

3 RESEARCH RESULTS

3.1 General characteristics

As mentioned above, before the actual statistical methods were applied to the research data, a **test of normal distribution** was carried out, the results of which are presented in **Table 2** below. The test was applied to the target group in order to find out this characteristic.

Table 2: Results of tests of normal distribution applied to the research group

	N	max D	K-S	Lilliefors	W	p
			p	p		
Age	143	0,503835	p < ,01	p < ,01	0,454417	0
Siblings	143	0,251295	p < ,01	p < ,01	0,84546	0
Father	143	0,136521	p < ,01	p < ,01	0,935547	0,000004
Mother	143	0,134639	p < ,05	p < ,01	0,931342	0,000002
Studies	143	0,368937	p < ,01	p < ,01	0,707713	0
Cloze test	143	0,063032	p > .20	p < ,20	0,986843	0,192027
Verb forms	143	0,068541	p > .20	p < ,10	0,983433	0,082013
Auxiliaries	143	0,113463	p < ,10	p < ,01	0,945286	0,000021
Modals	143	0,127171	p < ,05	p < ,01	0,962353	0,000581
Conditionals	143	0,10888	p < ,10	p < ,01	0,973738	0,007476
Passive	143	0,116585	p < ,05	p < ,01	0,944822	0,000002
(Un-)Countable	143	0,116308	p < ,05	p < ,01	0,960451	0,000391
Articles	143	0,102647	p < ,10	p < ,01	0,976823	0,015742
Prepositions	143	0,136655	p < ,01	p < ,01	0,944841	0,000002

N – number, **max D** – D value of the Kolmogorov–Smirnov test, **K-S** – value of probability that the Kolmogorov–Smirnov test is statistically insignificant, calculated with standard deviation, **Lilliefors** – probability that the Kolmogorov–Smirnov test is statistically insignificant, calculated with estimated (unknown) standard deviation, **W** – value of the Shapir-Wilkov test, **p** – probability that the W value is statistically insignificant

The figures in bold do not show normal distribution, which, for this research, means that although all statistical methods are used appropriately, a certain level of inaccuracy in the results should be expected. All observed factors (including family background), dependent and independent variables are included.

In **Table 3**, the correlations found among all grammatical variables observed in the research are presented.

Table 3: General overview of cross-correlations among all grammatical variables

	CT	AVF	AV	MV	CC	PV	C/U	GA	P
CT	1	0,77	0,73	0,65	0,27	0,67	0,51	0,54	0,72
AVF	0,77	1	0,73	0,61	0,32	0,74	0,57	0,58	0,67
AV	0,73	0,73	1	0,62	0,3	0,7	0,63	0,46	0,71
MV	0,65	0,61	0,62	1	0,29	0,56	0,35	0,5	0,67
CC	0,27	0,32	0,3	0,29	1	0,27	0,25	0,25	0,45
PV	0,67	0,74	0,7	0,56	0,27	1	0,6	0,59	0,69
C/U	0,51	0,57	0,63	0,35	0,25	0,6	1	0,5	0,47
GA	0,54	0,58	0,46	0,5	0,25	0,59	0,5	1	0,5
P	0,72	0,67	0,71	0,67	0,45	0,69	0,47	0,5	1

CT – cloze test; AVF – active verb forms; AV – auxiliary verbs; MV – modal verbs; CC – conditional clauses; PV – passive voice; C/U – countable/uncountable nouns; GA – grammatical articles; P – prepositions

All correlations presented in **Table 3** are statistically significant. By way of explanation, the strongest possible correlation (1) is observed when a variable is related to itself. To explain the general overview using an example, it could be said that, looking at the coefficients, a stronger relationship (correlation) exists between **cloze test** and **active verb forms** than between **cloze test** and **conditional clauses**.

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3.2 Correlations between Active Verb Forms and other aspects of grammar

Table 4: Correlations between active verb forms and other aspects of grammar

Verb forms	N	r (X,Y)	r ²	t	p	Conf – 95%	Conf + 95%
Cloze test	143	0,769186	0,591647	14,293	0	0,68	0,82
Auxiliaries	143	0,726237	0,527421	12,54443	0	0,64	0,79
Modals	143	0,608379	0,370125	9,10241	0	0,48	0,69
Conditionals	143	0,316763	0,100339	3,96556	0,000116	0,15	0,45
Passive	143	0,738488	0,545364	13,00533	0	0,64	0,8
Countable	143	0,569547	0,324383	8,22789	0	0,43	0,66
Articles	143	0,580927	0,337476	8,47481	0	0,46	0,68
Prepositions	143	0,671803	0,45132	10,76941	0	0,57	0,75

N – number of respondents; r – correlation coefficient; r (X,Y) – correlation between variables; r² – the coefficient as a percentage (multiplied by 100), used to predict how many people in the population (who fall between the parameters of the test group) will perform in the same way as the test subjects of the research; t - t-test; p – probability of error; **Conf-95%** and **Conf+95%** – the minimum and maximum limits of the interval, to which, with 95% probability, the coefficients can be applied within the general population.

In **Table 4**, correlations between **active verb forms** and all the other aspects of grammar involved in the research are presented.

Each of the following subchapters refers to a particular correlation comparing and contrasting the two respective variables.

3.2.1 Cloze test versus active verb forms

The highest correlation can be seen between **active verb forms** and **cloze test**, with $r = 0.77$. The fact that the tasks aimed at verb forms were incorporated in **cloze test** plays, naturally, an important role. The coefficient can be expressed as a percentage, using r^2 , giving approximately 59%. Using these results, it is possible to observe a strong relationship between performance in **active verb forms** and **cloze test**. It could be said that, according to the results in **cloze test**, performance in **active verb forms** can be successfully estimated up to 59%.

3.2.2 Auxiliary verbs versus active verb forms

In the variable **active verb forms**, a high also correlation ($r = 0.73$) with the variable **auxiliary verbs** was also observed. As auxiliary verbs are an essential part of correct combination of tense-aspect forms, this correlation was to be expected. The variable **active verb forms** can be used to explain almost 53% of **auxiliary verbs**. The confidence interval ranged from $r = 0.64$ to $r = 0.79$ (with probability of 95%), which represents a relatively narrow interval. Therefore, a high correlation can be predicted in the population.

3.2.3 Modal verbs versus active verb forms

As it is logical to state that **modal verbs**, being (by some grammarians) considered secondary auxiliary verbs, are closely related to primary auxiliary verbs necessary for the correct formation of **active verb forms**, a high correlation ($r = 0.61$) between these two variables was expected and, also, observed. In the subtest dealing with modal verbs, the respondents were asked to use these in various forms. The modal perfect form, in particular, requires a fair understanding of the system of English verb forms. As much as 37% of variance in the given variable can be explained on the basis of performance in the variable **active verb forms**. However, a lower percentage was observed in comparison to the previous correlations. Due to this fact, the confidence interval is broader; nevertheless, it is sufficient to show the intensity of its relation to the population.

3.2.4 Conditional clauses versus active verb forms

Active verb forms are involved in the use of **conditional clauses**. In spite of that, the correlation between these two variables reached an unexpectedly low figure ($r = 0.3$). This correlation represents the lowest figure among all variables in connection with **active verb forms**. It explains merely 10% of performance in the subtest aimed at conditional clauses, which is rather surprising, as knowledge and skill in the formation of tense-aspect combinations certainly represents a prerequisite in the correct formation of conditional clauses. Although the confidence interval, ranging from $r = 0.15$ to $r = 0.45$, implies a relatively low correlation in the population, the correlation shows the existence of a relationship between **active verb forms** and **conditional clauses** in the population.

3.2.5 Passive voice versus active verb forms

A high correlation of $r = 0.74$ between **active verb forms** and **passive voice** was calculated. Needless to say, correct usage of active verb forms is strongly interrelated with the forming of passive sentences. The variable **active verb forms** explains 55% of performance in the variable **passive voice**. A correlation in the population (with probability of 95%) can be expected between the values $r = 0.64$ and $r = 0.80$. Both values indicate a relatively high correlation, so it can be concluded that a high correlation between the variables in question can be predicted in reality.

3.2.6 Countable/uncountable nouns versus active verb forms

A surprisingly high correlation ($r = 0.57$) was found between the variables **active verb forms** and **countable/uncountable nouns**. Since hardly any interconnection between the correct use of *a/an* versus *some* as a representation of countability in nouns, and active verb forms can be seen, this correlation seems to be influenced by the same cognitive process(es). As much as 32% of the performance in the subtest testing the ability to discriminate between countable and uncountable nouns can be explained by the variable **active verb forms**, which represents one third of the overall performance in the subtest aimed at countability. The confidence interval, ranging between $r = 0.43$ and $r = 0.66$, shows that the correlation is significant in the population.

3.2.7 Grammatical articles versus active verb forms

The variable **grammatical articles** showed a high correlation ($r = 0.58$) with **active verb forms**, although hardly any logical connection between these two variables can be found. This suggests the influence of a common factor involved in performance in the respective variables. The variable **active verb forms** can explain 34% of performance of the variable **grammatical articles**, and vice versa. The lower limit of the confidence interval reached $r = 0.46$ and the upper limit equalled $r = 0.68$. From these values, a moderate level of correlation can be expected in the population.

3.2.8 Prepositions versus active verb forms

The variable **prepositions** shows a relatively high correlation ($r = 0.6$) with **active verb forms**, even though there is hardly any grammatical connection between the variables in question. Hence, the influence of a common factor involved in performance in the respective variables can be presumed. The factor is probably composed of the same or similar cognitive process(es) involved in solving the given tasks. The variables explained 45% of their variances, which is almost a half. The confidence interval lies between $r = 0.57$ and $r = 0.75$, which suggests a relatively high correlation between the variables in question in the population.

3.2.9 Summary

Since some pre-existing knowledge of active verb forms clearly influenced performance in a number of other subtests (**auxiliary verbs**, **conditional clauses**, **passive voice**, etc.), moderate to high levels of correlation between **active verb forms** and the other variables could be predicted. From the above results, it is also obvious that the variable **active verb forms** is closely interconnected with the other variables involved in the research. This suggests that those students who perform well in tasks involving active verb forms will also acquit themselves well in those dealing with auxiliary verbs, modal verbs and passive voice; however, they are also likely to perform satisfactorily when grammatical articles and prepositions are concerned. This implies that a certain part can also be played by a common factor conditioning cognitive processes necessary in solving the respective tasks.

3.3 Correlations between Auxiliary Verbs and other aspects of grammar

Similarly to the previous subchapter, relationships between respondents' scores in the subtest **auxiliary verbs** and other subtests were observed. **Table 5** shows the resulting correlations and other related characteristics.

Table 5: Correlations between auxiliary verbs and other aspects of grammar

Auxiliary verbs	N	r (X,Y)	r ²	T	p	Conf - 95%	Conf + 95%
Cloze test	143	0,732053	0,535901	12,75989	0	0,64	0,79
Active verb forms	143	0,726237	0,527421	12,54443	0	0,64	0,79
Modals	143	0,618563	0,38262	9,34796	0	0,51	0,71
Conditionals	143	0,299182	0,08951	3,72312	0,000284	0,14	0,44
Passive	143	0,70472	0,49663	11,79457	0	0,61	0,77
Countable	143	0,629121	0,395793	9,61061	0	0,52	0,72
Articles	143	0,463696	0,215014	6,21458	0	0,32	0,58
Prepositions	143	0,706277	0,498827	11,84653	0	0,62	0,78

N – number of respondents; r – correlation coefficient; r (X,Y) – correlation between variables; r² – the coefficient as a percentage (multiplied by 100), used to predict how many people in the population (who fall between the parameters of the test group) will perform in the same way as the test subjects of the research; t - t-test; p – probability of error; **Conf-95%** and **Conf+95%** – the minimum and maximum limits of the interval, to which, with 95% probability, the coefficients can be applied within the general population.

3.3.1 Cloze test versus auxiliary verbs

As could be expected, a high correlation ($r = 0.73$) was found between the variables **auxiliary verbs** and **cloze test**. The reason very probably lies in the fact that correct use of auxiliary verbs was required in **cloze test**. The variable **auxiliary verbs** explains 54% of variance in relation to the variable **cloze test**, and vice versa. The confidence interval ranges from $r = 0.64$ to $r = 0.79$ with probability of 95%. The confidence interval is quite narrow; thus, a high correlation in reality can be predicted.

3.3.2 Modal verbs versus auxiliary verbs

A relatively high correlation ($r = 0.62$) between the variables **auxiliary verbs** and **modal verbs** can be explained by respondents' knowledge and skill in using tense-aspect combinations, and its correct application in the tasks aimed at modal verbs as well as auxiliary verbs. Another explanation might lie in the fact that auxiliary and modal verbs are closely linked in the parts of speech classification – they are both auxiliary verbs (as mentioned above) and that similar operations are carried out when forming the grammatical constructions in question. The variable **auxiliary verbs** can predict 38% of performance in the variable **modal verbs**, and vice versa. The confidence interval varied from $r = 0.51$ to $r = 0.71$ and its limits were given with

probability of 95%. Because both limits represent a relatively high correlation, a significant relation can be expected between the variables in question.

3.3.3 Conditional clauses versus auxiliary verbs

Although the ability to form correct tense-aspect combinations was necessary to satisfactorily fulfil the tasks of the subtests on **conditional clauses** and **auxiliary verbs**, the correlation did not reflect the expected relationship, as the calculated coefficient between the variables in question only reached $r = 0.3$. This pair of variables explains only 9% of their variances. In spite of the low correlation coefficient, a certain correlation can be expected in reality with probability of 99.716%. The lower limit of the confidence interval, though, (reaching only $r = 0.14$) gives a less optimistic view, as it indicates that the correlation in the population can be very close to $r = 0$. The upper limit ($r = 0.44$), on the other hand, shows moderate correlation. Due to the broad span of the observed interval, it can only be stated that the real correlation lies in the limit of the confidence interval with probability of 95%.

3.3.4 Passive voice versus auxiliary verbs

Similarly to the previous relationships, active verb forms served as the linking element between the tasks aimed at **passive voice** and **auxiliary verbs**. That is why a high correlation coefficient ($r = 0.7$) could be expected. However, it is rather unlikely to expect that the 50% of the explained variable could be fully caused by similarity in forming grammatical structures. Therefore, as implied above, the influence of a common factor could be assumed. The probability that a certain relation between the respective variables exists in reality approaches 100%. The confidence interval, in this case, was given by a limit ranging from $r = 0.61$ to $r = 0.77$ with probability of 95%. The fact that the lower limit reached a relatively high figure and that the limits provided a narrow interval suggests a significant relationship in reality.

3.3.5 Countable/uncountable nouns versus auxiliary verbs

There was no reason to predict a significant relationship between **auxiliary verbs** and **countable/uncountable nouns**. The correlation, however, reached $r = 0.68$. Grammatically, these two variables do not have any logical connection. That is why the high correlation can very likely be explained by the same cognitive process(es). The variable **auxiliary verbs** explains almost 40% of performance in the subtest **countable/uncountable nouns**, and vice

versa. The percentage of the explained variable indicates the intensity of an intrinsic factor influencing the performance in these variables. The fact that the probability of correlation in the population approached 100% leaves little room for hesitation about the significance of correlation between these variables in reality. The confidence interval ranged from $r = 0.52$ to $r = 0.72$, which indicates a rather strong relationship.

3.3.6 Grammatical articles versus auxiliary verbs

A correlation $r = 0.46$ was calculated between the variables **auxiliary verbs** and **grammatical articles**. The fact that the above subtests, from a grammatical viewpoint, are rather detached must be taken into consideration. The variables, however, explain almost 22% of their variances, which represents one fifth of the total variance. Due to a missing grammatical connection between these variables, the influence of a common intrinsic factor can be expected. A relatively wide confidence interval was observed, the lower value reached $r = 0.32$ and the upper limit $r = 0.58$. Due to this fact, it is not possible to form an accurate idea of the level of the correlation in reality.

3.3.7 Prepositions versus auxiliary verbs

An unexpectedly high correlation ($r = 0.71$) was observed between the variables **auxiliary verbs** and **prepositions**. Having explained almost 50% of the variances with no real connection between the grammatical structures, a considerably strong influence of a common intrinsic factor can be expected. A narrow limit (from $r = 0.62$ to $r = 0.78$) of the confidence interval was observed, which provides good ground to predict the level of the relationship between the variables in question in reality. As reflected in the limits of the confidence interval, a relatively high correlation in the population can be expected, for the lower limit of the confidence interval represents a substantially high correlation.

3.3.8 Summary

From the results, it can be concluded that the variable **auxiliary verbs** has a close relationship with the other variables (especially **active verb forms**, **modal verbs** and **passive voice**). This means that those learners who perform well in tasks involving auxiliary verbs are likely to do well when active verb forms, modal verbs and passive voice are concerned. This can be partly explained by similarities in grammatical structures included in the applied

grammatical subtests and partly by the same intrinsic factor influencing cognitive process(es) involved in solving the respective tasks.

3.4 Correlations between Modal Verbs and other aspects of grammar

As mentioned above, modal verbs are sometimes considered secondary auxiliary verbs. That is why the grammatical connection should be strongest with (primary) auxiliary verbs as well as tense-aspect combinations.

Table 6 shows the observed relationships between **modal verbs** and the other tested grammatical variables.

Table 6: Correlations between modal verbs and other aspects of grammar

Modal verbs	N	r (X,Y)	r ²	t	P	Conf - 95%	Conf + 95%
Cloze test	143	0,649075	0,421298	10,13157	0	0,54	0,74
Active verb forms	143	0,608379	0,370125	9,10241	0	0,5	0,7
Auxiliaries	143	0,618563	0,38262	9,34796	0	0,5	0,71
Conditionals	143	0,290016	0,084109	3,5984	0,000442	0,13	0,43
Passive	143	0,56426	0,318389	8,1156	0	0,43	0,66
Countable	143	0,354267	0,125505	4,49844	0,000014	0,2	0,49
Articles	143	0,500174	0,250174	6,85884	0	0,37	0,61
Prepositions	143	0,673271	0,453294	10,81242	0	0,57	0,75

N – number of respondents; r – correlation coefficient; r (X,Y) – correlation between variables; r² – the coefficient as a percentage (multiplied by 100), used to predict how many people in the population (who fall between the parameters of the test group) will perform in the same way as the test subjects of the research; t - t-test; p – probability of error; **Conf-95%** and **Conf+95%** – the minimum and maximum limits of the interval, to which, with 95% probability, the coefficients can be applied within the general population.

3.4.1 Cloze test versus modal verbs

From **Table 6** it can be seen that the variable **modal verbs** showed a relatively high correlation ($r = 0.65$) with the variable **cloze test**. Similarly to the above grammatical subtests, modal verbs were included in the **cloze test** and, thus, a considerable level of relationship was expected. The variable **modal verbs** can explain 42%. In **cloze test**, however, seven variables were incorporated; and that is why the mentioned variable does not cover all 42% of the variable **cloze test**. This implies the existence of another connecting constituent that had caused such a high correlation between the variables in question. This could have been caused by an intrinsic factor influencing performance in the observed variables. The confidence interval in this case ranged from $r = 0.54$ to $r = 0.74$ with probability of 95%, which gives good cause to raise expectations that a fair level of correlation can be achieved in the population.

3.4.2 Conditional clauses versus modal verbs

The variable **modal verbs** showed a rather low correlation ($r = 0.29$) with the variable **conditional clauses**. The correlation, though, is statistically significant. The variable **modal verbs** can explain only 8% relating to the variable **conditional clauses**. The lower limit $r = 0.13$ represents a very low correlation, the upper limit $r = 0.43$ is within the range of moderate correlation. As a consequence, it is difficult to make an accurate estimation of the real value of the correlation in the population.

3.4.3 Passive voice versus modal verbs

Table 6 shows that in the case of **modal verbs** a relatively high correlation ($r = 0.56$) was observed with the variable **passive voice**. A possible connection can be seen in the fact that, in both subtests, verb phrases were the grammatical focus. In terms of the task composition in the test; however, such a high correlation coefficient cannot only be explained by the grammatical link in the two variables in question. The variable **passive voice** can predict 32% of performance in **modal verbs**, and vice versa. The values of the confidence interval are $r = 0.43$ and $r = 0.66$; thus, a medium level of correlation in the population can be expected.

3.4.4 Countable/uncountable nouns versus modal verbs

Table 6 shows a significant correlation ($r = 0.35$) between the variables **modal verbs** and **countable/uncountable nouns**. The observed correlation (although statistically significant) is not high, which can be attributed to the fact that these two variables do not seem to be grammatically connected. The variable **modal verbs** can predict 13% of performance in the variable **countable/uncountable nouns**, and vice versa.

3.4.5 Grammatical articles versus modal verbs

The correlation between the variables **modal verbs** and **grammatical articles** reached a figure of $r = 0.5$, which is rather surprising, as the two variables in question do not seem to have any grammatical connection. The existence of a connecting component conditioning the high correlation must, however, be considered. This could have been caused by certain intrinsic connections between the observed variables, which could be called a common factor. The factor is probably composed of the same cognitive processes involved in solving the respective tasks. Although the variables are

completely structurally unconnected, they explained 25% of their variances. A correlation in the population ranging from $r = 0.37$ to $r = 0.61$ can be expected with probability of 95%.

3.4.6 Prepositions versus modal verbs

A significant correlation ($r = 0.67$) between the variables **modal verbs** and **prepositions** was found. Similarly to the subtest **grammatical articles**, this pair of variables lacks an obvious grammatical connection. As a consequence, it can be stated that performance in these two variables was influenced by the same factor controlling cognitive processes involved in solving the grammatical tasks. The variables can explain 45% of their variances, which is almost a half. Such a high value of correlation must be conditioned by hidden connections, represented by an inner factor influencing performance in both variables. The calculated correlation coefficient ranged from $r = 0.57$ to $r = 0.75$ with probability rounded to 95%.

3.4.7 Summary

Based on the processed data reflected in the correlation matrix, it can be stated that those students who performed well in tasks involving **modal verbs** also achieved high results in the subtests dealing with auxiliary verbs and passive voice; however, the research shows they were also successful in when grammatical articles and especially prepositions were concerned.

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3.5 Correlations between Conditional Clauses and other aspects of grammar

Table 7: Correlations between conditional clauses and other aspects of grammar

Conditional clauses	N	r (X,Y)	r ²	t	p	Conf - 95%	Conf + 95%
Cloze test	143	0,274574	0,075391	3,390705	0,000905	0,11	0,42
Active verb forms	143	0,316763	0,100339	3,965565	0,000116	0,16	0,46
Auxiliaries	143	0,299182	0,08951	3,723122	0,000284	0,14	0,44
Modals	143	0,290016	0,084109	3,598396	0,000442	0,13	0,43
Passive	143	0,27271	0,074371	3,365825	0,000984	0,11	0,42
Countable	143	0,249426	0,062214	3,05844	0,002663	0,09	0,4
Articles	143	0,245682	0,06036	3,009556	0,0031	0,09	0,4
Prepositions	143	0,447031	0,199836	5,934137	0	0,31	0,57

N – number of respondents; r – correlation coefficient; r (X,Y) – correlation between variables; r² – the coefficient as a percentage (multiplied by 100), used to predict how many people in the population (who fall between the parameters of the test group) will perform in the same way as the test subjects of the research; t - t-test; p – probability of error; **Conf-95%** and **Conf+95%** – the minimum and maximum limits of the interval, to which, with 95% probability, the coefficients can be applied within the general population.

3.5.1 Cloze test versus conditional clauses

Despite the fact that the tasks aimed at **conditional clauses** were part of the variable **cloze test**, a rather low correlation ($r = 0.27$) between these variables was observed. The given correlation can predict only 7.5% of the performances in relation to the variables in question. Still, the calculated correlation is statistically significant. Therefore, a certain relationship can be expected in reality. The lower limit of the confidence interval reached an insignificant value of $r = 0.11$ and the upper limit, having reached $r = 0.42$, did not provide sufficient conditions for the level of correlation in the population to be predicted.

3.5.2 Passive voice versus conditional clauses

The subtests **passive voice** and **conditional clauses** were grammatically connected by required application of knowledge and skill in forming active tense-aspect combinations. That is why the low correlation coefficient ($r = 0.27$) observed between these variables was rather surprising. Such a low value can only predict 7.4% of performance in the respective variables. The value of correlation, though, is statistically significant, and indicates the existence of a connecting constituent causing the correlation. The lower value of the confidence interval is irrelevant ($r = 0.11$). The upper limit, however, equalled $r = 0.42$, which can be classified as a moderate correlation with practical relevance. The fact that the confidence interval ranged so widely made it impossible to form a sufficiently accurate idea about the intensity of correlation in reality.

3.5.3 Countable/uncountable nouns versus conditional clauses

As could be assumed, a low correlation coefficient ($r = 0.25$) was observed between the variables **conditional clauses** and **countable/uncountable nouns**, which only explained 6.2% of their performances. The lower value of the confidence interval only equalled $r = 0.09$, which means that there is practically no correlation in reality. This low value of correlation can barely predict 1% of the performance in the variables in question. Therefore, such correlation has no practical meaning. The upper limit of the confidence interval, however, reached a value of $r = 0.4$, which can predict 16% of the performance in the given variables and this might be of certain importance. Nevertheless, the broad confidence interval does not offer a possibility to form an accurate idea of the correlation level in real-life conditions.

3.5.4 Grammatical articles versus conditional clauses

According to expectations, a low correlation ($r = 0.25$) was found between the variables **conditional clauses** and **grammatical articles**. The variables can only explain 6% of their performances. In spite of this fact, the value of the correlation coefficient is significant, that is why the involvement of an intrinsic factor influencing performance in the observed variables can be expected. Based on the calculated correlation, the confidence interval was calculated with probability of 95% and lies between the limits of $r = 0.09$ and $r = 0.4$. Similarly to the previous case, such a broad range of correlation does not provide sufficient conditions to form accurate expectations about the level of correlation in reality.

3.5.5 Prepositions versus conditional clauses

The correlation between **conditional clauses** and **prepositions** reached the highest value ($r = 0.45$) in spite of no evident grammatical connection. Very likely, the high value of correlation coefficient was caused by an intrinsic factor influencing the performance in the variables in question. The confidence interval ranged between $r = 0.31$ and $r = 0.57$, calculated with probability of 95%.

3.5.6 Summary

Considering the comparatively low values of correlation coefficients with regard to **conditional clauses**, it can be concluded that this variable is the most significantly detached from the other variables and is relatively independent. Based on this, no conclusions with regard to the interconnection of conditional clauses with the other aspects of grammar observed can be drawn. Further research would be necessary to find out why such low correlations were recorded with all the other variables involved.

3.6 Correlations between Passive Voice and other aspects of grammar

Table 8: Correlations between passive voice and other aspects of grammar

Passive voice	N	r (X,Y)	r ²	t	p	Conf - 95%	Conf + 95%
Cloze test	143	0,6689	0,447427	10,68503	0	0,57	0,75
Active verb forms	143	0,738488	0,545364	13,00533	0	0,64	0,8
Auxiliaries	143	0,70472	0,49663	11,79457	0	0,61	0,77
Modals	143	0,56426	0,318389	8,1156	0	0,43	0,66
Conditionals	143	0,27271	0,074371	3,36582	0,000984	0,11	0,42
Countable	143	0,602544	0,363059	8,96496	0	0,48	0,69
Articles	143	0,590608	0,348818	8,69076	0	0,47	0,69
Prepositions	143	0,685209	0,469511	11,17107	0	0,6	0,77

N – number of respondents; r – correlation coefficient; r (X,Y) – correlation between variables; r² – the coefficient as a percentage (multiplied by 100), used to predict how many people in the population (who fall between the parameters of the test group) will perform in the same way as the test subjects of the research; t - t-test; p – probability of error; **Conf-95%** and **Conf+95%** – the minimum and maximum limits of the interval, to which, with 95% probability, the coefficients can be applied within the general population.

3.6.1 Cloze test versus passive voice

Due to the fact that the variable **passive voice** was incorporated in the **cloze test**, the resulting high correlation of $r = 0.67$ observed between these two variables could be expected. Based on the subtest aimed at passive voice, 45% of the performance in **cloze test** can be predicted, and vice versa. The confidence interval, ranging from $r = 0.57$ to $r = 0.75$ with probability of 95%, provides good grounds to predict a correlation level in reality.

3.6.2 Countable/uncountable nouns versus passive voice

There was no reason to presume as high a correlation as $r = 0.6$ between the variables **passive voice** and **countable/uncountable nouns**, as these variables are not grammatically connected. The variables can predict 36% of their performances. The confidence interval, with probability of 95%, creates the limits for correlation in reality of $r = 0.47$ to $r = 0.69$.

3.6.3 Grammatical articles versus passive voice

Grammatical articles were not expected to correlate with **passive voice**, as the grammatical link between them is very weak (if any at all). Still, the observed correlation reached a relatively high value ($r = 0.59$). The variables can explain 35% of their performances. A correlation in the limit of $r = 0.47$ to $r = 0.69$ can be expected in reality with probability of 95%.

3.6.4 Prepositions versus passive voice

An even higher correlation ($r = 0.69$) was calculated between the variables **passive voice** and **prepositions**. Similarly to the above relationship, the existence of a grammatical connection can hardly be traced, which is why there was no reason to predict a high correlation. However, the variables in question can predict 47% of their performances. The respective variables are probably connected by a common factor influencing performance in both of them, created by the same cognitive processes involved in solving the test tasks. The limits of the confidence interval ($r = 0.6$ and $r = 0.77$) were calculated with probability of 95%.

3.6.5 Summary

Generally, the variable **passive voice** is relatively closely connected to the other variables, probably due to the involvement of similar grammatical structures (mainly **active verb forms** and **auxiliary verbs**). This means that those students that perform well in tasks focused on passive voice are likely to achieve high results in exercises involving active verb forms and auxiliary verbs. The research, however, also suggests that they should also perform well in tasks dealing with prepositions, countable and uncountable nouns and grammatical articles.

3.7 Correlations between Countable/Uncountable Nouns and other aspects of grammar

Table 9: Correlations between countable/uncountable nouns and other aspects of grammar

(Un-)Countable N.	N	r (X,Y)	r ²	t	p	Conf - 95%	Conf + 95%
Cloze test	143	0,510088	0,26019	7,041976	0	0,37	0,62
Active verb forms	143	0,569547	0,324383	8,227894	0	0,43	0,66
Auxiliaries	143	0,629121	0,395793	9,610609	0	0,52	0,72
Modals	143	0,354267	0,125505	4,49844	0,000014	0,2	0,49
Conditionals	143	0,249426	0,062214	3,05844	0,002663	0,09	0,4
Passive	143	0,602544	0,363059	8,964961	0	0,48	0,69
Articles	143	0,501422	0,251424	6,881686	0	0,37	0,61
Prepositions	143	0,472833	0,223571	6,371858	0	0,33	0,59

N – number of respondents; r – correlation coefficient; r (X,Y) – correlation between variables; r² – the coefficient as a percentage (multiplied by 100), used to predict how many people in the population (who fall between the parameters of the test group) will perform in the same way as the test subjects of the research; t - t-test; p – probability of error; **Conf-95%** and **Conf+95%** – the minimum and maximum limits of the interval, to which, with 95% probability, the coefficients can be applied within the general population.

3.7.1 Cloze test versus countable/uncountable nouns

In the variables **countable/uncountable nouns** and **cloze test**, compared to the other variables, considerably higher correlation ($r = 0.51$) was found. The connection between the two variables in question must be admitted, as the ability to discriminate between countable and uncountable nouns was required in the **cloze test**. The confidence interval, however, ranged from $r = 0.37$ to $r = 0.62$, which is a rather wide interval and that is why an accurate idea about the real intensity of correlation in the population cannot be formed.

3.7.2 Grammatical articles versus countable/uncountable nouns

Taking the considerably high correlations observed between grammatically disconnected variables into account, a comparatively low correlation ($r = 0.5$) was observed between the variables **countable/ uncountable nouns** and **grammatical articles**, in spite of their grammatical relationship. Although the correlation was lower than could have been predicted based on the previous results, it was statistically significant. Due to the connection of the variables and low correlation, no influence of a common intrinsic factor can be presumed here. However, it can neither be excluded. The variables predict 25% of their variances.

3.7.3 Prepositions versus countable/uncountable nouns

The variable **countable/uncountable nouns** correlated $r = 0.47$ with the variable **prepositions**. As no clear grammatical relationship between these two variables can be assumed, a less significant correlation coefficient could be expected, which was proven to be the case. Its level was, however, significant, which is why the influence of a common factor can be presumed. The variables explained 22% of their performances and the confidence interval varied from $r = 0.33$ to $r = 0.59$ which indicates a rather low correlation in reality.

3.7.4 Summary

On the whole, the variable **countable/uncountable nouns** did not show correlations as high as the variables **active verb forms**, **auxiliary verbs** and **passive voice**. This means that the interconnections among these aspects of grammar are not as strong as in the case of those described in the subchapters above. However, the research results still suggest that those students who perform well in tasks focused on countable/uncountable nouns

are also likely to achieve high results in exercises involving active verb forms, passive voice and auxiliary verbs.

3.8 Correlations between Grammatical Articles and other aspects of grammar

Table 10: Correlations between grammatical articles and other aspects of grammar

Gram. articles	N	r (X,Y)	r ²	t	p	Conf - 95%	Conf + 95%
Cloze test	143	0,54063	0,292281	7,63097	0	0,41	0,65
Active verb forms	143	0,580927	0,337476	8,474809	0	0,46	0,68
Auxiliaries	143	0,463696	0,215014	6,214578	0	0,32	0,58
Modals	143	0,500174	0,250174	6,858844	0	0,37	0,61
Conditionals	143	0,245682	0,06036	3,009556	0,0031	0,09	0,4
Passive	143	0,590608	0,348818	8,690762	0	0,47	0,69
Countable	143	0,501422	0,251424	6,881686	0	0,37	0,61
Prepositions	143	0,499455	0,249455	6,845691	0	0,37	0,61

N – number of respondents; r – correlation coefficient; r (X,Y) – correlation between variables; r² – the coefficient as a percentage (multiplied by 100), used to predict how many people in the population (who fall between the parameters of the test group) will perform in the same way as the test subjects of the research; t - t-test; p – probability of error; **Conf-95%** and **Conf+95%** – the minimum and maximum limits of the interval, to which, with 95% probability, the coefficients can be applied within the general population.

3.8.1 Cloze test versus grammatical articles

The variables **grammatical articles** and **cloze test** showed only moderate correlation. This is surprising as tasks requiring correct usage of grammatical articles were incorporated in the **cloze test**. This is especially apparent if this correlation is compared to the other correlations with similar values (observed in the case of those variables, which were less significantly connected to the variable **grammatical articles**, such as **conditional clauses**, **auxiliary verbs** and **prepositions**). **Grammatical articles** and **cloze test** explain 29% of their performance and the confidence interval ranged from r = 0.41 to r = 0.65, which indicates a moderate correlation in the population.

3.8.2 Prepositions versus grammatical articles

Grammatical articles and **prepositions** correlated r = 0.5, which represents a significant correlation. These variables do not overlap, which is why the correlation can be explained by the same cognitive processes involved in solving the relevant test tasks. With some creative licence, certain similarities in associative acquisition of the system of English articles and prepositions can be seen.

3.8.3 Summary

Overall, the variable **grammatical articles** showed relatively high correlations, in spite of grammatical dissimilarity with the other variables. According to the results, those learners who achieve high results in tasks focused on grammatical articles can be expected to also perform well in exercises involving active verb forms and passive voice. The fact that, grammatically, these aspects are rather disconnected suggests that a common inner factor can be assumed to have influenced the given correlation coefficients.