4 RESEARCH RESULTS

4.1 Results of factor analysis

When analysing the correlation matrix in the course of this research, it was found that all variables are interconnected by a single inner factor influencing the performance in each individual variable. This is why the correlation matrix was reduced, and the assumption verified by factor analysis. Using the method of principal components, only one factor was extracted from the correlation matrix. As a result, there was only one solution to the correlation matrix and it was not possible to carry out rotation of factors to find the best solution of the correlation matrix.

Table 2: ***Results of factor analysis***

	Loadings of Factor 1	Explained variance	% of Explained variance	Residual variance	% of Residual variance
Verb forms	-0,87452	0,764782	76,4782	0,235218	23,5218
Cloze test	-0,86125	0,741745	74,1745	0,258255	25,8255
Auxiliaries	-0,8606	0,740637	74,0637	0,259363	25,9363
Passive	-0,85211	0,726086	72,6086	0,273914	27,3914
Prepositions	-0,85071	0,723709	72,3709	0,276291	27,6291
Modals	-0,76345	0,582859	58,2859	0,417141	41,7141
Articles	-0,70452	0,496342	49,6342	0,503658	50,3658
(Un-)Countable	-0,70127	0,491773	49,1773	0,508227	50,8227
Conditionals	-0,43793	0,191785	19,1785	0,808215	80,8215
Total		5,459718	0,606635	3,540282	39,33647

Loadings of Factor 1 – correlations between compound variables and the extracted factor; **Explained variance** – the explained variance, factor loadings squared; **% of Explained variance** – the variance of variables explained by the intrinsic factor in percent (calculated by multiplying the second column by 100); **Residual variance** – as the total variance within one variable is 1, the residual variance was calculated according to the pattern 1 – loading^2; **% of Residual variance** – the residual variance in percent, calculated by multiplying the figures in the last but one column by 100.

As can be seen in **Table 2**, the factor (which can be named **grammatical performance factor** or **GP factor**) was strongly saturated by all variables, as the loadings (correlations of variables) were considerably high. The highest value of factor loading was observed in the variable ***verb forms*** (a = -0.87452). It means that the factor can explain 76% of the variable in question, and only 24% remains unexplained. The second highest loading was found in the variable ***cloze test*** (a = -0.86125). The factor predicts as much as 74% of performance in relation to the respective variable. The third highest correlation (a = -0.8606) with GP factor was observed within ***auxiliary verbs***. The correlation is almost as high as the previous one, the factor explaining almost 74% of the variable. The next significant variable was ***passive voice*** with a correlation a = -0.85211. The

extracted factor can predict 72.6% of the performance in ***passive voice***. The variable ***prepositions*** with factor loading a = -0.85071 explains 72.3% of the variance in relation to the variable in question. There is an apparent gap between ***prepositions*** and ***modal verbs***. Although ***modal verbs*** also showed high correlation with the factor (a = -0.76345), it is significantly lower than the previous ones. The difference is even more obvious from the figure showing the explained variance (58.3%). In ***articles***, the factor saturation equalled a = -0.70452. The factor predicts 49.6% of the variance. This variable is the first where unexplained variance (50.4%) is higher than the variance explained by the extracted factor. In the variable ***countable/uncountable nouns***, the factor loading of a = -0.70127 was calculated, explaining 49% of the variance. The variable ***conditional clauses*** seems to be the least dependant on the GP factor, as its factor loading only reached a = -0,43793. It explains barely 20% of the variance with more than 80% of the variance unexplainable by the extracted factor.

Since the total number of observed variables was 9 and each variable showed the total variance of 1, the variance reached 9 in total. Out of this, 5.459718 was explained by the factor extracted from the correlation matrix and saturated by all variables testing grammatical skills, which represents 60% of the total variance. As much as 3.540282 was left unexplained, which covers 40% of the total variance. The generated factor, hence, reflects the correlation matrix precisely.

Table 3: ***A part of the correlation matrix showing all variables***

	Age	S	F	M	PS	WF	G	DSC	SF	TC	A	WM
CT	-0,02	0	-0,04	0,01	**0,18**	**0,32**	**0,31**	**0,21**	**0,43**	**0,27**	0,13	**0,39**
VF	-0,08	0	0,01	0,08	0,11	**0,29**	**0,3**	**0,19**	**0,46**	**0,33**	0,16	**0,37**
AV	-0,01	0,04	0,02	0,11	0,11	**0,33**	**0,22**	**0,25**	**0,42**	**0,35**	**0,2**	**0,45**
MV	0,04	0,05	0,04	0,09	0,04	**0,27**	0,09	0,13	**0,42**	**0,23**	0,15	**0,24**
CC	-0,04	0	0,05	0,13	0,08	0,16	0,08	0,12	**0,18**	0,11	0	**0,24**
PV	0,05	0,02	0,04	0,07	0,13	**0,23**	**0,22**	**0,24**	**0,37**	**0,32**	0,15	**0,26**
C/U	-0,01	-0,07	0,04	0,13	0,08	**0,27**	0,16	**0,27**	**0,25**	**0,34**	0,13	**0,31**
A	0,01	-0,01	-0,05	-0,03	0,11	**0,24**	**0,24**	**0,28**	**0,22**	**0,22**	0,05	**0,22**
P	0,13	0,01	0,07	0,12	0,09	**0,38**	**0,17**	**0,23**	**0,37**	**0,38**	**0,22**	**0,32**

CT – cloze test; **VF** – verb forms; **AV** – auxiliary verbs; **MV** – modal verbs; **CC** – conditional clauses; **PV** – passive voice; **C/U** – countable/uncountable nouns; **A** –articles; **P** – prepositions; **Age** – age of the respondents; **S** – number of siblings; **F** – the age of father; **M** – the age of mother; **PS** – the length of prior study of English language; **WF** – ford formation; **G** –generalisation; **DSC** – digit sequence completion; **SF** – sentence formation; **TC** – though completion; **A** – analogy; **WM –** working memory
Significant correlations (with the probability of error lower than 5%) in the above correlation matrix are highlighted.

From **Table 3** it is apparent that the age of the respondents, their number of siblings and ages of their parents did not play a significant role in English grammar performance. Moreover, the results show that there is no relationship between the observed variables and how long the respondents had studied English for (expressed in years), except for the variable ***cloze test*** where the correlation reached r = 0.18. Despite the correlation being low, it is significant, which means that a certain level of correlation exists in the population with a probability of error lower than 5%.

In the following chapter, each grammatical aspect is analysed against all intelligence subtests. In each table, cognitive process variables are given in order of the significance of their correlation coefficient with the respective grammatical subtest, starting with the highest correlation.

4.2 Correlations between cloze test and intelligence subtests

Table 4: ***Correlations between cloze test and intelligence subtests***

Cloze test	N	r (X,Y)	r^2	t	p	Conf - 95%	Conf + 95%
Sentences	143	0,428806	0,183874	5,636267	0	0,28	0,56
Memory	143	0,388144	0,150656	5,001045	0,000002	0,24	0,52
Words	143	0,319032	0,101781	3,99717	0,000103	0,17	0,46
Generalisation	143	0,307371	0,094477	3,835512	0,000188	0,15	0,45
Thoughts	143	0,265285	0,070376	3,267148	0,001364	0,11	0,42
Digits	143	0,208437	0,043446	2,530632	0,012484	0,05	0,36
Analogy	143	0,126722	0,016058	1,516969	0,131513	-0,04	0,29

Sentences – sentence formation; **Memory –** working memory; **Words** – ford formation; **Generalisation** –generalisation; **Thoughts** – though completion; **Digits** – digit sequence completion; **Analogy** – analogy; **N** – number of respondents; **r(X,Y)** – correlation between variables; **r2**- coefficient of determination; **t** – t-test; **p** – probability of error; **Conf -95%** and **Conf + 95%** – confidence interval

4.2.1 SENTENCE FORMATION VERSUS CLOZE TEST

Table 4 shows correlations calculated between the grammatical subtest ***cloze test*** (which incorporates all other parts of grammar involved in other subtests) and the intelligence subtests.

The highest correlation was found between ***cloze test*** and ***sentence formation*** (r = 0.43). The variable ***sentence formation*** explains 18% of the variance of ***cloze test***, with the confidence interval ranging from r = 0.28 to 0.56. Tasks in this variable were aimed at composing sentences from a given list of words and the following skills were significantly involved: creativity, associative thinking, combination ability as well as general “feeling for language” along with

conceptual thinking, which is also important in the process of language acquisition.

4.2.2 WORKING MEMORY VERSUS CLOZE TEST

From the above table it is apparent that ***working memory*** played a significant role in performance in ***cloze test***. With a correlation of r = 0.38, the variable is the second most important variable saturating the intrinsic factor, conditioning high correlations among the grammatical variables. ***Working memory*** predicts 15% of the performance in the variable ***cloze test***. However, the confidence interval was too broad (r = 0.24; r = 0.52) to provide sufficient basis for a correlation existing in reality.

4.2.3 WORD FORMATION VERSUS CLOZE TEST

The correlation between ***cloze test*** and ***word formation*** (r = 0.3), covers 10% of the performance within the above variables. The confidence interval ranges from 0.17 to r = 0.46, which is why, again, it is impossible to predict correlation in the population. From the results it is obvious that ***word formation*** influences performance in ***cloze test***. The variable ***word formation*** involved composition of words from jumbled letters. By means of this subtest, such cognitive processes as associative thinking and combination skills were measured and some correlations with tests of creativity were discovered (**Vonkomer**, **1992**). It can be presumed that some of the previously mentioned cognitive processes are also involved in the variable ***cloze test***.

4.2.4 GENERALISATION VERSUS CLOZE TEST

The variable ***cloze test*** showed a significant correlation (r = 0.3) with ***generalisation***. This variable can explain approximately 10% of performance in ***cloze test***. According to the confidence interval, a certain level of correlation can be expected in reality with the probability of 95% in the range of r = 0.15 and r = 0.45. In order to test generalisation ability, the research subjects were given a group of words and were asked to mark those words that had something in common. From the statistical results it can be assumed that this cognitive

process probably saturated a factor influencing performance in grammatical tests and was very likely involved in solving tasks incorporated in ***cloze test***.

On the whole, it can be said that generalisation plays a significant part in v-factor (verbal factor) (**Hrabal**, **1973**); and, thus, influences the level of volubility.

4.2.5 THOUGHT COMPLETION VERSUS CLOZE TEST

A correlation r = 0.27 was found between ***cloze test*** and ***thought completion***, which explains approximately 7% of the variance of ***cloze test***. The confidence interval in this case ranged from r = 0.11 to 0.43. This test, according to **Hrabal** (**1973**), measures sense of reality, verbal intelligence, practical thinking, judgement formation, independence of thinking and, partly, memory as well as n-factor (numerical factor).

4.2.6 DIGIT SEQUENCE COMPLETION VERSUS CLOZE TEST

A correlation r = 0.2 was observed between ***cloze test*** and ***digit sequence completion***. This psychological subtest measured g-factor (general intelligence). Due to the low correlation coefficient and the partly disputable relevance of the respective correlation it can be assumed that general intelligence does not play an important role in the process of English grammar acquisition, although its influence cannot be completely discredited.

4.2.7 ANALOGY VERSUS CLOZE TEST

The variable ***analogy*** did not show a significant correlation with ***cloze test***. Therefore, it can be presumed that there is no correlation between the variables in question in reality. The subtest ***analogy*** asked the students to form word relations following a given pattern. According to **Hrabal** (**1973**), this subtest measures “feeling for language”, inductive verbal thinking, perception of words, empathy and conceptual thinking. As the correlation between ***cloze test*** and ***analogy*** in the population equals 0, the abovementioned cognitive processes might not play any significant role in the performance in the respective variable. However, a possible individual influence of some skills cannot be discredited.

4.2.8 SUMMARY

Apart from ***analogy***, all variables showed a significant correlation with ***cloze test*** (representing a grammatical test composed of all the other grammatical subtests involved in the research). According to the results, a significant role was played by cognitive processes such as memory, generalisation, creativity, combination ability, associative thinking, general feeling for languages, innate intelligence, judgement formation, independence of thinking and conceptual thinking.

4.3 Correlations between verb forms and intelligence subtests

Table 5: ***Correlations between verb forms and intelligence subtests***

Verb forms	N	r (X,Y)	r^2	t	p	Conf – 95%	Conf + 95%
Sentences	143	0,462409	0,213822	6,192627	0	0,32	0,58
Memory	143	0,37039	0,137189	4,7349	0,000005	0,22	0,5
Thoughts	143	0,327291	0,107119	4,112889	0,000066	0,17	0,47
Generalisation	143	0,295305	0,087205	3,670234	0,000343	0,14	0,44
Words	143	0,289956	0,084075	3,597596	0,000444	0,13	0,43
Digits	143	0,193002	0,03725	2,335682	0,020918	0,03	0,34
Analogy	143	0,157583	0,024832	1,894864	0,060158	0	0,31

Sentences – sentence formation; **Memory –** working memory; **Thoughts** – though completion; **Generalisation** –generalisation; **Words** – ford formation; **Digits** – digit sequence completion; **Analogy** – analogy; **N** – number of respondents; **r(X,Y)** – correlation between variables; **r2**- coefficient of determination; **t** – t-test; **p** – probability of error; **Conf -95%** and **Conf + 95%** – confidence interval

4.3.1 SENTENCE FORMATION VERSUS VERB FORMS

Similarly to ***cloze test***, the highest correlation was found between ***verb forms*** and ***sentence formation*** (r = 0.46). This variable can predict approximately 21% of performance in ***verb forms***. A value of real correlation in the population can be expected ranging from r = 0.32 to r = 0.58.

4.3.2WORKING MEMORY VERSUS VERB FORMS

According to **Table 5**, the second highest correlation was calculated between ***verb forms*** and ***working memory*** (r = 0.37). The variable ***working memory*** can explain approximately 14% of performance in ***verb forms***. A correlation in the population can be expected within the limit r = 0.22 to r = 0.5 with probability of 95%.

4.3.3THOUGHT COMPLETION VERSUS VERB FORMS

The next highest correlation was observed in the variable ***thought completion*** with the correlation r = 0.33, which can explain approximately 11% of the variance of ***verb forms***. A correlation in reality is highly probable, ranging from r = 0.17 to r = 0.47 with probability of 95%.

4.3.4 GENERALISATION VERSUS VERB FORMS

The fourth highest correlation was found between the variables ***generalisation*** and ***verb forms*** (r = 0.3). This variable can explain approximately 8.7% of the variance of ***verb forms***. A correlation very likely exists in reality and ranges between r = 0.14 and 0.44.

4.3.5 WORD FORMATION VERSUS VERB FORMS

From the table it can be seen that ***verb forms*** correlated r = 0.29 with the variable ***word formation***. The coefficient r^2 = 0.08 shows that the variable in question can explain approximately 8% of the variance of ***verb forms***. Although the coefficient is low, it is significant. The confidence interval ranges from r = 0.13 to r = 0.43, which indicates that the level of correlation in reality is lower; however, the interval is too broad to form a notion of a correlation in reality.

4.3.6 DIGIT SEQUENCE COMPLETION VERSUS VERB FORMS

The variable ***digit sequence completion*** with regard to ***verb forms*** correlated with a value of r = 0.19, which was lower than in the case of ***cloze test*** (r = 0.21). The correlation is not considerably high, but is still significant.

4.3.7 ANALOGY VERSUS VERB FORMS

From **Table 5** it is apparent that the variable ***analogy*** did not play an important role in ***verb forms***.

4.3.8 SUMMARY

From the results in the table it can be concluded that all variables, apart from ***analogy***, showed significant correlations with ***verb forms***. Based on the

recorded findings it must, however, be conceded that the variable ***digit sequence completion*** might not show a correlation different from 0 in reality.

4.4 Correlations between auxiliary verbs and intelligence subtests

Table 6: ***Correlations between auxiliary verbs and intelligence subtests***

Auxiliary verbs	N	r (X,Y)	r^2	t	p	Conf – 95%	Conf + 95%
Memory	143	0,449884	0,202396	5,981586	0	0,31	0,57
Sentences	143	0,415579	0,172706	5,425419	0	0,28	0,55
Thoughts	143	0,345817	0,119589	4,376358	0,000023	0,19	0,49
Words	143	0,334689	0,112017	4,217437	0,000044	0,17	0,47
Digits	143	0,253889	0,06446	3,116896	0,002215	0,09	0,4
Generalisation	143	0,222735	0,049611	2,712982	0,007499	0,06	0,37
Analogy	143	0,201002	0,040402	2,436488	0,016077	0,03	0,35

Memory – working memory; **Sentences** – sentence formation; **Thoughts** – though completion; **Words** – ford formation; **Digits** – digit sequence completion; **Generalisation** –generalisation; **Analogy** – analogy; **N** – number of respondents; **r(X,Y)** – correlation between variables; **r2**- coefficient of determination; **t** – t-test; **p** – probability of error; **Conf -95%** and **Conf + 95%** – confidence interval

4.4.1 WORKING MEMORY VERSUS AUXILIARY VERBS

Table 6 shows that ***sentence completion*** did not correlate highly with ***auxiliary verbs*** as in the case of ***cloze test*** and ***verb forms***. The highest correlation coefficient in this instance (r = 0.44) was observed in the variable ***working memory***. The correlation can explain approximately 20% of performance in ***auxiliary verbs***. A correlation can, almost certainly, be expected in the population ranging from r = 0.31 to r 0.57.

4.4.2 SENTENCE FORMATION VERSUS AUXILIARY VERBS

The correlation between variables ***sentence formation*** and ***auxiliary verbs*** (r = 0.42) was the second highest. The variable ***sentence formation*** can predict approximately 17% of performance in relation to ***auxiliary verbs***. The level of correlation in reality can be expected to range from r = 0.28 to r = 0.55 with probability of 95%.

4.4.3 THOUGHT COMPLETION VERSUS AUXILIARY VERBS

The variable ***thought completion*** correlated r = 0.35 with ***auxiliary verbs***, which represents a significant correlation level. A correlation can be expected in the population almost certainly. Based on the correlation coefficient, the variable ***thought completion*** predicts approximately 12% of the performance in ***auxiliary***

verbs. The confidence interval ranged from r = 0.19 to 0.49, which does not provide sufficient basis to make a clear-cut idea about a correlation level in reality.

4.4.4 WORD FORMATION VERSUS AUXILIARY VERBS

A correlation coefficient r = 0.33 was observed with regard to the variables ***auxiliary verbs*** and ***words formation***. Approximately 11% of the variance of ***auxiliary verbs*** can be explained. A correlation in the population can be expected with probability of 95%, ranging from r = 0.17 to r = 0.47.

4.4.5 DIGIT SEQUENCE COMPLETION VERSUS AUXILIARY VERBS

Surprisingly, ***digit sequence completion*** correlated fifth highest, above ***generalisation*** and ***analogy***. The correlation between ***auxiliary verbs*** and ***digit sequence completion*** reached r = 0.25 explaining 6.4% of the variance. The lower limit of confidence interval only reached r = 0.09, which is so low that it does not have any practical meaning. The upper limit reached r = 0.4, which represents a level of correlation high enough to have a practical meaning. Due to the broad limits of the confidence interval, no conclusions about the practical (or statistical) significance of the correlation coefficient can be formed.

4.4.6 GENERALISATION VERSUS AUXILIARY VERBS

Generalisation correlated with the variable ***auxiliary verbs*** r = 0.22, implying that only 0.5% of the variance of ***auxiliary verbs*** can be explained. The lower limit of confidence interval only reached r = 0.06. Such a low correlation has no practical significance. The upper limit (r = 0.37), though, has significance in practice. From the results given by the confidence interval, it can be concluded that a correlation can be expected in reality; however, it could be considerably low and, thus, might not have any practical meaning.

4.4.7 ANALOGY VERSUS AUXILIARY VERBS

Auxiliary verbs and ***analogy*** correlated r = 0.2, which is significant. The lower limit of the confidence interval showed a value of r = 0.03. The value is so low that it does not have any practical meaning. On the other hand, the upper limit reached r = 0.35, which could have some meaning in practice. It can be

concluded that despite statistical significance, the correlation between the variables in question probably does not play an important role in performance in ***auxiliary verbs***.

4.4.8 SUMMARY

To sum up, ***working memory*** plays the most important role in performance in ***auxiliary verbs***. The second highest correlation was observed in ***sentence formation***. According to statistics, g-factor may be of a certain importance in performance in ***auxiliary verbs***. The results shown in **Table 6** indicate that ***generalisation*** does not play a significant role in performance in ***auxiliary verbs*** and it is questionable whether there is any correlation in reality relating to the variable ***analogy***.

4.5 Correlations between modal verbs and intelligence subtests

Table 7: ***Correlations between modal verbs and intelligence subtests***

Modal verbs	N	r (X,Y)	r^2	t	P	Conf – 95%	Conf + 95%
Sentences	143	0,421137	0,177356	5,51349	0	0,28	0,55
Words	143	0,268544	0,072116	3,310384	0,001183	0,11	0,42
Memory	143	0,238283	0,056779	2,913371	0,004159	0,08	0,39
Thoughts	143	0,228543	0,052232	2,78758	0,006043	0,07	0,38
Analogy	143	0,146835	0,021561	1,762676	0,080122	-0,01	0,31
Digits	143	0,131704	0,017346	1,577644	0,116888	-0,03	0,29
Generalisation	143	0,089158	0,007949	1,06293	0,289631	-0,08	0,25

Sentences – sentence formation; **Words** – ford formation; **Memory –** working memory; **Thoughts** – though completion; **Analogy** – analogy; **Digits** – digit sequence completion; **Generalisation** –generalisation; **N** – number of respondents; **r(X,Y)** – correlation between variables; **r2**- coefficient of determination; **t** – t-test; **p** – probability of error; **Conf -95%** and **Conf + 95%** – confidence interval

4.5.1 SENTENCE FORMATION VERSUS MODAL VERBS

From **Table 7** it can be seen that the variable **sentence formation**, when compared to the other variables, showed considerably higher correlation with **modal verbs**. The correlation coefficient (r = 0.42) explains 18% of performance in **modal verbs**. The correlation can be perceived as significant. With the confidence interval ranging from r = 0.28 to r = 0.55, it is impossible to form an accurate idea about the value of the correlation in reality.

4.5.2 WORD FORMATION VERSUS MODAL VERBS

The correlation between **modal verbs** and **word formation** was the second highest (r = 0.27), which explains 7% of the performance in the variable **modal verbs**. It is a markedly lower figure than in **sentence formation**. The lower value of the confidence interval is too low to have any practical significance. The correlation interval ranges from r = 0.11 to r = 0.42. These limits indicate the possibility of a lower value of correlation in reality.

4.5.3 WORKING MEMORY VERSUS MODAL VERBS

The variable **working memory** correlated r = 0.24 with **modal verbs** and, thus, explains 5.7% of the variance within **modal verbs**. The lower (r = 0.08) and upper (r = 0.39) limits of the confidence interval, however, are considerably low and, therefore, have hardly any practical meaning.

4.5.4 THOUGHT COMPLETION VERSUS MODAL VERBS

The correlation coefficient between ***modal verbs*** and ***thought completion*** reached r = 0.23, which explains approximately 5.2% of the variance regarding ***modal verbs***. The lower value of the confidence interval is considerably low (r = 0.07) and does not have any practical meaning. The upper limit (r = 0.38) indicates that possible correlation in reality would be of a lower value.

4.5.5 ANALOGY, DIGIT SEQUENCE COMPLETION AND GENERALISATION VERSUS MODAL VERBS

The variables ***analogy***, ***digit sequence completion*** and ***generalisation*** correlated in descending order with ***modal verbs***. Here, the probabilities of error reached figures higher than 0.05 and the observed correlations were not significant. That is why no further attention will be paid to them.

4.5.6 SUMMARY

To sum up, a markedly higher value of correlation coefficient was observed in the case of ***sentence formation***. Lower correlations were found within the variables ***word formation***, ***working memory*** and ***thought completion***. No significant correlations with ***analogy***, ***digit sequence completion*** and ***generalisation*** were proven, which means that the abovementioned cognitive processes and general

intelligence are probably not involved in solving grammatical tasks focused on ***modal verbs***. On the other hand, based on the results, the previously mentioned cognitive processes and general intelligence cannot be rejected as factors with no influence on performance. The fact that the influence of the variables in question was not proven might be found in inadequate composition of tests of intelligence in relation to the grammatical skills in question.

4.6 Correlations between conditional clauses and intelligence subtests

Table 8: ***Correlations between conditional clauses and intelligence subtests***

Condition. cl.	N	r (X,Y)	r^2	t	p	Conf - 95%	Conf + 95%
Memory	143	0,241236	0,058195	2,951692	0,003703	0,08	0,39
Sentences	143	0,178129	0,03173	2,149543	0,033298	0,02	0,33
Words	143	0,158339	0,025071	1,904199	0,058921	0	0,23
Digits	143	0,119368	0,014249	1,427618	0,155613	-0,05	0,28
Thoughts	143	0,10559	0,011149	1,260864	0,20944	-0,06	0,27
Generalisation	143	0,077935	0,006074	0,928254	0,354862	-0,09	0,24
Analogy	143	-0,00425	0,000018	-0,05046	0,959828	-0,16	0,16

Memory – working memory; **Sentences** – sentence formation; **Words** – ford formation; **Digits** – digit sequence completion; **Thoughts** – though completion; **Generalisation** –generalisation; **Analogy** – analogy; **N** – number of respondents; **r(X,Y)** – correlation between variables; **r2**- coefficient of determination; **t** – t-test; **p** – probability of error; **Conf -95%** and **Conf + 95%** – confidence interval

4.6.1 WORKING MEMORY VERSUS CONDITIONAL CLAUSES

The variable **conditional clauses** correlated r = 0.24 with **working memory** and explained 5.8% of the variance. Although the correlation is rather low, it can be perceived as significant, implying that a certain level of correlation can also be expected in reality. Due to the low levels of the confidence interval (r = 0.08 and r = 0.38), a correlation value in reality is of a smaller value, and might be of no practical importance.

4.6.2 SENTENCE FORMATION VERSUS CONDITIONAL CLAUSES

A correlation of r = 0.18 was observed between the variables ***conditional clauses*** and ***sentence formation***. It explains only 3% of performance in the variables in question. The lower value of the confidence interval reached r = 0.02, which, for practical use, is completely insignificant. The upper value r = 0.33

indicates a low level of correlation in reality. The correlation found in reality might be truly insignificant.

4.6.3 WORD FORMATION, DIGIT SEQUENCE COMPLETION, THOUGHT COMPLETION, GENERALISATION AND ANALOGY VERSUS CONDITIONAL CLAUSES

Regarding correlation with ***conditional clauses***, the following variables were ranked in descending order: ***word formation, digit sequence completion, thought completion, generalisation*** and ***analogy***. As the observed correlations lack significance, no further attention will be paid to them.

4.6.4 SUMMARY

From the results shown in **Table 8** it can be concluded that, according to the calculations, the only correlation that could also be expected in reality was observed with the variable ***working memory***. Due to the given distribution of data, the significance of ***sentence formation*** is highly questionable and the other variables showed no significant correlations. On the other hand, the involvement of certain cognitive processes in the variables cannot be dismissed as unimportant. The low levels of correlation with no statistical significance could have been generated due to inadequate composition of the intelligence tests in connection with the observed grammatical skills focused on ***conditional clauses***.

4.7 Correlations between passive voice and intelligence subtests

Table 9: ***Correlations between passive voice and intelligence subtests***

Passive voice	N	r (X,Y)	r^2	t	p	Conf - 95%	Conf + 95%
Sentences	143	0,374307	0,140106	4,793082	0,000004	0,22	0,5
Thoughts	143	0,324915	0,10557	4,079488	0,000075	0,16	0,46
Memory	143	0,26107	0,068158	3,211408	0,001636	0,1	0,41
Digits	143	0,241038	0,058099	2,949118	0,003732	0,08	0,39
Words	143	0,232117	0,053878	2,833627	0,005278	0,07	0,38
Generalisation	143	0,220191	0,048484	2,680405	0,00823	0,06	0,37
Analogy	143	0,150642	0,022693	1,809423	0,072515	-0,01	0,31

Sentences – sentence formation; **Thoughts** – though completion; **Memory –** working memory; **Digits** – digit sequence completion; **Words** – ford formation; **Generalisation** –generalisation; **Analogy** – analogy; **N** – number of respondents; **r(X,Y)** – correlation between variables; **r2**- coefficient of determination; **t** – t-test; **p** – probability of error; **Conf -95%** and **Conf + 95%** – confidence interval

4.7.1 SENTENCE FORMATION VERSUS PASSIVE VOICE

As seen in **Table 9, *passive voice*** correlated with ***sentence formation*** r = 0.37 with 14% of the variance explained. The observed confidence interval was rather broad (r = 0.22; r = 0.5); and, therefore, indicates that a real correlation with probability of 95% would only be of a low value.

4.7.2 THOUGHT COMPLETION VERSUS PASSIVE VOICE

The variable ***thought completion*** correlated with ***passive voice*** r = 0.32 with 10% of the variance explained. As implied by the findings, a certain level of correlation can also be expected in reality. The confidence interval ranged from r = 0.16 to r = 0.46. Due to the level of the lower value, though, the correlation might not have any practical meaning.

4.7.3 WORKING MEMORY VERSUS PASSIVE VOICE

The variable ***working memory*** correlated with ***passive voice*** r = 0.26. Although the correlation is low, the value is significant. The calculated correlation coefficient explains 6.8% of the variance and its real value in the population ranges from r = 0.1 to r = 0.41 with probability of 95%. The confidence interval is rather broad and, again, the lower limit did not reach a high enough value. That is why the practical importance of the real correlation is questionable.

4.7.4 DIGIT SEQUENCE COMPLETION VERSUS PASSIVE VOICE

The correlation value between ***digit sequence completion*** and ***passive voice*** reached r = 0.24 with 5.8% of the variance explained. The lower value of the confidence interval only reached r = 0.08, which is why a correlation in reality with practical significance might not exist. The upper limit r = 0.39 implies that a correlation value in the population is low.

4.7.5 WORD FORMATION VERSUS PASSIVE VOICE

According to the research data, a correlation r = 0.23 was observed between the variables ***word formation*** and ***passive voice*** with 5.4% of the variance explained. Since the lower limit of the confidence interval only reached r = 0.07, a real correlation need not have any practical meaning. The upper limit r = 0.38 indicates that the expected level of correlation in the population might be low.

4.7.6 GENERALISATION VERSUS PASSIVE VOICE

The calculated correlation within the variables ***passive voice*** and ***generalisation*** reached a value r = 0.22 with 4.8% of the variance explained. Although the value is lower than 5%; there is a possibility that a real correlation in the population exists with probability of 95%. The lower limit of the confidence interval only reached a very low figure, which is why the real value of correlation need not have any practical importance. The upper limit indicates that a lower value of correlation can be expected in reality.

4.7.7 ANALOGY VERSUS PASSIVE VOICE

No further attention will be paid to the relationship between ***analogy*** and ***passive voice***, since no significant correlation was observed between these variables.

4.7.8 SUMMARY

From the results reflected in the statistics it can be concluded that, in comparison with ***conditional clauses*** and ***modal verbs***, ***passive voice*** correlated higher with the variables aimed at intelligence. Lower correlations were observed with ***verb forms, auxiliary verbs*** and ***cloze test***. Apart from ***analogy***, all variables showed significant correlations. ***Sentence formation*** and ***thought completion***, however, correlated highly enough to be accepted as having practical importance in reality.

4.8 Correlations between countable/uncountable nouns and intelligence subtests

Table 10: ***Correlations between countable/uncountable nouns and intelligence subtests***

(Un-)Countable	N	r (X,Y)	r^2	t	p	Conf – 95%	Conf + 95%
Thoughts	143	0,342669	0,117422	4,331197	0,000028	0,18	0,48
Memory	143	0,30744	0,094519	3,83646	0,000188	0,15	0,45
Words	143	0,273654	0,074887	3,378427	0,000943	0,11	0,42
Digits	143	0,268069	0,071861	3,304072	0,001208	0,11	0,42
Sentences	143	0,254224	0,06463	3,121286	0,002185	0,09	0,4
Generalisation	143	0,164151	0,026946	1,975991	0,050108	0	0,31
Analogy	143	0,127557	0,016271	1,527125	0,12897	-0,04	0,29

Thoughts – though completion; **Memory –** working memory; **Words** – ford formation; **Digits** – digit sequence completion; **Sentences** – sentence formation; **Generalisation** –generalisation; **Analogy** – analogy; **N** – number of respondents; **r(X,Y)** – correlation between variables; **r2**- coefficient of determination; **t** – t-test; **p** – probability of error; **Conf -95%** and **Conf + 95%** – confidence interval

4.8.1 THOUGHT COMPLETION VERSUS COUNTABLE/UNCOUNTABLE NOUNS

The highest calculated correlation was observed between ***countable/uncountable nouns*** and ***thought completion*** (r = 0.34) with 11.7% of the variance explained. In spite of the significance of the correlation, the lower level of the confidence interval reached r = 0.18, which indicates that a real correlation might not have any practical importance. Since the upper limit of the confidence interval reached r = 0.48, correlation in the population can be of almost medium value with probability of 95%. Due to the confidence interval limits, a clear idea about the real value of correlation cannot be formed.

4.8.2 WORKING MEMORY VERSUS COUNTABLE/UNCOUNTABLE NOUNS

The second highest correlation was observed between the variables ***working memory*** and ***countable/uncountable nouns*** (r = 0.3), which explains 9.5% of the variance. The confidence interval ranges from r = 0.15 to r = 0.45, which does not provide sufficient basis to form an accurate idea of a real correlation.

4.8.3 WORD FORMATION VERSUS COUNTABLE/UNCOUNTABLE NOUNS

A correlation r = 0.27 was observed between the variables ***word formation*** and ***countable/uncountable nouns***, which can explain 7.4% of the variance. With the given range of the confidence interval (r = 0.11; r = 0.42), a precise notion about the practical significance of the correlation cannot be formed.

4.8.4 DIGIT SEQUENCE COMPLETION VERSUS COUNTABLE/ UNCOUNTABLE NOUNS

Almost the same value of correlation was found between the variables ***countable/uncountable nouns*** and ***digit sequence completion***; therefore, the same can be said about this variable.

4.8.5 SENTENCE FORMATION VERSUS COUNTABLE/UNCOUNTABLE NOUNS

Remarkably, the variable ***sentence formation*** was the fifth highest, the coefficient value having only reached r = 0.16, which merely explained 2.7% of the variance. The lower limit of the confidence interval (r = 0.09) indicates that

the correlation might have no practical meaning. On the other hand, the upper limit (r = 0.4) shows a correlation possibly of considerable significance in reality.

4.8.6 GENERALISATION AND ANALOGY VERSUS COUNTABLE/ UNCOUNTABLE NOUNS

Generalisation and ***analogy*** did not correlate significantly with the variable ***countable/uncountable nouns***.

4.8.7 SUMMARY

To sum up, significant correlations were discovered within the variables ***thought completion, working memory, word formation, digit sequence completion*** and ***sentence formation*** (in descending order). Since the levels of the lower confidence interval limit did not reach high enough values, the correlations might not be of practical importance.

4.9 Correlations between articles and intelligence subtests

Table 11: ***Correlations between articles and intelligence subtests***

Gram. articles	N	r (X,Y)	r^2	t	p	Conf - 95%	Conf + 95%
Digits	143	0,282661	0,079897	3,499108	0,000625	0,12	0,43
Words	143	0,239325	0,057276	2,926879	0,003993	0,08	0,39
Generalisation	143	0,235044	0,055246	2,871433	0,004717	0,08	0,39
Memory	143	0,220011	0,048405	2,678101	0,008284	0,06	0,37
Sentences	143	0,218935	0,047933	2,664351	0,008613	0,06	0,37
Thoughts	143	0,215924	0,046623	2,625902	0,009596	0,06	0,37
Analogy	143	0,054568	0,002978	0,648931	0,517439	-0,12	0,21

Digits – digit sequence completion; **Words** – ford formation; **Generalisation** –generalisation; **Memory –** working memory; **Sentences** – sentence formation; **Thoughts** – though completion; **Analogy** – analogy; **N** – number of respondents; **r(X,Y)** – correlation between variables; **r2**- coefficient of determination; **t** – t-test; **p** – probability of error; **Conf -95%** and **Conf + 95%** – confidence interval

4.9.1 DIGIT SEQUENCE COMPLETION VERSUS ARTICLES

Surprisingly, the highest correlation was observed between the variables ***digit sequence completion*** and ***articles***. The correlation value is not high (r = 0.28), with only 8% of the variance explained. The lower limit of the confidence interval, however, indicates that a real correlation might not be of sufficient practical importance. The upper limit, though, implies that a real correlation could reach

almost a moderate value. The results indicate that g-factor plays a certain role in the use of articles.

4.9.2 WORD FORMATION VERSUS ARTICLES

The correlation level between the variables ***word formation*** and ***articles*** achieved the second highest value (r = 0.24) with only 5.7% of the variance explained. The lower limit of the confidence interval (r = 0.08) provides insufficient basis for the real correlation to be of practical use. The upper limit (r = 0.39) indicates a lower value of a real correlation.

4.9.3 GENERALISATION VERSUS ARTICLES

A correlation r = 0.235 was observed between the variables ***articles*** and ***generalisation***, which predicts 5.5% of the performance in the variable ***articles***. As the lower limit indicates (r = 0.08), the correlation might lack any practical importance. The upper limit implies that an eventual correlation would be of a lower value.

4.9.4 WORKING MEMORY VERSUS ARTICLES

The fourth highest correlation (r = 0.22) was found between ***articles*** and ***working memory***. The calculated correlation explains approximately 4.8% of the variance. Taking the low values of the confidence interval (r = 0.06; r = 0.37) into account, it can be presumed that a correlation in reality would be of a value too low to have practical importance.

4.9.5 SENTENCE FORMATION AND THOUGHT COMPLETION VERSUS ARTICLES

The variables ***sentence formation*** and ***thought completion*** reached approximately the same correlation levels as the variable ***working memory***, which is why the same practical application can be expected in this case.

4.9.6 ANALOGY VERSUS ARTICLES

The variable ***analogy*** did not correlate significantly with the variable ***articles***; therefore, the correlation can be only accidental.

4.9.7 SUMMARY

The results reflected in **Table 11** show that correlations, although significant, were of low values and possibly lack practical significance. The variable ***analogy*** did not reach a significant value of correlation.

4.10 Correlations between prepositions and intelligence subtests

Table 12: ***Correlations between prepositions and intelligence subtests***

Prepositions	N	r (X,Y)	r^2	t	p	Conf - 95%	Conf + 95%
Thoughts	143	0,383034	0,146715	4,923795	0,000002	0,23	0,51
Words	143	0,380663	0,144904	4,888134	0,000003	0,23	0,51
Sentences	143	0,371862	0,138281	4,756733	0,000005	0,22	0,5
Memory	143	0,319132	0,101845	3,998571	0,000102	0,16	0,46
Digits	143	0,226868	0,051469	2,766025	0,006435	0,09	0,4
Analogy	143	0,216055	0,04668	2,627571	0,009552	0,06	0,37
Generalisation	143	0,174483	0,030444	2,10415	0,03714	0,01	0,32

Thoughts – though completion; **Words** – ford formation; **Sentences** – sentence formation; **Memory –** working memory; **Digits** – digit sequence completion; **Analogy** – analogy; **Generalisation** –generalisation; **N** – number of respondents; **r(X,Y)** – correlation between variables; **r2**- coefficient of determination; **t** – t-test; **p** – probability of error; **Conf -95%** and **Conf + 95%** – confidence interval

4.10.1 THOUGHT COMPLETION, WORD FORMATION AND SENTENCE FORMATION VERSUS PREPOSITIONS

Correlations reaching approximately r = 0.38 were observed in the case of ***thought completion, word formation and sentence formation*** in relation to the grammatical subtest aimed at ***prepositions***. The correlation explains 15% of the variable in question. The limit of the confidence interval shows that a real correlation could vary from r = 0.23 to r = 0. 51 with probability of 95%.

4.10.2 WORKING MEMORY VERSUS PREPOSITIONS

A correlation of r = 0.32 was observed between ***prepositions*** and ***working memory***. It explains 10% of the performance in ***prepositions***. The upper limit of the confidence interval (r = 0.46) shows that an eventual correlation could reach an almost medium value.

4.10.3 DIGIT SEQUENCE COMPLETION AND ANALOGY VERSUS PREPOSITIONS

Similar values of correlations (r = 0.22 and r = 0.21) were observed between ***digit sequence completion*** and ***analogy*** in relation to the variable

prepositions, which explains about 5% of their performance. The lower limits of both confidence intervals reached figures lower than r = 0.1. Consequently, the correlations might be of no practical importance. The upper limits (r = 0.4 and r = 0.37) do not exclude the possibility of correlation with practical significance.

4.10.4 GENERALISATION VERSUS PREPOSITIONS

A very low correlation r = 0.17 was found between the variables ***generalisation*** and ***prepositions***. As the confidence interval ranged from r = 0.01 to 0.32, any practical significance of the correlation is questionable but cannot be excluded.

4.10.5 SUMMARY

To sum up, all the observed correlations in relation to the variable ***prepositions*** were significant; however, only those with the variables ***thought completion, word formation*** and ***sentence formation*** can be considered real correlations with practical significance. In the case of the other correlations, practical importance can be questionable.

4.11 An overview of the highest correlations

Table 13 below provides an overview of all correlations between grammatical subtests and their intelligence counterparts.

Table 13: ***An overview of all correlations between grammatical and intelligence subtests***

CT	r	VF	r	AV	r	MV	r	CC	r	PV	r	C/U	r	A	r	P	r
SF	0,43	**SF**	0,46	**WM**	0,45	**SF**	0,42	**WM**	0,24	**SF**	0,37	**TC**	0,34	**DS**	0,28	**TC**	0,38
WM	0,39	**WM**	0,37	**SF**	0,42	**WF**	0,27	**SF**	0,18	**TC**	0,32	**WM**	0,31	**WF**	0,24	**WF**	0,38
WF	0,32	**TC**	0,33	**TC**	0,35	**WM**	0,24	**WF**	0,16	**WM**	0,26	**WF**	0,27	**G**	0,24	**SF**	0,37
G	0,31	**G**	0,30	**WF**	0,33	**TC**	0,23	**DS**	0,12	**DS**	0,24	**DS**	0,27	**WM**	0,22	**WM**	0,32
TC	0,27	**WF**	0,29	**DS**	0,25	**A**	0,15	**TC**	0,11	**WF**	0,23	**SF**	0,25	**SF**	0,22	**DS**	0,23
DS	0,21	**DS**	0,19	**G**	0,22	**DS**	0,13	**G**	0,08	**G**	0,22	**G**	0,16	**TC**	0,22	**A**	0,22
A	0,13	**A**	0,16	**A**	0,20	**G**	0,09	**A**	0,00	**A**	0,15	**A**	0,13	**A**	0,05	**G**	0,17

CT – cloze test; **VF** – verb forms; **AV** – auxiliary verbs; **MV**. – modal verbs; **CC** – conditional clauses; **PV** – passive voice; **C/U** – countable/uncountable nouns; **A** – articles; **P** – prepositions; **SF** – sentence formation; **WF** – ford formation; **DS** – digit sequence completion; **G** –generalisation; **TC** – though completion; **A** – analogy; **WM –** working memory; **r** – correlation coefficient

Table 13 shows that ***auxiliary verbs***, ***cloze test***, ***verb forms*** and ***prepositions*** reached the highest correlations with subtests measuring cognitive processes, all

having reached figures higher than r = 0.3. Out of them, only the variable ***prepositions*** did not correlate higher than r = 0.4. The lowest correlation was observed in the case of ***conditional clauses***. On the whole, the least significant influence on performance in grammar was discovered in the variable ***analogy***.

4.11.1 THE HIGHEST CORRELATIONS WITH VERB FORMS

The fact that the four highest correlations with ***verb forms*** were observed in relation to ***sentence formation*** (r = 0.46), ***working memory*** (r = 0.37), ***thought completion*** (r = 0.33) and ***generalisation*** (r = 0.3) implies that the main cognitive processes influencing performance in ***verb forms*** are creativity, associative thinking, combination ability, "feeling for language", conceptual thinking, memory, practical thinking, judgement formation, sense of reality, independence of thinking and generalisation.

4.11.2 THE HIGHEST CORRELATIONS WITH AUXILIARY VERBS

The four highest correlations in relation to ***auxiliary verbs*** were with ***working memory*** (r = 0.45), ***sentence formation*** (r = 0.42), ***thought completion*** (r = 0. 35) and ***word formation*** (r = 0.33). Therefore, the primary cognitive processes influencing performance in the grammatical subtests are memory, creativity, associative thinking, combination ability, "feeling for language", conceptual thinking, practical thinking, judgement formation, sense of reality and independence of thinking.

4.11.3 THE HIGHEST CORRELATIONS WITH MODAL VERBS

As far as the variable ***modal verbs*** is concerned, the highest correlations were found with ***sentence formation*** (r = 0.42), ***word formation*** (r = 0.27), ***working memory*** (r = 0.24) and ***thought completion*** (r = 0.23). This implies a significant influence of creativity, associative thinking, combination ability, "feeling for language" and conceptual thinking as the cognitive processes primarily involved in solving the given grammatical tasks.

4.11.4 THE HIGHEST CORRELATIONS WITH CONDITIONAL CLAUSES

The variable ***conditional clauses*** showed relatively low correlations with the tests measuring cognitive processes. According to the results, the most important skill involved in ***conditional clauses*** is ***working memory*** (r = 0.24).

4.11.5 THE HIGHEST CORRELATIONS WITH PASSIVE VOICE

The variable ***passive voice*** correlated highest with the subtests ***sentence formation*** (r = 0.37), ***thoughts completion*** (r = 0.32) ***working memory*** (r = 0.26) and ***digit sequence completion*** (r = 0.24). However, the first two variables reached considerably higher values; therefore, the cognitive processes primarily involved are creativity, associative thinking, combination ability, "feeling for language", conceptual thinking, practical thinking, judgement formation, sense of reality, independence of thinking and, possibly, memory and general intelligence.

4.11.6 THE HIGHEST CORRELATIONS WITH COUNTABLE/UNCOUNTABLE NOUNS

The highest correlations with the variable ***countable/uncountable nouns*** were observed with the subtests ***thought completion*** (r = 0.34), ***working memory*** (r = 0.31), ***word formation*** (r = 0.27) and ***digit sequence completion*** (r = 0.27). It can be expected that the main influence comes from the following cognitive processes: practical thinking, judgement formation, sense of reality, independence of thinking, memory, and, possibly, associative thinking, combination skills, creativity and general intelligence.

4.11.7 THE HIGHEST CORRELATIONS WITH ARTICLES

The variable ***articles*** showed highest correlations with ***digit sequence completion*** (r = 0.28), ***word formation*** (r = 0.24), ***generalisation*** (r = 0.24) and ***working memory*** (r = 0.22). Since the correlations are rather low, the possible influence of general intelligence along with associative thinking, combination skills, creativity, generalisation and memory can be predicted.

4.11.8 THE HIGHEST CORRELATIONS WITH PREPOSITIONS

The highest correlations with ***prepositions*** were observed in relation to the subtests ***thought completion*** (r = 0.38), ***word formation*** (r = 0.38), ***sentence***

formation (r = 0.37) and ***working memory*** (r = 0.32). Therefore, the main influence lies in such processes as practical thinking, judgement formation, sense of reality, independence of thinking, associative thinking, combination skills, creativity, "feeling for language", conceptual thinking and memory.

4.11.9 THE HIGHEST CORRELATIONS WITH CLOZE TEST

The variable ***cloze test*** incorporated all types of grammatical tasks involved in the other grammatical subtests. Therefore, the order of correlations in relation to the subtests measuring cognitive processes showed the most important variables influencing overall performance in grammar to be: ***sentence formation*** (r = 0.43), ***working memory*** (r = 0. 39), ***word formation*** (r = 0.32), ***generalisation*** (r = 0.31) and ***thought completion*** (r = 0.27). This implies that the most important cognitive processes for English grammar acquisition are creativity, associative thinking, combination ability, "feeling for language", conceptual thinking, memory and generalisation. A significant influence can also be expected to come from practical thinking, judgement formation, sense of reality and independence of thinking.

4.12 Summary

Auxiliary verbs, ***cloze test***, ***verb forms*** and ***prepositions*** reached the highest correlations with subtests measuring cognitive processes.

The highest correlations with ***verb forms*** were observed in relation to ***sentence formation***, ***working memory***, ***thought completion*** and ***generalisation***. This implies that the main cognitive processes influencing performance in ***verb forms*** are creativity, associative thinking, combination ability, "feeling for language", conceptual thinking, memory, practical thinking, judgement formation, sense of reality, independence of thinking and generalisation.

The correlations in relation to ***auxiliary verbs*** were with ***working memory***, ***sentence formation***, ***thought completion*** and ***word formation***. Therefore, the primary cognitive processes influencing performance in the grammatical subtests are memory, creativity, associative thinking, combination ability, "feeling for language", conceptual thinking, practical thinking, judgement formation, sense of reality and independence of thinking.

As far as the variable ***modal verbs*** is concerned, the highest correlations were found with ***sentence formation***, ***word formation***, ***working memory*** and ***thought completion***. This implies a significant influence of creativity, associative thinking, combination ability, "feeling for language" and conceptual thinking as the cognitive processes primarily involved in solving the given grammatical tasks.

The variable ***conditional clauses*** showed relatively low correlations with the tests measuring cognitive processes. According to the results, the most important skill involved in ***conditional clauses*** is ***working memory***.

The variable ***passive voice*** correlated highest with ***sentence formation*** and ***thoughts completion.*** Therefore, the cognitive processes primarily involved are creativity, associative thinking, combination ability, "feeling for language", conceptual thinking, practical thinking, judgement formation, sense of reality, independence of thinking and, possibly, memory and general intelligence.

The highest correlations with the variable ***countable/uncountable nouns*** were observed with the subtests ***thought completion***, ***working memory***, ***word formation*** and ***digit sequence completion***. It can be expected that the main influence comes from the following cognitive processes: practical thinking, judgement formation, sense of reality, independence of thinking, memory, and, possibly, associative thinking, combination skills, creativity and general intelligence.

The variable ***articles*** showed highest correlations with ***digit sequence completion***, ***word formation***, ***generalisation*** and ***working memory***. Since the correlations are rather low, the possible influence of general intelligence along with associative thinking, combination skills, creativity, generalisation and memory can be predicted.

The highest correlations with ***prepositions*** were observed in relation to the subtests ***thought completion***, ***word formation***, ***sentence formation*** and ***working memory***. Thus, the main influence lies in such processes as practical thinking, judgement formation, sense of reality, independence of thinking, associative thinking, combination skills, creativity, "feeling for language", conceptual thinking and memory.

As far as correlations with the ***cloze test*** are concerned, the most significant connection was observed with the following variables: ***verb forms***, ***auxiliary verbs***, ***passive voice*** and ***prepositions***. This is not surprising, as the above variables were incorporated in the ***cloze test***. Lower correlations were observed within ***countable/uncountable nouns*** in connection to the grammatical subtests aimed at ***modal verbs*** and ***articles***. Low correlations were observed within the variable ***conditional clauses***. These seem to be relatively unconnected to the other grammatical variables.

Based on the above, the involvement of the same cognitive processes in all the variables in question can be presumed.