# THE ROLE OF INTELLIGENCE IN SECOND LANGUAGE LEARNING

**Jakhongir Boymakhmat ugli Kakhramonov**
Foreign Language Teacher at Tashkent State University of Economics
jahongirqahramonov@gmail.com

## ABSTRACT

The aim of this research is to identify how intelligence effect on learning effectiveness in second language learning and how they are strongly connected. The researcher also eager to find out the results which collected from students will match to results of existing and conducted researches on that topic. The reason for choosing that topic was researcher found very few and limited researches in that topic and wants to determine the relationship between intelligence and learning a second language.

In the current research, participants IQ level assessed by a non-verbal test in order to identify their intelligence level and participants were categorized into high and low IQ acquirers for further research. At the next stage learners` learning competence evaluation divided into two parts: At the first part learners` reading comprehension level was measured and at the second part their communicative competence was assessed.

**Keywords:** Second language learning, Intelligence, Reading comprehension, Communicative competence, Achievement.

## INTRODUCTION

The mother tongue is language which baby learn at the first stage of the his or her life. A second language is any other language which acquired during the lifetime. Therefore, second language acquisition is learning an another language when already the mother tongue is established. In terms of second language learning, there countless times observed that, in the same foreign class some students progress rapidly, whereas others have some difficulties and struggle while learning and show very slow progress. Neil Naiman (1995) have tried to identify the characteristics of learners and relationship of characteristics for successful learning. There are many external and internal factors which affect to language learning process. Such as, motivation, aptitude, attitude, intelligence, learning styles, age and others. Among this factors intelligence is fewer observed and have conducted little research comparing to other factors. The current research deals with intelligence and undertaken to evaluate the role of intelligence and how intelligence strongly interconnected and affects to learning a second language.

The existing and conducted some researches over the years show that IQ scores is good mean in prediction of success in second language learning. Intelligence`s effect on leaning can be seen in formal classroom activities. However, IQ may be strongly relate to only metalinguistic abilities on learners, rather than communicative abilities. Moreover, it has been observed that intelligence has effect on learning grammar structures and reading comprehension while it has less relation to oral production skills. This means IQ tests may strongly be indicators of language learning when it comes to learning of language analysis, rule learning and comprehension of reading materials. But it cannot determine the learner's communication skills where classroom and out-class activities much more focused on communication and interaction. Recent years, majority of researchers influenced by Gardner`s (1983) theory of "multiple intelligence" and traditional IQ tests only assess the students limited cognitive abilities.

## LITERATURE REVIEW

Intelligence is one of the factors that can effect on learning of second language which researchers are debating. Many scholars believe that intelligence influences language learning, while others argue that there is no link between intelligence and language learning. What we are sure of is that there is no expected negative impact of intelligence on language learning. Others also think intelligence has an effect on language learning, but it doesn't show less intelligent people can't learn a language fully. They claim that we should provide learners with more assistance and resources in order to facilitate their learning than simply leave them as an unable to learn a foreign language.

The basic problem solving abilities for human beings may generally be considered as intelligence. This is the cognitive ability including reasoning, recognizing similarities and analogies, evaluating, quick learning, etc. Intelligence, though, cannot be so easily defined. Intelligence has many other definitions. However, most of the psychologists and linguistics agree with the definition of "the ability for complex thinking and reasoning" (Ceci, 2001, p.4). According to Ellis (2008) "Intelligence is the general set of cognitive abilities involved in performing a wide range of learning tasks" (p.649). Traditionally, the word "intelligence" has been used to refer to success in certain assessments evaluating linguistic and non-linguistic abilities (Brown, 2000).

Over the years, several experiments using a number of intelligence tests and different language acquisition testing approaches have shown that IQ ratings are a reasonable way to predict second language learners ' progress. For instance, a study which carried out in Canada, students of French immersion in Canada showed that while intelligence was linked to the learning of French as a second language including

reading comprehension, grammar and vocabulary, it was not related to oral communicative skills (Genesee, 1976). What this means that while intelligence can be a solid factor in studying language analysis and rule learning, whereas it can play a less important role in classrooms where communication and interaction are more preferred (Candlin & Mercer, 2001).

Intelligence has different effects on different abilities. Low-level relationship exists between intelligence and learners` listening comprehension and oral production skills, but high-level correlations occur when reading comprehension, grammar learning and free writing tests are assessed. According to Ellis (2008) the suggested theory is that in Cognitive Academic Language Proficiency (CALP), intellect is observed as an important factor, however less involved in Basic Interpersonal Communication Skills (BICS). CALP is the proficiency need to carry out tasks which are context reduced and cognitively demanding in the context of academic studies, while BICS consists of the skills required for oral communication and the social use of language and human interaction.

Some researches show that, intelligence is considered to have little relationship with learners` performance as a second language learner. It is proven that without high IQ level students achieved success in second language learning. The reason of this may be depend on intelligence's role in classroom settings and its absence in daily life communication context (Brown, 2000).

According to recent studies conducted by linguistics, one of them Gardner (1983) suggests a hypothesis of categorizing human talents as "Multiple Intelligence Model". Gardner introduces eight types of intelligence including: linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, intrapersonal, interpersonal, and naturalistic. He gives attention to only first two categories and describes intelligence assessments as they are only based on evaluation of human`s cognitive abilities, as seeing and assessing only one part of brain. Moreover, Gardner describes traditional intelligence definitions as culture dependent and claims his view as culture free and avoids from narrowness.

Above mentioned variety of views showed that there is a relationship between intelligence and second language learning comparing to traditional methods and definitions of intelligence. Apart from intelligence it is assumed that another factors including motivation, aptitude, personality, age, instruction type, learning environment impact on second language learning. However, Brown (2000) states that the biggest barrier to acquire a second language seems to be a memory, in sense if learner remembers what instructor taught, what learner heard in terms of their memory capacity, he would be successful language learner. Considering, all above mentioned theories this research study tries to identify how intelligence and second language

learning are interconnected and relationship between intelligence and reading comprehension on the one hand, communicative competence on the other.

## DISCUSSION

The study was conducted in three parts and 2 participants took part in the study. A **non-verbal intelligence test** consisting of 25 questions was employed to the students in the first section. They had to complete the test for 35 minutes. In the second part, a proficiency **test on reading comprehension** consisting of 20 questions was provided to the students and they were given 30 minutes to complete the test. The third part of the study was aimed at finding out the communication competence of the students in English. In order to conduct **the interview** and assess them honestly researcher interviewed students individually. After that, based on their interviews, researcher obtained a result of the communication skills of the students.

Researcher applied the non-verbal intelligence test for the students including 25 questions which was designed and standardized by Raven`s Progressive Matrices. The non-verbal test consisted of set of matrixes without any verbal statements. Researcher aimed to measure the non-verbal ability of students and questions were designed to involve students age also. The questions take the form of a matrix of 3x3 which one tile is missing. Eight potential A-H responses were provided for every question. Students had to select the tile that best completes the matrix. The researcher took the test from the open source on web.

A reading comprehension test were used to evaluate the students` language proficiency on reading competence of the language. The reading assessment was developed by Cambridge English Language Assessment. The reading material consists of 20 questions including 3 part which logically sequenced and level of questions were increased in each part. During the test students encountered some problems with parts of the speech, vocabulary and phrases. This test was also taken from the open source on web.

According to Harris (1969) the simplest and the easiest way to measure the students` communicative competence is conducting the interview individually. Like questionnaires interview also commonly used type of research tool in order to collect desired data. In this research, researcher chose structured open-ended questions since open-ended questions require full sentences to answer using students' own knowledge and feelings and cannot be answered with short answers like "yes" and "no". In this approach, topic was controlled by researcher but students were free to speak whatever came to their mind on topic and it was easy to assess their communicative competence in English. Researcher chose basic daily conversational topics in order to assess since it was easier to speak for students also and it allowed to researcher get overall image

of students oral-proficiency. Researcher rated students according to five criteria including pronunciation, fluency, comprehension, vocabulary and grammar. For each criteria scores were given and then all scores were averaged to evaluate their communicative competence.

## RESULTS

The participants of this research were given two multiple question tests to assess their intellect and achievement in the EFL by using of reading material. Both tests were employed for during one session. First of all, the students were distributed the intelligence test papers and their answer sheets. They were told to write down their names on the answer sheets to enable their scores to be compared with the scores obtained on the English tests. When the test allocated time for intelligence test was finished, this test's papers and answer sheets were collected and the reading test papers and answer sheets were distributed.

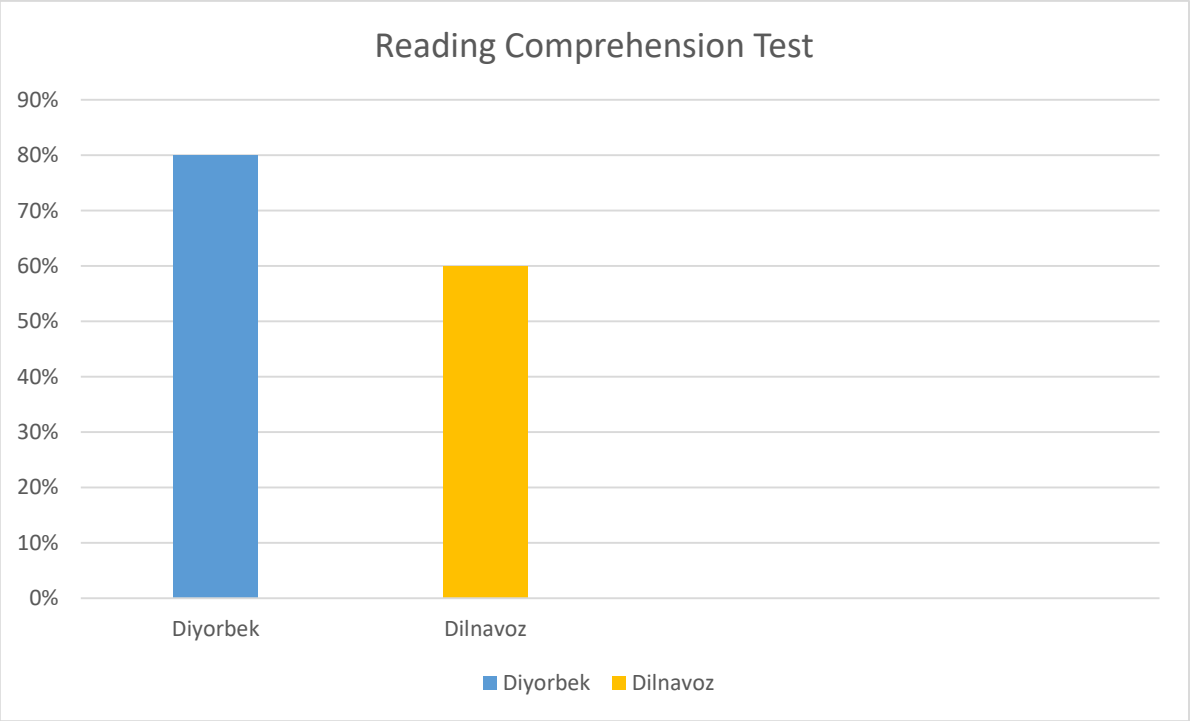
The collected data were sent for statistical analysis after gathering the test answers. The numbers were tabulated after counting the number of correct answers and converted into percentages. For the presentation of the results, tables and column diagrams were used. Depending on the five criteria listed above, the interviews were rated and recorded as well. Interview ratings were also converted into percentages. The interrelationship between the three data was determined after all three data were collected and converted into percentages. The intelligence test consists of 25 questions and each question carries one mark, while reading comprehension test contains only 20 questions and each question carries one mark as well. The two tests were evaluated separately and the findings were shown in forms of graphs and tables.

The reading comprehension test containing wide variety of English language aspects including tense, sentence structures, grammar and vocabulary level were evaluated. Students` language proficiency were measured under assumption that higher results from the test indicates higher proficiency level. The following table shows the results which obtained by students in reading comprehension assessment.

| Students | Score | Percentage |
|---|---|---|
| Diyorbek | 16 | 80% |
| Dilnavoz | 12 | 60% |

**Table 1**

Above scores are represented in forms of column graph in the following graph



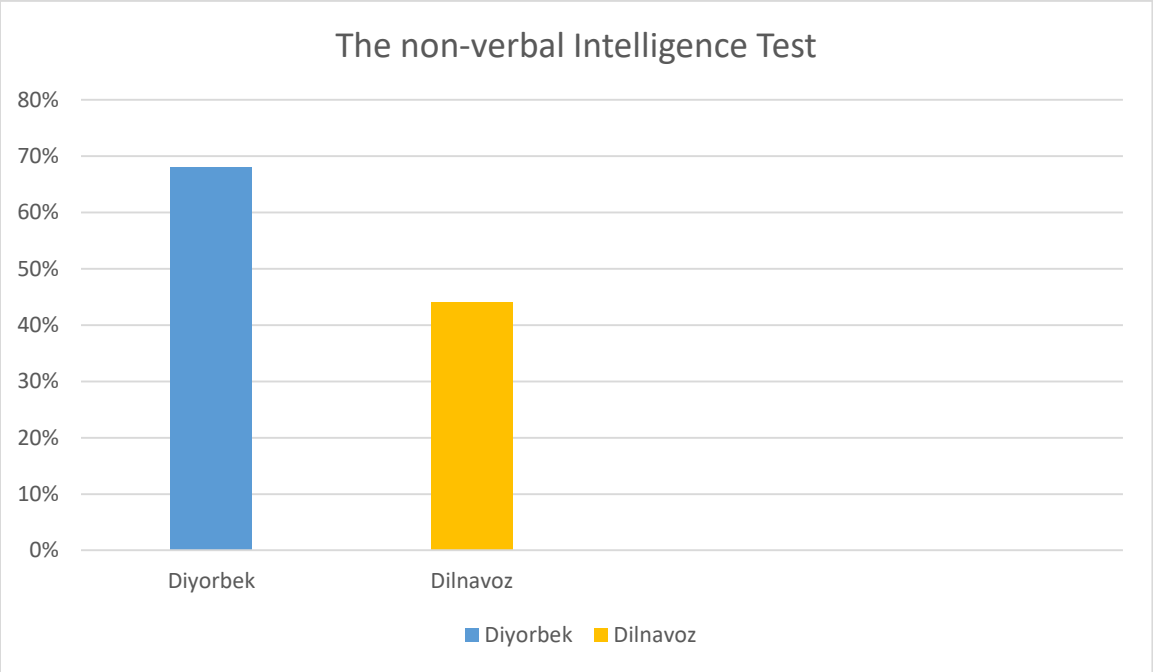

**Graph 1**

Researcher applied the non-verbal intelligence test for the students including 25 questions and each question carries one mark. The non-verbal intelligence test was designed and standardized by Raven`s Progressive Matrices. The non-verbal test consisted of set of matrixes without any verbal statements. The questions take the form of a matrix of 3x3 which one tile is missing. Eight potential A-H responses were provided for every question. Students had to select the tile that best completes the matrix. The following table shows the results which obtained by students in non-verbal intelligence test.

| Students | Score | Percentage |
|---|---|---|
| Diyorbek | 17 | 68% |
| Dilnavoz | 11 | 44% |

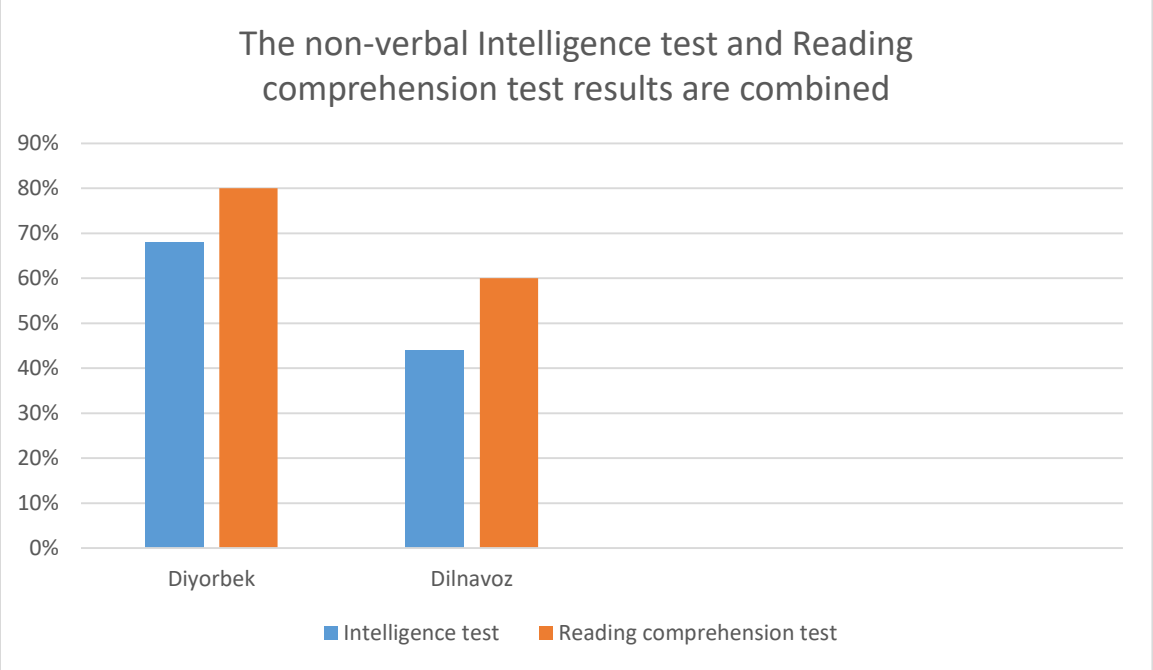
**Table 2**

Above scores are represented in forms of column graph in the following graph




**Graph 2**

The graph below shows the results obtained by the students on reading comprehension test and intelligence test and compares the results.




**Graph 3**

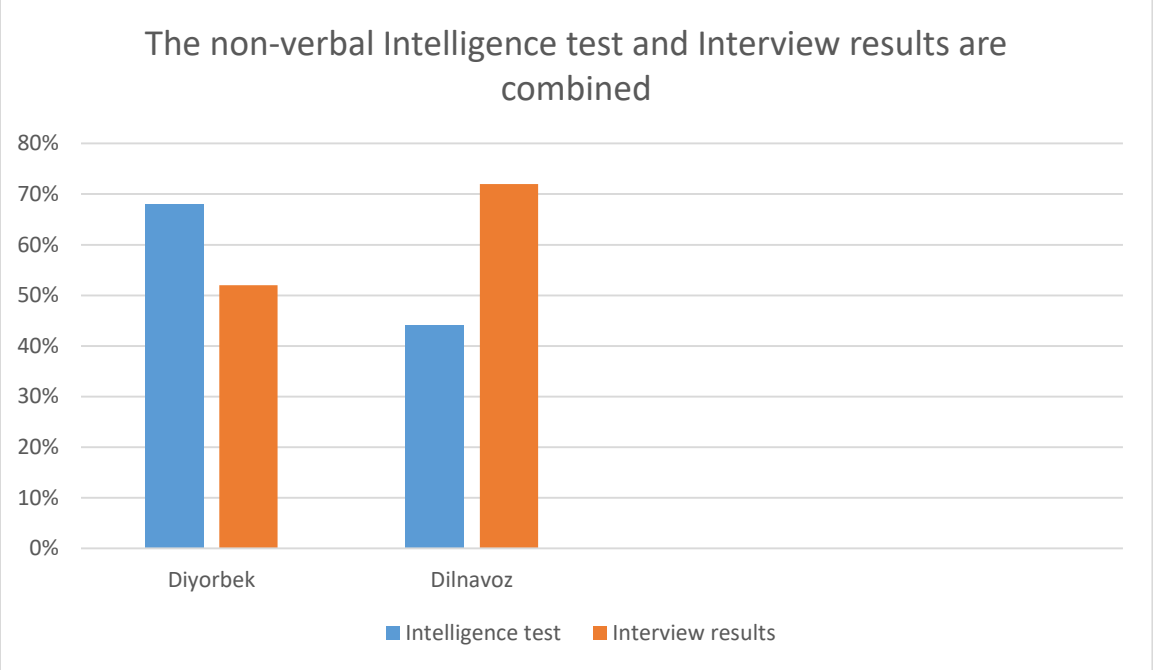
Above mentioned graphs shows that, it can be seen that in most situations, there is a correlation between the intelligence test and in the proficiency test on reading. Students who scored higher in both tests got higher percentages and who scored lower in both tests got lower percentages. This indicates that there is a correlation between the intelligence of the students and the level at which they have on reading comprehension.

For interview researcher rated students according to five criteria including pronunciation, fluency, comprehension, vocabulary and grammar. For each criteria scores were given between range from 1 to 5 and then all scores were averaged and converted to percentages to evaluate their communicative competence. The following table shows the results which obtained by students in the interviews.

| Students | Pronunciation | Fluency | Comprehension | Vocabulary | Grammar | Average | Percentage |
|---|---|---|---|---|---|---|---|
| Diyorbek | 2 | 2 | 3 | 3 | 3 | 2.6 | 52% |
| Dilnavoz | 4 | 4 | 4 | 3 | 3 | 3.6 | 72% |

**Table 3**

The graph below shows the results obtained by the students on interviews and intelligence test and compares the results.




**Graph 4**

Above mentioned graphs shows that, there is a weak correlation between intelligence scores and interview results which obtained by students. Student who scored low percentage on her intelligence test showed higher percentage in terms of communicative competence. On the other hand, student who scored high percentage on intelligence test showed lower percentage in communicative skills. The results obtained from the both tests suggest that there is a weak relationship between intelligence and communicative competence.

The results of this research show that there is a weak relationship between intelligence and second language acquisition. In general, language proficiency achievement and correlation between intelligence can be found in reading comprehension and grammar, however it is very weak. Above results show that even

low intelligence acquirer demonstrated much higher result in reading comprehension test. Moreover, even high intelligence acquirer`s result on reading comprehension was higher than his intelligence score. For that reason, we can conclude that although intelligence can be crucial factor in second language acquisition and can effect to learner`s learning process, this effect is not very strong correlation. Many other factors should be take into consideration while learning process including learners` aptitude, age, personality type, motivation level, gender and self-confidence on learner.

## CONCLUSION

Analysis of results show that there are many factors that play a role in the learning of a foreign language, but perhaps more significant than a single factor can be the combination of factors and the relationship among factors that may change depending on the circumstances. Researchers must always bear in mind that the personality and cultural characteristics of each learner can influence the learning of English as a second or foreign language.

Some derived findings from this research indicates that intelligence and language acquisition closely connected when it comes to deal with cognition demanded tasks. Cognitive abilities also can make sense in the learning language structures. Therefore, cognitive abilities and intelligence can help individuals to acquire a second language more effective and faster. However, low-relationship occurs when it comes to acquire communicative competence. In this research also it was proved that correlation between intelligence and communication skills was low.

This research has also some implications for further researches. Many other personal factors play crucial role in second language acquisition and intelligence is only one of the factor of these. High intelligence can predict language proficiency achievement; however, it should not be based on only this factor. Therefore, teacher need to consider also low-intelligent students and need to develop a curriculum which covers all types of students no matter how their intelligence level. Employment of variety of task types can create positive learning environment and can cause to encouragement on learners. Learners also should bear in mind that intelligence is not only important factor that identifies language learning success. Being less intelligent can be substituted by other factors like high motivation and aptitude and strong desire to second language learning. As a conclusion, language learning is a long process that learner`s practice and effort are key factors in achieving success and only intelligence cannot indicate the language acquisition.

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