally, the study's results cannot be generalized to other languages, such as Spanish and Korean, Russian, and Arabic or Japanese and Korean. One other limitation is that the subjects are all bilinguals in mandarin and English. the differences of L1 and L2 may affect the study of L3 and L4.

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