



## The Structure of Capacities for Foreign Language Learning

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### Abstract

*The study examined the factors influencing proficiency in foreign language acquisition and the components of the structure of the capacities for foreign language learning. The applied methods were language and psychology testing, survey methods (questionnaire and interview), method of expert evaluation, analysis of learners' speech products, statistics. The experiment resulted in defining the structure of capacities for foreign languages learning in the general structure of personality; in determining the interrelations between the proficiency of foreign language learning and the level of mental processes development, phonemic and musical hearing, sense of rhythm, motivation, diligence, verbal creativity and verbal anticipation.*

The theoretical analysis of the studies on foreign language acquisition has shown that the criteria of proficiency in foreign language learning might be the indicators of production of all kinds of speech activity: listening, speaking, reading, writing and thinking. Some researchers define the proficiency in learning as a principal integral characteristic of personality determined by general capacities [1]. The general capacities are often referred to mental cognitive processes like perception, memory, thinking [2]. The capacities for foreign language learning differ from the special language capacities in psychological content, structure and criterion of manifestation. The academic advancement can be the indicator of learners' foreign capacities development [3]. The capacities for foreign language learning are a complex structural formation of learner's personality. Knowing the main components of the structure of the capacities for foreign language learning can enhance foreign language teaching and learners' achievement.

A systematic investigation of structural relationship of the factors affecting foreign language achievement requires the use of an advanced methodology. According to the theory of Russian psychologist K.K. Platonov the capacities are the structure of personality characteristics based on the main four substructures: orientation (beliefs, personality meanings, interests), experience (knowledge, skills, habits), form of reflection (cognitive processes, emotions, will) and biopsychic substructure (temperament, gender and age characteristics and so on) [4]. The author of the article has made some attempts to examine the structural relationships among individual factors affecting foreign language achievement.

The main empirical methods were psychological and language testing, survey methods (questionnaire and interview), the method of expert evaluation, the analysis of learners' products of speech activity. The results of the study were processed mathematically and statistically with calculation of key indicators ( $M \pm \sigma$ ); correlation and intercorrelation. The significance of differences was determined by t-test.

649 students studying English were tested during the experiment. 101 of them were from special language departments, others were from non-language departments. Their mean age at the time of the experiment was 21 years ( $SD \approx 2.6$  years). The participants were tested to determine their level proficiency in listening, speaking, reading and writing. The proficiency was rated on a scale from 1 to 9 with 1-3 being very low proficiency (including poor skills in listening, limited vocabulary, minimal speaking fluency), with 4-6 being average proficiency and with 7-9 being high language acquisition proficiency (including excellent writing skills, speaking fluency, wide vocabulary, correct grammar).

The phonemic hearing is a complex formation including motor and auditory sensitivity. The following techniques were used to study the phonematic hearing: 1) on differentiation of lexical units with similar sounds; 2) on differentiation of lexical units with similar sounds in the sentences; 3) on detecting similarity and distinction of sentence rhythm; 4) on remembering words of unknown foreign language; 5) on articulation of lexical units with similar sounds separately and in the sentences.

Psychological testing included the diagnostics of short-term and long-term memory, auditory and visual memory, working, logic and involuntary memory, the firmness and concentration of attention, verbal and logic thinking, temperament, motivation. The level of native language acquisition and musical hearing had been assessed. The experts' grades of proficiency in foreign language learning were received based on the scale from 1 to 9.



All the participants were divided in two groups: “high-successful” and “low-successful”. The experts’ grades on listening, speaking, reading and writing indicating students’ proficiency in foreign language acquisition demonstrated the advantages of “high-successful” groups ( $p < 0,001$ ).

The comparison of data of “high-successful” and “low-successful” students demonstrated no significant differences in the levels of visual and logic memory, logic thinking and characteristics of thinking (disposition to analysis and comparison, easiness in association manifestation, speed of thinking and others). But significant differences have been revealed between the groups on the following indicators: phonemic hearing ( $p < 0,05-0,001$ ), auditory short-term memory ( $p < 0,01$ ), working memory ( $p < 0,001$ ), musical hearing and the sense of rhythm ( $p < 0,05$ ), verbal creativity and verbal anticipation ( $p < 0,001$ ), motivation and dignity ( $p < 0,001$ ), the level of native language acquisition ( $p < 0,05$ ).

The comparison analysis allowed to reveal significant differences in the indicators of auditory and working memory development in native ( $p < 0,01$ ) and foreign ( $p < 0,001$ ) languages as well. The students of “low-successful” group failed the tests on auditory and working memory in native and foreign languages. The students of “high-successful” group demonstrated high grades on the tests and nonsignificant differences between the levels of auditory and working memory development in native and foreign languages. The research results allowed to include the above-mentioned components in the structure of capacities for foreign language learning.

For detecting the relationships between the proficiency in foreign language learning in all kind of speech activity: listening, speaking, reading and writing (the criteria of foreign language capacities manifestation and development), the correlation between the experts’ grades and the variables of language and psychological testing have been examined.

Pearson  $r$  correlation analyses revealed significant relationships between proficiency in foreign language acquisition and the indicators of mental cognitive processes: involuntary memory ( $r = 0,32-0,39$ ), verbal thinking ( $r = 0,27-0,43$ ), firmness ( $r = 0,44-0,47$ ) and concentration of attention ( $r = 0,25$ ), the level of native language acquisition ( $r = 0,31-0,41$ ). The correlation and intercorrelation analyses have demonstrated the strong relationships between experts’ grades and the rates of auditory short-term memory ( $r = 0,54-0,55$ ) and working memory ( $r = 0,63-0,72$ ), verbal creativity ( $r = 0,59-0,62$ ), verbal anticipation ( $r = 0,73-0,74$ ), musical hearing ( $r = 0,33-0,40$ ) and the sense of rhythm ( $r = 0,41-0,43$ ). These components can be included in the structure of foreign language learning capacities.

The grades of proficiency in listening showed significant relationships with the levels of auditory short-term memory ( $r = 0,42$ ) and long-term memory ( $r = 0,47$ ). The proficiency in speaking correlated with the indicators of auditory memory ( $r = 0,43$ ) and working memory ( $r = 0,47$ ), attention ( $r = 0,67$ ), verbal creativity ( $r = 0,68$ ) and verbal intelligence ( $r = 0,48-0,62$ ). The strong significant relationships were revealed between the experts’ grades and the variables of visual memory ( $r = 0,59$ ), attention ( $r = 0,57$ ) and verbal intelligence ( $r = 0,40-0,74$ ).

The intercorrelation analysis revealed strong relationships between the components of the structure of capacities for foreign language learning (table 1).

Table 1 – The components of the capacities for foreign language acquisition and their relationships

The components of capacities		1	2	3	4	5	6	7
1	Working memory		0,50	0,58	0,51	0,55	0,46-0,67	0,53
2	Auditory memory			0,43	0,36	0,66	0,43-0,59	0,66
3	Verbal anticipation				0,54	0,59	0,36-0,71	0,59
4	The concentration of attention					0,53	0,41-0,48	0,46
5	The sense of rhythm						0,38-0,49	0,58
6	Phonemic hearing							0,34-0,53
7	Verbal creativity							

As it is seen from the table 1 all the components of the structure of the capacities for foreign language learning have strong relationships between each other ( $r = 0,34-0,71$ ;  $p < 0,05-0,001$ ).

The phonemic hearing is one of the noncompensable components of the capacities for foreign language learning. That had been verified by significant correlation between the indicators of the phonemic hearing and the variables of other components of the capacities for foreign language learning: working memory ( $r = 0,67$ ;  $p < 0,01$ ), auditory memory ( $r = 0,59$ ;  $p < 0,01$ ), musical hearing ( $r = 0,42$ ;  $p < 0,05-0,01$ ) and the sense of rhythm ( $r = 0,49$ ;  $p < 0,01$ ).

The correlation analysis showed reliable and strong relationships between the indicators of motivation and diligence and the experts’ grades of listening, speaking, reading and writing ( $r = 0,82-0,87$ ) and the variables of the components of the capacities for foreign language learning: working memory ( $r = 0,57$ ), auditory memory



( $r=0,51$ ), verbal creativity ( $r=0,43-0,51$ ). Thus, diligence and discipline as personality characteristics are important individual factors influencing proficiency in foreign language acquisition.

The research results have demonstrated that individual differences in auditory and working memory, motor and auditory sensitivity, articulation and differentiation of lexical units with similar sounds separately and in the sentences, musical hearing, detection of similarity and distinction in sentence rhythm, production of new verbal and creative material are closely linked to proficiency in foreign language achievement. Correlation and intercorrelation analyses have verified the complex relationships between different factors influencing foreign language proficiency. The following components of the capacities for foreign language learning have been detected: auditory and working memory, the firmness and concentration of attention, phonemic hearing (motor and auditory sensitivity), musical hearing, the sense of rhythm, verbal anticipation and verbal creativity. The structure of capacities for foreign language learning is characterized by integrity and unity of all their components and their relationships in the general structure of personality.

Research results can be used for enhancing foreign language teaching in the higher educational establishments, for personalization of learning process, for training of foreign language teachers and teachers of psychology, for designing educational programs on basic psychology, psycholinguistics and psychology of language.

## References

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