

## **HOW TO CHOOSE THE RIGHT WORD: SEMANTIC MODELLING OF ENGLISH EDUCATIONAL TERMS**

*In modern linguistics, there is an increasing interest in discourse and directly in terms within it. The topic of education is especially relevant for students of the pedagogical university, as for future teachers. Within the educational discourse of English-speaking countries, there are many concepts that denote various objects and phenomena within the educational sphere. One of the most important problems is that people often do not understand the meaning of terms and are confused in their use, especially when it comes to terms from different variants of English language. Modern science provides different ways of researching and systemizing discourse and terms within it. One of the approaches that are used now is semantic modelling. Such linguists as Yu. I. Gorbunov, I.I. Zhuchkova, etc. have used this method for researching some fields of linguistics, but they have not used this kind of modelling to investigate terms within educational discourse. Thus, the main aim of the research was to systemize terms related to the educational discourse of American and British variants of English through semantic modelling.*

*Due to the conducted research we have found out that semantic modelling may be the most effective way to study discourse. The research showed that systematizing terms could help to make new definitions of the main terms in the semantic field. Our findings may be used for further investigation of educational discourse through semantic modelling, but with adding more terms and semantic fields. Semantic modelling also may be used in creating new definitions of the terms from other types of discourse.*

### **Introduction**

Linguists have researched discourse for a long time. Thus, there are different definitions of the term “discourse” which reflect different sides of this phenomenon. For example, Netherlands linguist Teun Van Dijk defines “discourse” as a complex communicative event occurring between two sides (speaker and listener), in certain context. And he also adds that discourse has verbal and non-verbal context. Another definition, given by I.S. Artyukhova, shows that “discourse” is a set of communicative events united by extralinguistic factors. As it was mentioned, these definitions reflect some points of the “discourse”, but they are not full. That is why we made a new definition based on

the previous ones. Discourse is a collection of communicative acts, events, texts, united by one or several extralinguistic factors and having verbal and non-verbal components.

Any types of discourse contain different words, phrases and terms. Our research supposes investigating terms. We follow the definition of “term” given by soviet linguist R.G. Piotrovskij, because his understanding makes building semantic network possible. According to R.G. Piotrovskij, “term” is “an elementary, compound or complicated sign, which, serving within the framework of a specific scientific and business communication, embodies in its intended meaning a concept relating to a specific subject area of science, technology, and cultural, administrative or political activity” (translation is mine).

Modern linguistics has a different approach to investigate and systematize terminology within the framework of different types of discourse. One of them is semantic modelling, which shows semantic relations between lexical units. The main feature of this approach is that the words in it are grouped thematically. However, in order to expand the possibility of access to the vocabulary, in addition to the thematic distribution of terms, an alphabetical “input” is also a prerequisite, which provides a reverse transition from a word to a concept.

All dictionaries help to systemize lexical units and show their definitions. But other approaches do not reflect any relations between terms and do not show the whole “picture” of the discourse. Now semantic and thesaurus modelling is widely used in lexicography and discourse study. But there is no thesaurus containing educational terms of American and British English.

The current research is supposed to systemize terms of educational discourse related to American and British English through semantic modelling. Thus, the first objective of the paper is to sample educational terms and to choose key terms. Another objective is to build fields and to find relations between the terms with the help of semantic network. One of the techniques used in the construction of the semantic fields is the thesaurus approach. The hypothesis of the current research

supposes that semantic modelling seems the most effective way of investigation and systematizing educational terms.

Our research showed that all educational terms are connected with each other with the help of hierarchical and equivalence relations. Our semantic network allowed finding out more information about the terms and helped to create their new definitions.

The research may be continued in some ways. First, it will involve more educational terms to expand the semantic network and make a bigger thesaurus dictionary. The next stage will be investigation educational terms from other variants of English.

Section Review of the Literature introduces the notions of “discourse”, “term” and “academic degree”. Section Methods outlines our method for structuring educational terms and reveals reasons for its use. In section Results we give the description of the main results about effectiveness of thesaurus approach in investigation of the terms that were got due to the research. Section Discussion describes the interpretations of the results and explains them. Section Conclusions gives the summary of the research and possible continuation of the work.

## **Review of the Literature**

### ***1. Discourse***

Proceeding from the fact that this research involves the study of educational discourse, it is necessary to consider the definition of the term “discourse”. Despite the variety of definitions given to the term “discourse” [1, 5, 26], there is still no consensus on this term.

T. Van Dijk has considered two definitions of "discourse". In the broad meaning, "discourse" is a complex communicative event occurring between the speaker and the listener (observer), in a certain temporal, spatial and other context. In addition, it can have verbal and non-verbal components. In the narrow meaning, discourse is considered as an oral or written text, taking into account the presence

of only the verbal component [30]. These two definitions reflect the essence of the notion “discourse” better, but more details about “discourse”. But due to the fact that they are separated, these definitions cannot give all the details.

Another definition of the term “discourse” has been given by D. Schiffrin in *The Handbook of Discourse Analysis*, stating that “discourse is anything beyond the sentence” [26]. However, this definition does not fully reflect the essence of the notion “discourse”, as it simply underlines its size.

I.S. Artyuhova has defined discourse as “a set of communicative acts and / or texts united by one or more extralinguistic factors, among which the sphere of communication, the mode of communication, the form of communication, etc.” [1].

Collecting of the mentioned definitions allowed creating a new one that gave more detailed description of the term “discourse”: it is a collection of communicative acts, events, texts, united by one or several extralinguistic factors (the sphere of communication, the mode of communication, the form of communication, etc.) and having a verbal and non-verbal component.

Linguists have suggested different classifications of discourse [6, 10, 21, 25, 31]. The classification, given by V.I. Karasik, has suggested 15 types. He has distinguished political discourse, military discourse, educational discourse, sport discourse, etc. [10]. Our research was supposed to investigate terms within the educational discourse.

The most appropriate definition of “educational discourse” has been given by Yu. G. Kurovskaya. She has defined “educational discourse” as “a special way of speaking about the world in education, in the process of learning and understanding the world; a special kind of speech activity aimed at the upbringing and socialization of a new member of society” (translation is mine) [14].

## ***2. Terminology***

There are a number of definitions given to “term” [8, 9, 15, 16, 23, 27, 28], but they do not explain its meaning fully. D.S. Lotte has defined "term" as a word

or phrase that represents the unity of a sound sign and the concept associated with it from a particular area of science or technology [15, 16]. This definition does not allow distinguishing “term” from “word related to a certain sphere”. In addition, this definition concentrates on two certain fields of knowledge.

The definition given by A.A. Reformatorskij has showed such characteristic of “term” as an unambiguous and precise expression of concepts and naming of things [23]. But according to this definition, terms do not have any synonyms. Hence, this definition does not reveal the term with the point of view that we need.

Another definition has been given by R.G. Piotrovskij. It is “an elementary, compound or complicated sign, which, serving within the framework of a specific scientific and business communication, embodies in its intended meaning a concept relating to a specific subject area of science, technology, and cultural, administrative or political activity” (translation is mine) [20]. This definition was appropriate for our research because it shows “term” as a sign.

D.S. Lotte has suggested requirements to terms. They are:

- Absolute and relative uniqueness
- Accuracy
- Systematic
- Brevity
- Lack of synonyms
- Motivation
- Simplicity and clearness
- Embedness
- Context independence
- Inadmissibility of unreasonable foreign language

borrowings [15]

### ***3. Ways of interpreting meanings***

Lexicology has had different types of dictionary. Most of them have contained two-way entries. It means that they have given a head word and interpretation of its meaning. Most of authors of dictionaries have used traditional types of definitions. O.L. Rubleva has given two main traditional types of definitions: descriptive way, synonymous way, reference. Descriptive type is a detailed description of the meaning with listing generic and distinctive features of the concept. Synonymous type supposes giving words with the same meaning. The first type seems more complete. [24].

Modern linguistics suggests more types of definitions. For example, D.V. Dmitriev gave definitions based on the idea of connecting the word with specific objects of reality [2].

Existing types of definitions have given some information about words, but with different points of view. And there was no dictionary containing definitions based on the structure of semantic fields of words.

#### ***4. Academic degrees***

Due to the unification of the modern education the term “academic degree” is well-known around the entire world. Despite the fact that the understanding of this term is quite similar in different countries there is still no single definition of it.

The term “degree” has been used from the 12<sup>th</sup> century in the Great Britain. The term has been borrowed from Old French (degré) and meant “a step, a stair”, also “a position in a hierarchy”, and “a stage of progress, a single movement toward an end” [Online Etymology Dictionary]. These meanings of the term have indicated the hierarchical structure of “degree” as a system. More academic meaning the term “degree” got in the late 14<sup>th</sup> century and meant “an academic rank conferred by diploma” [18].

Nowadays there are some definitions of the term “academic degree” or “degree” that are quite common. In British variant of English the term is understood as “any of several titles conferred by colleges and universities to

indicate the completion of a course of study or the extent of academic achievement” [3]. The given definition reveals an academic component of the word but it does not show the hierarchical structure.

In American English there is another definition of the term “degree” – “diploma or title conferred by a college, university, or professional school upon completion of a prescribed program of study” [4]. This definition also does not show the structure of this system completely.

Also there is a definition of this term that can be related to both American and British variant of English language: “a qualification awarded on successful completion of a course of study in higher education, normally at a college or university” [19].

Modern Russian education has an equivalent of the term “academic degree” – “uchenaya stepen” (ученая степень). It means “a scientific qualification in a particular branch of knowledge” [7].

As it seen, the term “academic degree” is widely used in not only English-speaking countries but also in Russia with its own equivalent. The covered definition has shown that this term is understood quite similarly. But Russian definition gives details about “a particular branch of knowledge” while American and British definitions focus on its completion and educational institutions that award it.

Thus, it is seen that there is no single definition that could explain the system of academic degrees completely. That is why we need to refer other terms connected with “academic degrees”. As thesaurus modelling shows all relations between terms in a particular branch of knowledge, it can help to understand the covered system. Hence, a detailed investigation of the term “academic degree” and the range of terms present in its semantic field according to the place they occupy in the hierarchical structure of the thesaurus is needed.

## **Methods**

In our research we studied educational terms from English educational discourse. The terms were selected from online dictionaries. Sampling was taken according to the frequency of occurrence these terms in literature, special glossaries.

In this research we used the notion “term” which was based on the idea that any linguists sign comprises the signifier and the signified, the components of the latter revealing semantic relations among terms. In this understanding “term” is also called “terminological sign” [20]. The hypothesis that was tested in this paper stated that the semantic approach for the modelling of semantic relations seemed the most effective method for systematising and investigating educational discourse.

Our investigation involved analyzing dictionaries with two different arrangements of entries: alphabetical and semantic. Alphabetical entries were based on the formal shape of the lexical unit. Semantic entries were based on the semantic content of the lexical unit. Alphabetical dictionaries are connected with the formal approach of studying discourse. In most western dictionaries, the list of words is ordered alphabetically. It is habitual for many people. But this method has an obvious disadvantage - semantic structure of vocabulary is not reflected. In specialized dictionaries with controlled vocabulary “lexical items are arranged according to their meaning with specified types of relationships, identified by standardized relationship indicators” [17]. Such kind of dictionaries is called thesauri.

According to NISO Z39.19: Standard for Structure and Organization of Information Retrieval Thesauri, there are three types of relationships used in the semantic approach: equivalence, hierarchical, and associative. In the current study we use only two of them: equivalence, hierarchical, and associative. The following relations were found in works of Z.A. Kharitonchik [11] and M.A. Krongauz [13]:

- synonymy
- variance



- ouasisynonymy
- antonymy
- converting
- hyperonymic relation (“generic-specific” relation)
- meronymic relation (“part-whole” relation)

The description of the meaning of terms using structured sets of semantic features was conducted with the help of componential analysis of their definitions. Componential analysis supposed division of definitions into semantic components. Then we looked for key words and similar components in definitions of compared term. This procedure helped to see connection between the terms. This fact makes our approach to investigation more complete than formal ones. Using this kind of analysis allows us to analyse terms in to dimensions: vertical, comparing the meanings of different hierarchic levels, and horizontal, comparing the meaning of the same hierarchic levels. Hence, our investigation was divided into two stages. The purpose of the first stage was to identify hyperonyms, hyponyms, holonyms and meronyms. The second stage involved identifying synonyms, antonyms and other related semantic relations.

## **Results**

As outlined in the methods section, the first stage of the investigation involved identifying hierarchic relations, which link terms into a single semantic field. The term “academic degree” related to the semantic field of the term “education” (Figure 1). The term “education” was the main term in the semantic field of the educational terms, and “academic degree” was a part of it.

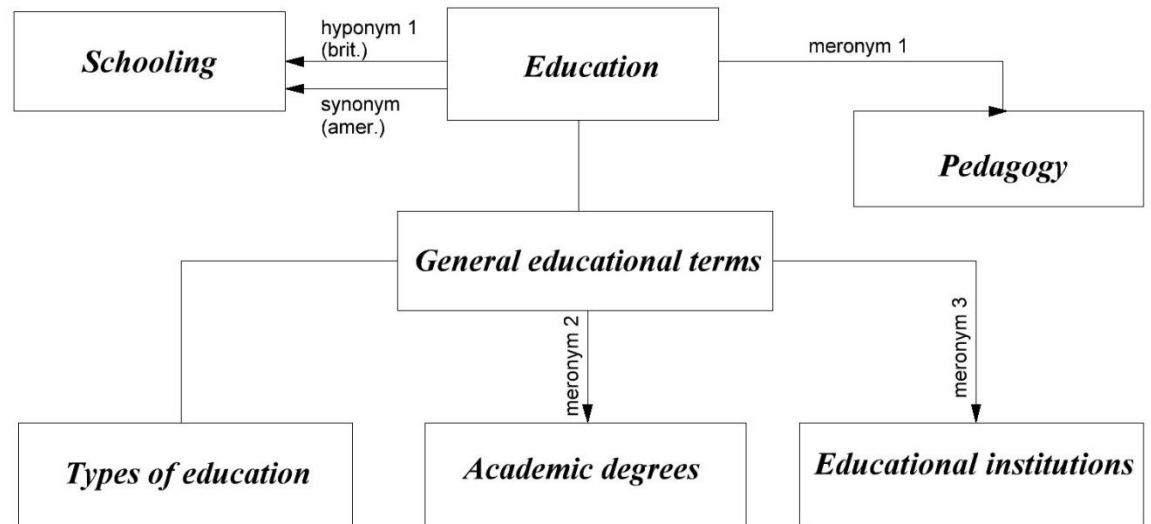


Figure 1. Semantic field of the term “education”

First and foremost, it is advisable to consider the definition of the term "academic degree" itself. “It is a qualification awarded on successful completion of a course of study in higher education, normally at a college or university” [19]. This term could be attributed to meronyms of the basic term “education”, because such phenomenon as obtaining a scientific degree at the end of the training is considered to be part of a large education system. This was evidenced by the phrase "study in higher education".

As it seen in Fig. 2, there were four main types of academic degrees: “associate degree”, “bachelor’s degree”, “master’s degree”, and “doctoral degree”.

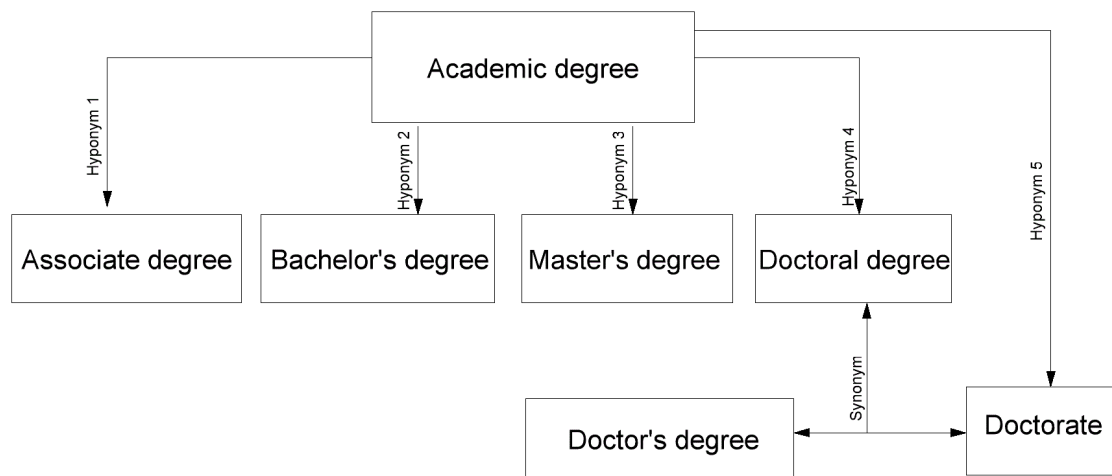


Figure 2. Semantic field of the term “academic degree”

Our first step was to find hierarchical relations between the terms. Figure 2 shows the research allowed us to find out that the term “academic degree” had five hyponyms. Our second step was to identify equivalent relations. We found that some kinds of academic degrees have synonyms (Figure 2). Due to the researching of the semantic field of the term “academic degree” we found the term which was related mostly to the Russian educational discourse. This term was “The Candidate of Sciences”. This term could be used in English educational discourse but only while describing Russian system of academic degrees.

The research also helped to identify some features of the term “academic degrees” which were not mentioned in its definition:

- it has hierarchical character
- this term is connected with the educational system
- an academic degree can be got only after graduation from certain educational institutions

The listed features allowed making a new definition of the term “academic degree” taking into account all the details:

Academic degree is 4 steps academic qualification awarded on successful completion of a course of study in higher education, normally at a community college, college or university for 2 or 4 academic years.

Unexpectedly, the research also helped us to find out that some terms had full synonyms. The terms “doctoral degree”, “doctor’s degree” and “doctorate” seemed to be synonyms (Figure 2).

## **Discussion**

Our research considers the hypothesis that the semantic modelling may be the most effective way to systematize English educational terms. This hypothesis was confirmed.

The semantic modelling seems the most effective way to study educational terms. Thus, it could be used to:

- explain the educational terms more easily;
- make more complete definitions of the terms under study.

Our research showed that semantic modelling helped to work with lexical units. We could give students definitions of the terms and relations between them. It may help to see the exact location of terms among other terms in the educational discourse. It could be used to explain all the differences between the terms. The hierarchical structure of the key term is also showed. Thus, semantic modelling might help to choose the correct words without checking their definitions. The thesaurus dictionary could also be used by interpreters. They could choose the most appropriate word for the translation. For example, they may find out that “master’s degree” cannot be replaced by “doctor’s degree”. But “doctor’s degree” can be replaced by “doctorate”.

Traditionally, teachers have used different methods to introduce lexical units. For example, G.V. Kim writes about direct and translation ways. Direct method does not suppose the use of mother tongue. The author mentions such methods as demonstration and explanation of the meaning in the foreign language. The explanation may involve definition, listing, context, use of synonyms and antonyms [12]. These approaches develop students’ mindset, expand language practice, and strengthen associative links. However, the mentioned methods do not reflect all the features of the terms. The approaches are also used separately which do not allow students to see all the details. Our method seems to combine such methods as definition and use of synonyms and antonyms. Semantic modelling might also show more relations between the terms.

Our research proved that semantic modelling may help to make complete definitions of educational terms. We studied several definitions of each term. The study showed that they contain some information about different phenomena but separately. Semantic modelling showed hierarchical and equivalent relations between the terms. This fact might help us to make a definition which reflects also the place of the term among other educational terms. For example, we managed to make the definition of the term “academic degree”. Academic degree is 4 steps

academic qualification awarded on successful completion of a course of study in higher education, normally at a community college, college or university for 2 or 4 academic years. This definition seems more complete than others because it describes the main generic and distinctive features of the phenomenon, and also its relations to other educational terms.

The author of the book on Russian lexicology O.L. Rubleva gives five main types of dictionary definitions. The descriptive type is the most complete. It involves listing generic and distinctive characteristics of the phenomenon [24]. Although this type of definition gives the main features of the term, it does not show its place among other terms. This is because those who use the descriptive type do not focus on relations between the terms within the discourse. We have paid attention to the relations between the terms which allowed us to add more details to the definitions of educational terms.

Surprisingly, we found out that educational terms have synonyms. D.S. Lotte stated that terms had no synonyms [15]. We could find synonyms of the term “doctoral degree”. They were ‘doctorate’ and ‘doctor’s degree’. We could conclude it from the componential analysis of their definitions and origin. “Doctoral degree is defined as an academic degree achieved by universities that is, in most countries, a research degree that qualifies the holder to teach at the university level in the degree of the field, or to work in a specific profession” [19]. “Doctorate” comes from Latin and means “to teach”. “Doctor” is translated “teacher” from Latin, and could be considered as “degree of a teacher”.

The disadvantage of the work is that we investigated only the key terms of educational discourse. But despite of the fact that the number of the terms is not large, we could make a conclusion about the effectiveness of the approach. It also may allow continuing the research through investigation of more terms related to English educational discourse.

## **Conclusions**

The main aim of the research was to systemize the terms within the educational discourse on the example of the semantic field of the term “academic degree”. According to our results, this approach helped to differentiate the signified of terms. Our results helped to arrange the terms in hierarchical order and unite them all into a coherent semantic field. Semantic modelling showed different semantic relations between the terms: hierarchical and equivalence. This approach helped to find out more information about all types of academic degrees that allowed making more full definition of the terms. The new definition reflected all sides of this phenomenon while previous ones showed the main features separately.

Although in our work we have investigated only the key educational terms, the research allowed us to build the structure of general outline of educational system. Further investigations may fill this gap. And we also will investigate educational discourse of other variants of English. Our findings should be also used for investigation of other types of discourse.

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