

## DEVELOPING GRAMMATICAL MINIMUM TO READ PROFESSIONAL TEXTS ON ARCHITECTURE

*Developing reading skills for professional texts is very much dependent on the reader's grammar knowledge at all the levels of learning a foreign language including the university stage and reading professional texts. Thus, choosing a grammatical minimum is of great importance for developing reading skills. The choice of grammatical and lexical means in any text is known to be determined by the sphere of social interaction and connected with the notion of "functional style" and "speech genre". It can serve as a basis for developing a grammatical minimum to teach reading professional texts as they are used by the author to achieve the desired communicative effect. The purpose of this article is to analyze the grammatical phenomena typical for scientific articles in architecture in order to develop the grammatical minimum necessary for reading professional texts in this field. A grammatical minimum is seen as a typical set of grammatical phenomena that is necessary and at the same time sufficient to meet the communicative learning goals. And for developing reading skills of professional texts, this goal is to extract and interpret the factual information. The study uses the descriptive method with the elements of quantitative analysis that includes observing grammatical phenomenon and generalizing to formulate their specified features to study the grammatical phenomena of scientific articles taken from scientific journals on architecture indexed in the SCOPUS bibliographic database. They reflect the specifics of book-written speech. The results show that grammar in architecture articles has a number of specific features including: nouns as attributes, active and passive tense forms, modal verbs, infinitives (forms and syntactic functions), participles (syntactic functions and constructions), three -ing forms, gerunds and their syntactic functions, punctuation (comma's functions), word order, word formation (suffixes of nouns, verbs, adjectives). The grammatical phenomena selected are characterized by frequency and prevalence. These linguistic features observed in the study can be considered as the stylistic features of the architecture articles in English. The most typical and observable ones can be included into the grammatical minimum to form skills for reading professional texts in the sphere of architecture.*

**Keywords:** grammatical minimum, reading professional texts, scientific style, speech genre, scientific article.

### 1. Introduction

Grammar study and its regular revision are important at all the levels of learning a foreign language. The university stage is not an exception, especially learning a foreign language for professional purposes, which is largely based on the development of reading skills for professional texts. The successful information interpretation and extraction from a text largely depends on the reader's grammar knowledge. Statistically, nearly 50% of text information is given through grammar [2]. Thus, choosing a grammatical minimum is of great importance for developing reading skills. A grammatical minimum is seen as a typical set of grammatical phenomena that is necessary and at the same time sufficient to meet the communicative learning goals [8]. And for

developing reading skills of professional texts, this goal is to extract and interpret the factual information.

The choice of grammatical and lexical means in any text is known to be determined by the sphere of social interaction and connected with the notion of "functional style" and "speech genre" [5]. We believe that the set of such grammatical phenomena can serve as a basis for developing a grammatical minimum to teach reading professional texts as they are used by the author to achieve the desired communicative effect, i.e. to present new scientific information obtained by studying the data [3]. Thus, the purpose of this article is to analyze the grammatical phenomena typical for scientific articles in architecture in order to develop the grammatical minimum

necessary for reading professional texts in this field.

## 2. Theoretical framework

### 2.2. Scientific style features

The communicative purpose of any scientific text is to present accurate information from a particular scientific area and to hold the process of cognition [1].

It reflects theoretical thinking in conceptual and logical form, objectivity, uncategoricity, generalizing, emphasized logic and evidence, accuracy and clarity. These features are typical, regular and standardized characteristics common to each scientific text. They result from style-forming extralinguistic factors that determine a specific system of certain language means and structures within a text. Thus, it needs clarity and logical presentation of a complicated material using traditional linguistic means [5].

The system of styles in each language is specific [6]. English scientific texts compared to the Russian ones are more compact, clear, active. Their narration is not nominative but dynamic. Adjectives, verb forms, adverbs, etc. are widely used here. The scientific style of the Russian language, on the contrary, is more official, bookish with verbal-nominal phrases [8].

In English scientific texts traditional grammatical means are as follows:

- restricted use of finite verb forms;
- frequent use of impersonal constructions;
- extensive use of participial, gerundial and infinitive constructions;
- abundance of attributive groups with a descriptive function;
- frequent use of passive and non-finite verb forms to achieve objectivity and impersonality;
- use of impersonal forms and sentences such as: should be made, it can be inferred, assuming that, etc. [4]

This grammatical means is typical for all the scientific texts, although texts, for example, on electronics, power engineering, and metallurgy can differ significantly in the choice of grammatical language means from texts on linguistics, history or architecture.

### 2.2. Principles of developing a grammatical minimum

When developing a grammatical minimum, student's level of the English language knowledge and the communicative learning tasks should be considered. The following principles are also important:

- the grammatical minimum is selected from printed sources reflecting the specifics of book-written speech;
- the grammatical phenomena selected are characterized by frequency and prevalence.

To follow this principles 25 scientific articles in English in the field of architecture, published in the period of 2017-2018, were analyzed using the method of continuous sampling. The articles were taken from scientific journals indexed in the SCOPUS bibliographic database: *Frontiers of Architectural Research*, *International Journal of Sustainable Built Environment*, *Journal of Urban Management* and etc. An addition, we used a descriptive method with elements of quantitative analysis that included observing grammatical phenomenon and generalizing to formulate their specified features to study the grammatical phenomena of scientific articles.

Developing a grammatical minimum is based on the fact that grammars of the Russian and the English language have common and different features. The common features are due to the number of similar grammatical categories, which greatly facilitates their study by Russian students. However, there are a number of differences that can be divided into two groups:

- grammatical phenomena that are not presented in the Russian language, i.e. articles, gerunds, etc.

- similar grammatical phenomena that are different in functions and meanings, i.e. a more complex system of the verb tense forms, passive voice, etc.

To select the grammatical phenomena for the grammatical minimum we analyzed the phenomena presented in the Grammar reference "Reading and Translating English Scientific and Technical Literature" by M. Rubtsova and made the list of the parts of speech and their aspects which are not presented in the Russian language or have differences in functions and meanings [7]. The list of the grammatical phenomenon to be analyzed.

The noun:

- possessive case;
- nouns as attributes.

The Verb:

- active and Passive tense forms;
- modal verbs and expressions.

The Infinitive:

- syntactic functions;
- infinitive forms (Perfect, Continuous);
- infinitive constructions (Absolute, Subject, Object).

The Participles:

- syntactic functions;
- participle forms (Perfect and Continuous);
- participial constructions.

The Gerund:

- gerund forms;
- syntactic functions;
- gerund constructions.

The Mood:

- the Subjunctive mood;
- the Conditional mood.

Punctuation:

- comma's functions.

Word order.

Word formation (suffixes of different parts of speech).

### 3. Results

Our study showed that architecture articles grammar has a number of specific features.

**Nouns.** It is noticeable that possessive case is not typically used. On average, it is used once or twice per article. Word groups including nouns as attributes are used. Typically, such groups include two or three elements: a defined word and two nouns in the role of a complex attribute, e.g. "discriminant analysis", "housing quality analysis".

Word groups that have the pattern: "adjective + noun + noun" are also frequently used. When translating into Russian, one should take into account that the adjective can refer either to the first or the second noun, e.g. "dynamic data exploration", "rapid modernization method".

**Verbs.** The finite forms of the verb are presented practically by all the tense groups. The most frequent are: Present Simple, Past Simple and Present Perfect. It is important to note that the frequency of using a particular tense form depends on the subject matter of the article (for example, the history of the construction) and the composition of an article. The introduction has a greater variety of tense forms, whereas the conclusion has a smaller variety compared to any other compositional unit. To describe methods of research, data collection and the analysis procedure, Past Simple are mostly used. In other compositional units the Present Simple dominates.

The Present Simple form is used to describe scientific facts, rules, scientific problems, opinions and assessments, research results and conclusions. The Past Simple form is used to present opinions and assessments, research results and to describe the experiment procedure, the methods of research, the process of collecting and processing data obtained during the experiment.

The Present Perfect is used to indicate the research problem that has appeared in recent years and to describe the results of previous studies conducted by various scientists.

It is noticeable that the Passive Voice forms prevail over the Active Voice forms. On average, Passive Voice forms comprise up to 60-80% of all voice forms used in the article.

Modal verbs are not widely used in architectural articles. The most common is the verb "can", it has the meaning of assumptions and possibility for an action or development of the situation, e.g. The historic and architectural character of buildings can create urban retail streetscape.

**Infinitive.** In architectural articles, the infinitive is mostly used as a part of a composite verbal predicate, attribute and adverbial modifier of purpose. The last two functions can cause some difficulties for the Russian reader, as before the infinitive as an adverbial modifier of purpose there is no "in order to" corresponding to the Russian conjunction "чтобы". As an attribute, the infinitive does not always correspond as the infinitive into Russian, which can cause certain difficulties when reading, e.g. The reading authorities have taken measures to control the housing development.

Among the infinitive forms, the most common is the Indefinite form. The Perfect form can also be used typically with modal verbs, e.g. Some buildings may have been demolished. The infinitive constructions (Absolute, Subject, Object) are not used in architecture articles.

**The Participle I.** There are only two participial forms used in the architecture articles: Indefinite Active and Passive. They can perform the following syntactic functions: the part of a verbal predicate (Continues Tense forms), the attribute and adverbial modifier of manner (as a part of the Absolute Participle Construction).

The main difficulty for the Russian reader here is the Absolute Participle Construction due to its absence in the Russian language, e.g. Along Kingsway Street are buildings of historical importance, with new buildings replacing old ones.

**Participle II.** In architecture articles this part of speech is often used as an attribute after the defined noun, which can also be a problem, as it can be perceived as a verbal predicate in the Past Indefinite form, e.g. The water body located in the study area is related to part of the Urmia Lake. Participial constructions with participle II are not used in the articles.

**Gerunds.** This part of speech is used only in the Indefinite form. Syntactically, they are widely used as subjects, attributes (after of) and adverbial modifiers of manner (after by, without, with, into, etc.), e.g. Loading and selling are done in the year. An image can be opened in possible forms without affecting the structure. The history of outskirts siting ...

When teaching grammar, it is also important to focus on all three -ing forms (nouns, gerunds, participles I) and differentiate their grammatical meanings.

**The Mood.** The study shows that the only mood used in the article is the Indicative mood. Other moods (Imperative, Subjunctive, Conditional) are not used in the articles analyzed.

**Punctuation.** Using a comma in the English sentence does not always coincide with its using in the Russian sentence. In architectural articles the most typical cases of its using are as follows:

- a comma delineates additional information to

the main idea e.g. However, apart from the outdoor, there are other factors.

– a comma is used to show that two adjacent words are not syntactically related to each other, e.g. Surprisingly, given the magnitude of the educational institutional population ...

– a comma the conjunctions (or, for, which) e.g. ...as a center of a specified activity, or any large ... . Towns in the surrounding area of the metropolitans, which has become of the most important challenges.

Word order. The direct word order prevails in the articles. Violating the direct word order are as follows:

– using an adverbial modifier at the beginning of the sentence, e.g. For the purpose of generative design, common dome sizes were analyzed ...

– using a subordinate clause at the beginning of a complex sentence, e.g. When the concentration was increased to 2730 ppm, decision making performance was reduced.

This topic is of great importance due to the absence of case and personal endings, the English word, depending on its place in the sentence, can perform various functions and have the features of different parts of speech.

Word formation. The study shows that suffixes with abstract meaning are widely used in the articles. The suffixes of abstract nouns (-ance, -ence, -age, -dom, -ion, -ment, -ness, -ure, -ity, -ship, -ing), adjectives (-able, -ible, -al, -ant, -ent, -fil, -less, -ive, -ic), verbs (-en, -ify, -ize) and

prefixes of adjectives (-in, -il, -im, -ir, -un), verbs (-re, -dis, -pre, -over, -under).

#### 4. Conclusion

The linguistic features observed in the study can be considered as the stylistic features of the architecture articles. The most typical and observable ones can be included into the grammatical minimum to form skills for reading professional texts in architecture. Thus, the following list of grammatical phenomena for grammar revision and enlarging can be presented.

The Noun:

– nouns as attributes.

The Verb:

– the Active and Passive tense forms;

– essential modal verbs (can, may, need, must).

The Infinitive:

– syntactic functions;

– infinitive forms (Perfect, Continuous).

The Participles:

– syntactic functions;

– participial constructions (Absolute, When + Participle).

The Gerund:

– syntactic functions.

Three -ing forms.

Punctuation:

– comma's functions.

Word order.

Word formation (suffixes of nouns, verbs, adjectives).

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