Measuring Cultural Specificity of Professional Vocabulary

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Abstract

This paper explains some reasons for communication breakdown in professional discourse in cross-cultural and intercultural communication, which lie in the difference of what is associated with a particular word of the same language in different cultures. To avoid misinterpretation, misunderstanding and misconception in the professional communication in English between teachers representing different communicative cultures, the authors suggest a quantitative semantic tool to measure the risk of misinterpretation of professional vocabulary. The research aims to determine the degrees of semantic inequivalence of pedagogical culture-specific vocabulary which is used in professional discourse practices by American and Belarusian teachers in their interactions in English, and identify linguistic and extralinguistic factors that create misunderstandings. To determine the degree of specificity of professional vocabulary, it was suggested to apply cultural specificity index, which was developed by the authors specifically to achieve the measurable objectives of the given research and to facilitate further studies in the highlighted area of concern. The semantic analysis of respondents’ subjective definitions of 26 vocabulary items resulted in their classification and clarification in the context of cross-cultural understanding.

1 Introduction

Culture is a rather broad concept, differentiating and uniting people from specific cultural groups. For years now, interaction with people from various cultures is inevitable, so the interlocutors should be aware of the possibility of misinterpretation, misunderstanding and misconception which may arise while decoding a message delivered by a representative of another culture. It’s of crucial importance to assume that each action, speech acts included (House & Kádár, 2021), has a cultural-specific connotation, regardless of the discourse in which it can be used. The lack of cultural knowledge may put the speaker in a risk to be misunderstood. Thus, to be a competent communicator one should tend to increase their intercultural communication competence (Wilberschied, 2015.), in order to coexist, interact and cooperate effectively with the representatives of other cultures.

Professional communication requires not only open minds but also a common language. Language in the professions is a very quick growth in the field of linguistics for professional communication as it is mainly determined by internal and external factors. Culture is the most important of them as it is ultimately relevant for everybody. It goes without saying nowadays the ability to deal successfully with cross-cultural components is vital for any professional community including the representatives of any level of education.

In the professional discourse, alongside with alacrity to achieve the common communicative aim, each interlocutor strives to reduce the risk of misunderstandings. The professional pedagogical discourse, especially the one that is connected with teaching a foreign language, is even more challenging than professional communication in any other sphere. On the one hand, foreign language teachers have to know how to avoid misunderstanding in the cross-cultural exchange of professional experience with their
colleagues from all over the globe. On the other hand, they are required to work in a multicultural environment trying to achieve the aim of teaching the representatives of a certain culture (or several cultures) how to communicate their thoughts and needs to interlocutors belonging to a completely different foreign culture. A foreign language teacher is a cultural mediator who should be not only bilingual but also bi-cultural. This means that s/he is acquainted with educational process in both the source and target culture and needs to know the culture-specific aspects.

The pedagogical reality of the era of "high modernity" is characterized, among many other social and professional challenges, by the growing "separation of social relations from a specific place and the appearance of their new combinations in unlimited space-time intervals (new types of friendships, partnerships, business, family relationships, when Skype, all kinds of messengers, chats, etc. are enough to maintain them)" (Drobotenko et al. 2021, 2).

These changes in the professional communicative environment of foreign language teachers erase geographic boundaries between teachers and students from different countries as well as between foreign language teachers from all over the world, thus creating the platform for multicultural pedagogical communication and the risks of cross-cultural misunderstanding.

Intercultural professional activities of teachers include:

(a) Webinars: listening, reading, responding to questions in writing, answering in opinion polls, responding /reacting to the opinions of other participants.

(b) Online courses: reading, listening to audio, watching the video, reflecting on one's own experiences, describing practices, asking /answering questions, doing tests, making ad submitting videos.

(c) Networking through the professional social groups in Facebook, LinkedIn, Instagram, etc.: reading posts from peers and admins, initiating online discussions, co-creating infographics, selecting and posting YouTube videos, commenting on each other's opinions.

(d) Teachers’ and research conferences: doing reports/workshops/presentations, commenting on speakers’ talks, asking questions/answering, participating in discussions, face-to-face discussion, socializing, giving feedback, occasional chats, etc.

(e) Professional associations which organise numerous international events and provide opportunities for direct encounters between professionals.

A lot of teachers from Belarus cooperate in exchanging the teaching experience with their colleagues from the USA. That is why it’s significant for a contemporary Belarusian teacher to be aware of current changes in American pedagogical environment and to know everything about professional language culture to enhance mutual understanding. It is not a matter of choice, it has become a necessity.
This paper explains why professional discourse can become challenging in cross-cultural communication even if the interlocutors are fully aware of the dictionary meaning of professional terms. The apparent weaknesses in intercultural dialogue have encouraged numerous studies in the field of lacunarity (Newmark 2010, Szerszunowicz 2015). Actually, in lacunae theory, culture-specific vocabulary exemplifies the gap that occurs when a concept expressed in one language by means of a word is not expressed by a corresponding lexical unit in another language (cf. Lehrer 1974, Szerszunowicz 2015). The cross-cultural differences in lexical meaning interpretation may occur not only due to the existence of lacunae, but also because of the dissimilarity of associative fields corresponding to professionally relevant words that have close equivalents in the target language. Associations may differ among representatives of different language communities and have an implicit nature (Stozhok et al. 2021, 2) the addressee may be unaware of.

Paradoxically, there have been no studies so far that would investigate the semantic peculiarities of English terminology and professional vocabulary which arise from the cultural specificity of American and Belarusian pedagogical reality. Thus, to improve teachers’ cross-linguistic competence, it is necessary to examine cultural specificity of lexicon which is used in education (e.g., the term ‘grades’ means 1 – 10 in Belarusian school, and A – F in the USA). This research aims to determine the degrees of semantic in-equivalence of pedagogical culture-specific vocabulary which is used in professional discourses by American and Belarusian teachers in cross-cultural communication in English, and identify linguistic and extralinguistic factors that create cross-cultural misunderstanding. This aim can be achieved if we identify the quantifiable measure of cultural specificity of professional vocabulary in educational sphere, and this is what we actually accomplished as a result of the given research.

The working hypothesis of the research in the framework of this article is that interpretation of professional vocabulary using cultural specificity index (the quantitative indicator of semantic dissimilarity) promotes better understanding of risks of communication breakdown in intercultural dialogue.

2 Theoretical background

Successful communication between professionals is a necessary condition for building collaborative relationships. Professional communication is not just the process of meaningful interaction among human beings that is aimed for creating an understanding in the mind of another but it is always a goal-directed action determined by specific intentions or functions (Tondl 2014).

Among the first communication experts to focus their research on intercultural professional communication was Gudykunst who identifies anxiety/uncertainty issues “including mindfulness” as characteristics of effective interpersonal communication (Gudykunst 2002) and Wiseman who developed the theory of intercultural communication competence (Wiseman 2002). Kim’s theory on cross-cultural adaptation based on the ideas of personal network approach (Kim 2001) is also remarkable.
The language is the means of communication between people, and communication is successful when all participants of communication possess the same code. This code reflects not only some language means but all cultural information which is coded in the language as a semiotic system. To have an effective conversation it is necessary to understand what is associated with the word in a specific culture.

The issue of the link between language and culture has always been paid attention among scientists (Majid & Levinson 2011, Le Henaff 2013, Tondi 2018). Many works in the sphere of cultural linguistics are devoted to the cultural component of language (Liddcoat 2004), cultural specificity of language (Semege, 2021), ethno-cultural specificity (Alefrenko et al. 2018), lacunae (Newmark 2010; Szerszunowicz 2015), lexical gaps (Huckstorf & Petras 2011), etc.

In this regard, it is particularly important to identify and study cultural specificity of professional vocabulary and to establish the semantic component values. According to Arkhipova & Vlavatskaya (2019), the need to study national-cultural specifics of lexical semantics helps overcome communicative barriers between representatives of different cultures.

2.1 Grounds for misunderstanding in cross-cultural dialogue

The term “dialogue” implicates the process of communication, which includes not only the information exchange. A dialogue is also the creation of a certain community in which people comprehend information and relate their meanings to the meaning of communicative partners, therefore creating a certain degree of understanding. It is not so much the expression and transmission of already formed meanings as the collaborative semantic creation.

According to Lustig & Koester (2013), a person typically becomes aware that other norms might exist when interacting with the members of other cultures.

The representatives of one culture may intend a message with a particular meaning, while their counterparts tend to attach another meaning, peculiar of the usage in their country, to that message, therefore the process of cross-cultural dialogue results in misunderstanding.

In this regard, Kerekes & Soroka (2020) claim that misunderstanding is a co-constructed interpretive failure which may occur in a verbal or written communication between two or more interlocutors when the intended meaning and resulting interpretation are insufficiently matched.

Many researchers have been involved into the investigation of cultural misunderstandings. Thus, Giles’s (2007) accommodation theory proposes that speakers either reduce (i.e. converge) or intensify (i.e. diverge) communicative differences in order to increase the interlocutor’s social approval (i.e. to make oneself more likeable), to enhance communicative efficiency, or to maintain/emphasize one’s social or cultural identity (Giles & Ogay 2007).

Hinner (2017) suggests the following causes for intercultural misunderstandings: the differences of denotative meanings of the same words across cultures; the cultural influence on an individual’s personal
experience, perception and association of specific words with specific meanings; selective attention to sensory stimuli; the intercultural dissimilarity of organizational concepts that are used to categorize the perceived sensory stimuli that appear to be similar or close to one another (e.g. beef may be considered food or taboo); the variability of individual interpretation and evaluation of information; the cultural influence on personal identity (self-image, self-esteem, social identity, etc.); the problem of ethnocentrism; the cultural preferences (social approval or disapproval) of specific communicative styles, scripts, topics and strategies; preferred means of handling specific situations such as conflicts.

Thus, cultural diversity can be one of the causes for misunderstandings and conflicts because culture influences to a large extent how individuals perceive the world around them, what meaning they attach to what they perceive, and it teaches people how to respond to those perceptions (Dong et al. 2008, Lustig & Koester 2013, Samovar et al. 2013, Hinner 2017). Misunderstandings may even result in unintentional conflicts (i.e. so-called pseudo-conflicts) (Hinner 2017).

Hence, some researchers claim that people need to interact with foreigners in order to develop intercultural communication competence (i.e. social metacognition (Veeman et al. 2006)). Intercultural communication competence implies to “promote an individual’s ability to respect cultural differences, foster multiple cultural identities, and maintain multicultural coexistence... [which] may enable individuals to be successful in the diverse cultural environment” (Dong et al. 2008).

Knowledge and awareness of cultural differences are significant in avoiding misunderstandings and perceiving the differences in meanings (cognition). Veeman et al. (2006) point out that metacognition (and social metacognition) is most effective if it is learned in the context in which it is to be used, i.e. real world situations. According to Frith (2012), metacognition can be developed through interaction and a willingness to communicate with others about the reasons for one’s own actions and perceptions as well as listening to the reasons one’s counterpart presents to explain her or his actions, i.e. practice self-disclosure.

The common denominator of all communicational activity is understanding. But understanding consists of many aspects, such as listening, interpretation, comparison, application of different reference schemes, cultural assumptions, attribution of meanings, use of stereotypes and prejudice in the everyday construction of meaning. But the result can be different – understanding, misunderstanding or disinclination to understand because of certain political and ideological factors (Jensen et al. 2006).

Mustajoki (2012) believes that the main reason for misunderstanding is the speaker’s “egocentrism”: the speaker’s goals are self-centred and s/he is too “economic” and “lazy” to monitor the recipient’s reactions and to design further turns accordingly.

Meenu Rani (2013) points at some barriers to effective multicultural communication: stereotyping, which includes four human actions leading to the creation of stereotypes (formation of “US”- and “THEM”-groups, preference for the In-group, illusions of Out-group homogeneity, expectancy confirmation), lack of
understanding and judgmental attitudes. She supposes that people stereotype because of their tendency to rank everyone and everything, so that people could interact with the world efficiently.

According to Meenu Rani (2013) lack of understanding can arise in case of differences in values, beliefs, communication styles, personality types, work styles, methods in reasoning. To avoid this barrier people must be accurate in understanding the thoughts, feelings, ideas, values, styles, desires and goals of others.

2.2 The comparison of Belarusian and American cultures

To better understand the reasons for cross-cultural misunderstanding we address Geert Hofstede's (Hofstede et al. 2010) cultural dimensions theory. The dimensions which are the ground for cultural comparisons include: power distance, individualism, masculinity, uncertainty avoidance, long term orientation, indulgence.

As Hofstede (Hofstede et al. 2010) defines, power distance is defined as the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally. Individualism is the degree of interdependence a society maintains among its members. The criteria of masculinity helps to discover what motivates people: wanting to be the best (masculine culture) or enjoying what you do (feminine culture). Uncertainty avoidance reveals the extent to which the members of a culture feel threatened by ambiguous or unknown situations. The dimension of long term orientation indicates how a society maintains links with its own past while dealing with the challenges of the present and future. Indulgence is used to measure the extent to which people try to control their desires and impulses.

As it has been found out by Piniuta (2017, 40-41), the USA differs from Belarus considerably in all the cultural dimensions except for long-term orientation and masculinity scores (Table 1).

Table 1 Cultural comparison of Belarus and the US

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Belarus (score)</th>
<th>US (score / difference)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Power distance</td>
<td>95</td>
<td>40 / 55</td>
</tr>
<tr>
<td>2. Individualism</td>
<td>25</td>
<td>91 / 66</td>
</tr>
<tr>
<td>3. Masculinity</td>
<td>20</td>
<td>62/42</td>
</tr>
<tr>
<td>4. Uncertainty avoidance</td>
<td>95</td>
<td>46/55</td>
</tr>
<tr>
<td>5. Long-term orientation</td>
<td>56</td>
<td>26/30</td>
</tr>
<tr>
<td>6. Indulgence</td>
<td>18</td>
<td>68/50</td>
</tr>
</tbody>
</table>
The hierarchy of dimensions is represented as follows (in the brackets, the difference is indicated):

1. individualism (66 points);
2. power distance and uncertainty avoidance (55 points);
3. masculinity (42 points);
4. long term orientation (30 points).

Thus, the Americans turn out to be more individualistic than the Belarusians and control their desires and impulses far less frequently. The Belarusians tend to expect and accept the seemingly unequal distribution of power and influence within organizations and institutions they belong to and preferably avoid ambiguous or unknown situations.

The given quantitative expression of dissimilarity between the Belarusian and American cultures illustrates the degree of probability of cultural barriers in intercultural communication of Belarusians with people from the US. Piniuta assumes that the USA (together with the UK, Canada, Australia and Ireland) belongs to the list of countries where the Belarusians have the higher probability of facing cultural barriers in communication (Piniuta 2017, 41-42).

It is clear that the results obtained by Piniuta (2017) are applicable to Belarusians and Americans in general, which allows us to hypothesize that one of the key extralinguistic factors influencing the cultural specificity of professional vocabulary is connected with the Hofstede's (Hofstede et al. 2010) dimensions of culture. The given research, among other minor objectives, is supposed to highlight the influence of dissimilarity mentioned above on communication within a specific professional environment, such as EFL (English as a Foreign Language)-teaching community.

3 Methodology and procedure

The methodology used in this research yields towards a mixed experimental, qualitative and quantitative approach to the semantic study of professional vocabulary (particularly in that of pedagogical discourse). The evidence was collected via an open-ended questionnaire aimed to elicit subjective definitions of professional vocabulary units from the participants employed in Belarusian and American educational establishments of various types as EFL-instructors. The content of the given definitions serving as the material for further studies was subjected to lexical-semantic analysis (Goddard & Schalley 2010, 107–111) combined with the analysis of the semantic structure of definitions (Silva et al. 2016) and the meaning condensation method (Kvale 1996). The qualitative results obtained after the initial analysis required quantitative treatment to measure the cultural specificity of English pedagogical vocabulary terms in numbers, which was made possible by introducing the mathematical formula for calculating the cultural specificity index, with due consideration of quantitative research methods used in the contemporary cognitive linguistics (Glynn & Fischer 2010, Akhmetova & Shaymardanova 2015).
All the complexity of methodology outlined here was necessary to answer the current research questions that can be identified as follows:

1. What units of pedagogical vocabulary used by native and non-native speakers may hypothetically increase the risk of linguo-cultural misinterpretations?
2. How do the Belarusian and American users of English pedagogical vocabulary perceive the parts of their professional environment denoted by the English words they use in speech?
3. What features reflect the cultural specificity of the semantics of pedagogical vocabulary units under consideration?
4. Is there a way to find the numerical expression for the cultural specificity of professional vocabulary (the cultural specificity index) according to which the language units could be ranged?
5. What factors impact the cultural specificity degree, thus reducing or raising the risk of linguo-cultural misinterpretations?

All the steps of the research procedure were carried out without any use of LLMs.

### 3.1 Data collection and preliminary analysis

In the study, firstly, 176 English lexemes belonging to professional pedagogical vocabulary were selected by 6 expert teachers of English from Belarusian universities (the average length of pedagogical service — 15.5 years) from several lexicographic sources (IBE Glossary of Curriculum Terminology, Great Schools Partnership 2015, Petty 2009) by means of the continuous sampling method.

To define the general usability of a word in the professional pedagogical discourse, the principles of frame semantics (Fillmore 2006) were adhered to in the process of vocabulary selection. In frame semantics, “a word represents a category of experience” (Petruck 1996), belonging to a system (or frame) of concepts “related in such a way that to understand any one concept it is necessary to understand the entire system; introducing any one concept results in all of them becoming available” (Ibid.). Thus, the core of the frame “Education” embracing two sides of the concept represented by teaching and learning must include the vocabulary units with one or more of their dictionary definitions containing at least one of the words *education, teaching, learning* or their synonyms or derivatives, as shown in the following example:

**INSTRUCTION**

1. *This term also means* education, *which refers to the teaching and learning of knowledge, skills and attitudes* (Orellana 2017).
2. “*Anything that is done purposely to facilitate learning*, “any intentional effort to stimulate learning by the deliberate arrangement of experiences to help learners achieve a desirable change in capability” (Wang 2010).
According to this model, 176 words were included into the long-list of lexemes belonging to the core of the frame “Education” and representing the basic professional pedagogical vocabulary of a predictably regular occurrence in pedagogical discourse. This long-list was further analyzed on the criteria of semantic specificity (Hixon et al. 2012), social institute marker (Newmark, 2010), value and recipient orientation (Hofstede, 2010).

Finally, 26 lexemes were singled out for detailed investigation as the ones that could pose a risk of linguo-cultural misinterpretations due to their relatively low semantic specificity (i.e. “how likely a value for a database attribute is to return a single database instance” (Hixon et al. 2012, 260)), to the complicated relationship between the word, the speaker and the setting (i.e. similar expressions related to slightly different environments and used by speakers of similar social position but different national background belong to the lexical units serving as social institute markers (Newmark 2010, 70)) and to national identities, values, institutions and social practices rooted in the meaning and functionality of the given language units (Hofstede 2010, 22–23). The short-list of the given 26 words was used as the material for the linguistic experiment on subjective definitions.

The evidence for the next phase of the study was obtained from an open-ended questionnaire handed out personally and online to the participants from the USA and the Republic of Belarus.

In Belarus, the questionnaire was distributed among EFL instructors working at Baranovichi State University (15 people) and EFL teachers from Baranovichi Gymnasium #1 and #2 (20 people). The participants from the USA were represented by 5 people: Fulbright representatives J. Meyerson and K. Karstens, who worked as EFL Teachers at Baranovichi State University (Belarus) in 2018–2019; M. Bailey, an English Language Fellow involved in teacher training and adult education at Minsk State Linguistic University in Minsk, who previously was a university English teacher in China and Albania; K. Panian and J. Pihlaja.

All the participants were given the same short-lists of 26 lexemes organized alphabetically and given the following task: “Explain the meaning of the given pedagogical vocabulary units in writing according to your own interpretation of the concepts they denote”.

The participants were encouraged to avoid using dictionaries or other sources of definitions so that the samples obtained as a result of the questionnaire reflected personal interpretation of pedagogical vocabulary units expressed in English by expert American and Belarusian EFL teachers. As interpretation occurs when an individual attaches importance to observations and their relationships, thus making sense of perceptions, organizing our experience to guide our behavior, the verbal expression of its result is the key to discovering the beliefs and norms of the native culture that influence the meaning and sense of words connected with pedagogical reality and may become an obstacle in cross culture link (Meenu 2013).

As a result of the questionnaire, 156 samples of subjective definitions given by American and Belarusian EFL-teachers were collected.
On the basis of the questionnaire materials, the lexical-semantic analysis of every subjective definition was undertaken to represent each separate meaning expressed by the participants as a set of semantic components, each of which would describe a certain distinguishing feature of a part of pedagogical reality under consideration. Below is the example of the way how we analyzed the structure of a subjective definition of a word-combination authentic task given by one of the Belarusian respondents.

**Table 2**

**Example of the lexical-semantic analysis of a single subjective definition**

**Authentic task** – a task performed by native speakers in everyday life. In EFL study – a task offered to students to re-enact the situation with the maximum degree of authenticity.

- · performed by native speakers (the doer of the action)
- · performed in everyday life (the location / environment)
- · offered to students (the doer of the action)
- · offered to re-enact the situation (the action required to do)
- · the maximum degree of authenticity (the degree or manner)

When each separate subjective definition of the word given by Belarusian participants underwent the same micro analysis, the extracted recurrent or synonymous semantic components of different definitions were crystallized via meaning condensation (Kvale, 1996), while all the unique components of word-meanings were left unchanged. Both crystallized recurrent and unique semantic components were arranged into a list. The same procedure was performed with all the definitions elicited from American responders. As a result, two lists of semantic components were placed one opposite the other to compare the elements of meaning emerging in the minds of pedagogical vocabulary users from two different countries when they try to explain the meanings of English words connected with their professional practices, as can be seen in Table 3.
Table 3
Semantic components of the meaning of a word-combination authentic task in American and Belarusian interpretations

<table>
<thead>
<tr>
<th>Semantic units in American interpretations</th>
<th>Semantic units in Belarusian interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Authentic task</strong></td>
<td><strong>Authentic task</strong></td>
</tr>
<tr>
<td>● exercises for foreign learners;</td>
<td>● a task that native speakers would do;</td>
</tr>
<tr>
<td>● to practice vocabulary and other components of the English language;</td>
<td>● performed by native speakers;</td>
</tr>
<tr>
<td>● the language used by native English speakers;</td>
<td>● an everyday life situation;</td>
</tr>
<tr>
<td>● in everyday life;</td>
<td>● something that puts real communicative demands on learners;</td>
</tr>
<tr>
<td>● help learn and prepare for real-world scenarios;</td>
<td>● offers to reenact the situation with the maximum degree of authenticity.</td>
</tr>
<tr>
<td>● the opposite of a non-authentic (not replicating native speakers’ daily tasks);</td>
<td></td>
</tr>
<tr>
<td>● the language used to complete tasks in everyday life.</td>
<td></td>
</tr>
</tbody>
</table>

The parallel comparison of the extracted semantic components of subjective definitions has shown that some of the features are mentioned by both the American and Belarusian EFL-teachers (e.g. in everyday life, native-speakers), while the other features are present exclusively in American (e.g. help learn and prepare for real-world scenarios) or Belarusian (e.g. offers to reenact the situation with the maximum degree of authenticity) explications of the word’s meaning. The exclusive (culture specific) components of subjective definitions of this kind reflect the cultural specificity of the semantics of pedagogical vocabulary units from a qualitative point of view. In this research, an attempt has been made to find the way to present these qualitative data in a quantitative form so as to measure the risk of linguo-cultural misinterpretations in numerical values. For this purpose, the term “cultural specificity index” has been introduced.

### 3.2 Cultural Specificity Index: concept and calculation

The formula to measure cultural specificity of professional vocabulary units was developed at the given stage of our research by analogy with another quantitative method of the contemporary cognitive linguistics, particularly the method of calculating the brightness index of verbal associations (Akhmetova & Shaymardanova 2015) and can be expressed mathematically as follows:

\[
CSI = \frac{\sum_{exc.}}{\sum_{total}}
\]

In the given formula, CSI is the abbreviated form of the term “Cultural Specificity Index”, \(\sum_{exc.}\) represents the sum of exclusive semantic components of the word’s subjective definitions in both American and Belarusian interpretations and \(\sum_{total}\) stands for the total number of semantic components of both American and Belarusian subjective definitions. The quantitative (decimal) results
obtained by using this formula are to vary between 0 (which means the absolute equivalency or internationality of the word's content for both cultures) and 1 (meaning absolute cultural specificity or the highest risk of linguo-cultural misinterpretation).

Table 4 serves to demonstrate the way how the suggested formula is used. The exclusive semantic components discovered in the definitions given only by the representatives of one and the same cultural group are underlined. It should be noted that some semantic components that partially coincide in American and Belarusian sets are difficult to split up into smaller clusters of meaning with a clear lexical form of expression. Such components are counted as 0,5 of a single component of meaning. In many cases the full meaning of one semantic component of a subjective definition given by a Belarusian teacher is constituted by two semantic components (or two elements of different semantic components) of a definition given by an American teacher, and vice versa. For example, ‘a long-term thing’ in Belarusian interpretations is actually echoing the American ‘further practice’ and ‘extend a student’s learning’ and therefore is not counted as an exclusive component.

Table 4
Defining the cultural specificity index of a word-combination home assignment in American and Belarusian interpretations

<table>
<thead>
<tr>
<th>Semantic units in American interpretations</th>
<th>Semantic units in Belarusian interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Home assignment (Cultural Specificity Index: (3,5 + 1,5) / (8 + 8) = 0,31)</strong></td>
<td><strong>a piece of work given as part of their studies</strong></td>
</tr>
<tr>
<td>● assignments given to complete at home</td>
<td>● is done outside the classroom</td>
</tr>
<tr>
<td>● to extend a student’s learning outside of the classroom</td>
<td>● a long-term thing</td>
</tr>
<tr>
<td>● allow to practice the content from that day’s lesson</td>
<td>● project is more commonly used</td>
</tr>
<tr>
<td>● guides the teacher in planning future lessons</td>
<td>● is given in class</td>
</tr>
<tr>
<td>● by demonstrating what students understand</td>
<td>● examples include completing the text, learning new words, talking about this family (0,5)</td>
</tr>
<tr>
<td>● students need further practice in</td>
<td>● to develop particular skills</td>
</tr>
<tr>
<td>● examples include writing a short story, answering questions to a listening exercise (0,5)</td>
<td>● to deepen the knowledge</td>
</tr>
<tr>
<td>● teachers use the word “homework” for assignment to be completed at home</td>
<td><strong>total amount of semantic components:</strong> 8</td>
</tr>
<tr>
<td><strong>total amount of semantic components:</strong> 8</td>
<td><strong>exclusive components amount:</strong> 1,5</td>
</tr>
</tbody>
</table>

The cultural specificity index has been used to measure the risk of linguo-cultural misinterpretations of the 26 English words belonging to the short-list of this study. It has served us as an instrument to classify the selected lexemes and interpret them from the point of view of intercultural factors influencing their meaning.
4 Results

The preliminary analysis of the subjective definitions given by the participants of the research provided some information as to how the Belarusian and American users of English pedagogical vocabulary perceive the parts of their professional environment denoted by the English words they use in their professionally-oriented communication. Taking into account the frequency of using the words teacher and student, which denote the main participants of the educational interaction, in the definitions of pedagogical vocabulary units given by expert American and Belarusian EFL teachers, it can be concluded that the representatives of these two cultures perceive their professional environment differently when it comes to their own interpretation of the components of educational process.

The American EFL-teachers appear more personality-oriented than their Belarusian colleagues, because they mentioned the participants of the educational process more frequently explaining the meaning of words related to the pedagogical discourse. The word teacher was used 24 times (30.8% of the sample microcontexts) in the subjective definitions given by the Americans, and the word student – 40 times (51.3% of the sample microcontexts), while the Belarusians use the word teacher 8 times (10.3% of the sample microcontexts) and student – 17 times (21.8% of the sample microcontexts), which makes them look rather environment (institution)-oriented and action-oriented. At the same time the given findings prove that educational process is viewed upon as student-centred rather than teacher-centred by both American and Belarusian EFL teachers.

The answer to the third research question, concerning the features of cultural specificity of pedagogical vocabulary units under consideration from the point of view of their semantics, was found at the level of further lexical-semantic micro analysis of the subjective definitions elicited from American and Belarusian respondents. After the whole bulk of research material had been processed and the parallel linguocultural comparison of the semantic components of subjective definitions started, special attention was paid to exclusive (culture specific) components peculiar of the definitions given only by the Americans or by the Belarusians. These particular components make all the cultural specificity of one and the same English linguistic unit used in the pedagogical discourse on the American and Belarusian soil, thus creating the grounds for intercultural misunderstanding. Therefore, we found it necessary to look for common semantic features that would make it possible to unify and categorize these components of meaning.

As a result of the attempt to organize the culture specific components of subjective definitions into broader semantic fields, it was established that the cultural specificity of pedagogical vocabulary for both American and Belarusian EFL-teachers is in most cases concentrated within practically the same semantic fields. As shown in Fig. 2, according to the number of exclusive semantic components of subjective definitions, the representatives of the American and Belarusian educational communities tend to reveal most of their cultural peculiarities in the way they view such aspects of various elements of their professional environment as PURPOSE, ACTION REQUIRED, DIVERSITY and QUALITY.
Education is viewed upon as a purposeful process for everyone involved, but the American and Belarusian EFL-teachers appear to view its purposes slightly differently. Thus, when the American respondents refer to the purposes of certain pedagogical phenomena in their interpretation, they tend to reach out further than the in-class educational process, emphasizing helping the students apply knowledge to real life in the target communicative culture (e.g. “…help learn and prepare for real-world scenarios”, “…to produce a result or achieve a goal”, etc.) and facilitating their personal development and self-improvement (e.g. “…to encourage students to build language skills and soft skills”, “…in order to get a well-rounded education”, etc.). Such semantic features almost never occur (with the exception of the classical goal-setting patterns for the Belarusian educational system “…to develop particular skills”, “…to deepen the knowledge”, “…to help develop thinking”, which in most cases means skills and knowledge for the sake of skills and knowledge themselves) in the definitions given by the Belarusian respondents, concentrated on classroom practice per se (e.g. “…to achieve specific learning goals”, “…to complete the task”, “…in order to develop their classroom practice”, “…aims at reproducing some material that has been studied”, etc.).

The explanation of this peculiarity of the Belarusian interpretation of EFL-teaching/learning environment most probably lies in the echo of the country’s late Soviet and more recent post-Soviet past, when the EFL-classroom environment was practically the only place where one could experience a foreign language communication encounter, and when neither EFL-teachers nor their students actually believed that most of the learners of English would ever get the chance of finding themselves in an English-speaking country or facing a native speaker (or even a non-native English speaker) in their future professional life.

The feature that unites the interpretations given by the representatives of both educational systems is that some of the purposes mentioned in the definitions are purely linguistically oriented (e.g. “…to practice vocabulary and other components of the English language” (from an American EFL-teacher’s response), “…to develop speech” (from a Belarusian EFL-teacher’s response), etc.), which is quite logical, because the English language serves as the basic component of the educational content exchanged at the EFL-lesson.

Another semantic field standing out as a sphere of most frequent occurrence of exclusive semantic components in the definitions provided by the American and Belarusian EFL-teachers is the field of actions required to do in the framework of the pedagogical phenomena under consideration. Most of the actions mentioned by the respondents are connected with overall classroom management, which is organized differently in each country according to its pedagogical traditions, historical development and social prerequisites.

While the American respondents, presuming the active position of the learners and the teachers, tend to name actions in rather generic forms of expression (e.g. “…assignments given to complete at home”, “…allow to practice the content from that day’s lesson”, “…to give constructive criticism”, etc.), presupposing that specific types of actions in question may vary greatly from one American educational establishment
to another, the Belarusian EFL-teachers give a more detailed and specified description of actions required from students or teachers to do, which makes it possible to notice that most of the activities mentioned by the respondents can be classified as outwardly passive or only nominally communicative, mostly connected with information processing, observations and reproduction (re-enactment) of native speakers' communicative behaviour (e.g. “…synthesizing information from multiple sources of information”, “…watching other students’ activities”, “…to re-enact the situation with the maximum degree of authenticity”, etc.).

Whereas the Belarusians look concerned with the adherence to particular plans, rules and regulations (e.g. “…gives the steps that must be followed”, “…detailed information how smth should be done or operated”, “…forbids officials to express subjective opinions and give punishments”, etc.), the Americans often describe actions in relation to the public image of the educational establishment (e.g. “…to protect the respect of the institution and the value of the degree or certifications”, etc.).

There is also a noteworthy contrast revealed via the use of verbal expressions of modal meaning of obligation or necessity of actions required to do. The Belarusian EFL-teachers proved to express degrees of obligation in a more subtle and nuanced way using various verbal forms, such as the verbs must, should, require, forbid, while their American colleagues prefer choosing mainly the verbs require and allow. Thus, the professional conduct of the Belarusians appears to be more sensitive of the degree of obligation and prohibition.

Concerning the semantic fields of diversity and quality, the American respondents prove to be more aware of the diverse representation of the phenomena under interpretation, which is reflected in the numerous examples they give to explain the meaning of many words denoting the elements of their professional environment (e.g. “…are usually divided by majors and specific study tracks (e.g. Department of World Languages, Department of Biology, Department of History)”, “…high school students can take electives such as Orchestra, Theater, Graphic Design”, “…lesson material can be explained in many ways (PowerPoint presentation, videos, guest speakers)” etc.). The Belarusian respondents more often describe the features of the object of interpretation, according to which the given object is singled out of the other fragments of reality (e.g. “…the optional courses”, “…qualitative assessment received in response”, “…all children are of a similar age or ability”, “…clear specific statements”, “…easily reproduced”, “…a systematic, iterative process”, etc.). The specificity of examples and features recognizable only for the bearers of a certain communicative culture creates the intercultural difference in the understanding of meanings conveyed by the pedagogical vocabulary words.

Having calculated the cultural specificity indices for every vocabulary unit from the short-list of the study according to the CSI formula enabled us to single out 3 vocabulary groups according to the degree of cultural specificity that consist of the words creating the low (with the CSI from 0 up to 0.35), moderate (with the CSI between 0.35 and 0.70) and high (with the CSI from 0.70 up to 1) risk of intercultural misunderstanding. The given groups of words have been arranged as illustrated in Table 5 with green,
yellow and red rows meaning low, moderate and high risk of intercultural misunderstanding correspondingly.

**Table 5** Classification of culture-specific pedagogical vocabulary units according to their CSI

<table>
<thead>
<tr>
<th>Degree of specificity</th>
<th>Culture-specific vocabulary (with CSI given in brackets)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low risk of intercultural misunderstanding up to 0.35</td>
<td>year (academic) (0.25)</td>
</tr>
<tr>
<td></td>
<td>NATO phonetic alphabet (0.30)</td>
</tr>
<tr>
<td></td>
<td>home assignment (0.31)</td>
</tr>
<tr>
<td>Moderate risk of intercultural misunderstanding (from 0.36 up to 0.70)</td>
<td>job qualification (0.36)</td>
</tr>
<tr>
<td></td>
<td>lesson plan (0.38)</td>
</tr>
<tr>
<td></td>
<td>vocational course (0.38)</td>
</tr>
<tr>
<td></td>
<td>authentic task (0.45)</td>
</tr>
<tr>
<td></td>
<td>backward design (0.5)</td>
</tr>
<tr>
<td></td>
<td>peer observation (0.52)</td>
</tr>
<tr>
<td></td>
<td>K-12 students (0.54)</td>
</tr>
<tr>
<td></td>
<td>objectives (0.57)</td>
</tr>
<tr>
<td></td>
<td>rubrics (0.57)</td>
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<tr>
<td></td>
<td>stipend (0.57)</td>
</tr>
<tr>
<td></td>
<td>warming up (0.6)</td>
</tr>
<tr>
<td></td>
<td>questions (thin~) (0.63)</td>
</tr>
<tr>
<td></td>
<td>motivational strategy (0.64)</td>
</tr>
<tr>
<td></td>
<td>zero-tolerance policy (0.69)</td>
</tr>
<tr>
<td>High risk of intercultural misunderstanding (from 0.70 up to 1.00)</td>
<td>feedback (0.7)</td>
</tr>
<tr>
<td></td>
<td>grades (0.74)</td>
</tr>
<tr>
<td></td>
<td>collaboration (0.75)</td>
</tr>
<tr>
<td></td>
<td>electives (0.8)</td>
</tr>
<tr>
<td></td>
<td>questions (thick~) (0.80)</td>
</tr>
<tr>
<td></td>
<td>instruction (0.81)</td>
</tr>
<tr>
<td></td>
<td>department (0.83)</td>
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<tr>
<td></td>
<td>technology (0.92)</td>
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<tr>
<td></td>
<td>unification (1.00)</td>
</tr>
<tr>
<td></td>
<td>XQ (cross-questioning) (1.00)</td>
</tr>
</tbody>
</table>

The data presented in Table 5 vividly demonstrate that, as hypothesized previously, the quantitative measurement of cultural specificity of professional vocabulary by means of CSI formula does promote better understanding of communication breakdown risks in intercultural dialogue. Purely qualitative (semantic) criterion of analysis proves to be insufficient to single out and categorize vocabulary units representing the highest or lowest risk of intercultural misunderstanding, as the words placed to one and the same row of Table 5 according to their CSI turn out to belong to absolutely different semantic fields (e.g. year (academic) – time, NATO phonetic alphabet – teaching aids, home assignment – academic work) and, on the contrary, two words characterized by a notably high and low CSI often belong to one
and the same semantic field related to pedagogical discourse (e.g. questions (thin~) with CSI 0.63 – questions (thick~) with CSI 0.80, peer observation with CSI 0.52 – collaboration with CSI 0.75).

Thus, in-depth cultural interpretation of professional vocabulary as well as precise estimation of communication breakdown risk can be made possible by means of the combination of qualitative and quantitative methods – the lexical-semantic micro analysis of constituent parts of subjective definitions given by the users of the language (native- and non-native-speaking EFL-teachers) and the calculations of cultural specificity indices of words under consideration – which confirms the hypothesis put forward at the initial stage of the study.

The quantitative results obtained also prove that the criteria chosen at the starting level of the research to shortlist the 26 pedagogical vocabulary units hypothetically representing a relatively high risk of causing intercultural misunderstanding turn out to be workable, as there are no words in the selection with the CSI of 0 or lower than 0.2, and there are only 3 words out of 26 in the group of low risk of intercultural misunderstanding.

5 Discussion

The qualitative and quantitative analysis of subjective definitions of pedagogical vocabulary words undertaken in this research has presented illustrative evidence proving that a part of English pedagogical lexicon, including seemingly international words, increases the risk of intercultural misunderstanding. When EFL-teachers from different cultures are engaged into professional communication in English, there is a chance for either of the interlocutors to misinterpret a certain word, the meaning of which is always culture-specific to some extent. The degree of this cultural specificity may vary for different words, thus creating a higher or lower risk of misunderstanding. The results obtained are strongly relatable in the context of the problem raised by W. Wagner et al. (2014), which is connected with culturally laden meanings of words that are often compared across countries and treated as the same linguistic phenomena according their form and meaning without checking the conceptual equivalence. In addition to the methods that they suggested to make it possible to identify and refer to the semantic space of notions in cultures and language groups, we present a combined qualitative and quantitative (though quantity-oriented) methodological approach that enables researchers to express the resulting similarities or differences between cultures in digits, thus establishing a certain gradation of professional vocabulary units according to the degree of their cultural specificity. Such a gradation appears more illustrative from the point of view of vocabulary users than the “cultural metrics” introduced by W. Wagner and his co-authors (2014).

The intercultural difference in perception and interpretation of EFL-teachers’ professional environment is already observed on the stage of semantic micro analysis of subjective definitions given by the American and Belarusian EFL-teachers. However, the qualitative analysis is not enough to measure the extent of cultural specificity for every separate English word denoting a certain part of pedagogical reality. To measure the risk of misunderstanding in a more exact quantitative expression, the given research
suggests a new linguistic variable – cultural specificity index (CSI) and a method of calculating it according to the specific formula based on the ratio between the number of culture specific (exclusive) hyposemes and the sum total of all the components of lexical meaning expressed in the subjective definitions elicited from the American and Belarusian respondents.

The findings obtained after having applied the CSI formula to the linguistic material of the research turned out to be partly surprising: in many cases the words that are supposed to be “international”, such as job qualification, motivational strategy, collaboration, department, technology, or the words denoting seemingly widespread components of educational process, such as lesson plan, warming-up, grades, questions, feedback proved to differ greatly in their CSI and belong to the lexical groups of moderate and high risk of intercultural misunderstanding. The possible reasons for the words of this type to be characterized by a relatively high degree of cultural specificity lie in a number of linguistic and extralinguistic factors that increase the specificity of lexical meanings thus raising the risk of linguo-cultural misinterpretation.

The linguistic factors include

(a) the time of circulation of the term in the professional discourse, which in many cases is shorter for non-native speaking EFL-teachers and varies for different foreign words (cf. the English lexemes NATO phonetic alphabet (CSI 0.3) and electives (CSI 0.8) for Belarusian EFL-teachers communicating in English);

(b) the limitations of the multiplicity of meaning, which arise from the habitual use of a word in only one or a few meanings restricted to a small number of pedagogical contexts (especially if the word under consideration circulates in the professional communication of non-native speakers in English) or, on the contrary, multifunctioning of words, which some of the interlocutors can be unaware of;

(c) the influence of the mother tongue on the choice of specific foreign words denoting domestic pedagogical phenomena (e.g. the tendency to avoid using the word department in the academic context, because the similar-sounding loan-word in Russian or Belarusian is commonly used to denote a part of a business or law enforcement organization, and the preferable use of the word faculty to denote a part of a higher educational establishment, as there is a similar-sounding equivalent in Russian and Belarusian);

(d) the structure of the concept expressed by a word, including the components of meaning belonging to the semantic fields of PURPOSE, ACTION REQUIRED, DIVERSITY and QUALITY;

(e) the degree of anthropocentrism in the interpretation of pedagogical phenomena (the personality-oriented or institution-/action-oriented perspective).

Among the extralinguistic factors influencing the degree of semantic inequivalence of pedagogical professional vocabulary in American-Belarusian professional dialogue in English there are specific social and historical prerequisites leading to the conservation of national pedagogical traditions or the change of pedagogical reality, which is reflected in the interpretation of professional environment by EFL-teachers
The cultural specificity of pedagogical vocabulary is also influenced by the national standards and the current policies in education (e.g. the word *unification* (CSI 1.00) was given a much more detailed interpretation by the Belarusian EFL-teachers in comparison with their American counterparts) and the teacher's own experience and methodological toolkit (cf. *questions (thick~)* (CSI 0.8) and *questions (thin~)* (CSI 0.63)).

It should be noted that an important extralinguistic factor correlates with cultural dimensions theory (Hofstede et al. 2010) as the framework for comparing Belarusian and American cultures (Piniuta 2017) and lies in the noticeably high degree of American individualism and indulgence on the one hand and the proportionally high prominence of power distance and uncertainty avoidance for the Belarusians on the other hand. The influence of this dissimilarity reveals itself in the exclusive components of meaning singled out of the definitions of a major part of terms and concepts representing high risk of intercultural misunderstanding according to their CSI (the “red” group). The definitions of the words belonging to this group, according to the respondents from the US, contain the exclusive components united by the common core meaning of variability and diversity of the elements of pedagogical process arising from the necessity to satisfy the needs of various groups of students and to develop their individual personality features (indulgence and individualism). The definitions of the same words, which were given by the Belarusian respondents, are characterized by the exclusive components of meaning related to the broader concept of predictability, restrictedness, reproducibility and monitorability of the pedagogical process itself (uncertainty avoidance and power distance).

The results of the study presented in the article are only preliminary and by no means exhaustive. The study has a number of limitations, such as:

- sample size (especially concerning the number of American respondents, who are difficult to reach from Belarus);
- sample profile (the participants of the study are EFL-teachers of various age-groups and affiliations, but most of the Belarusian respondents reside in the town of Baranovichi (Brest Region, the Republic of Belarus), and all the American respondents have personal experience of teaching in Belarus, which might have influenced their understanding of pedagogical reality);
- data collection process (part of the Belarusian respondents were asked to give their written subjective definitions of pedagogical vocabulary words in real time, with the researchers present in the same room, while the rest of their Belarusian colleagues, as well as all the participants from the US, responded via Internet, providing their replies independently whenever they found it appropriate);
- lack of prior exploratory studies (there have been only a few articles exploring American and Belarusian professional culture differences, all of them written by Belarusian researchers, and none of them presented any methodology for quantitative analysis of linguistic data selected that could be relevant for the aim and objectives of the given research).

Nevertheless, the material collected was sufficient to develop the appropriate methodology for recognising and processing the quantitative indicators of misunderstanding risks rooted in the cultural
dissimilarity of concepts that lie behind the same verbal forms.

Much future work will be needed to broaden the scope of the research, explore the domains in which the methodology developed specifically for the given study can be applied, and undertake a finer-grained analysis to differentiate the influence of linguistic and extralinguistic factors on the subjective definitions of the same professional terms from the point of view of native and non-native speakers of a language.

6 Conclusion

In this study, the quantitative indicator that shows the degree of semantic in-equivalence of pedagogical culture-specific vocabulary (cultural specificity index) is newly introduced to determine the groups of vocabulary units of low, moderate and high risk of cultural misunderstanding that may arise in professional communication between American and Belarusian teachers interacting in English. As it has been previously hypothesized and proved by the results obtained by means of quantitative representation of semantic specificity of pedagogical vocabulary units under consideration, the cultural specificity index calculation promotes better understanding of communication breakdown risks in intercultural dialogue, as it is hardly possible to predict the degree of specificity of a vocabulary word only by its etymology, form, usage or frequency of occurrence in communication.

The answers to the research questions illustrate that the respondents from the US and Belarus are unanimous in treating education as a student-centred process, but the American EFL-teachers turn out to be more personality-oriented than their colleagues from Belarus, who appear to be rather environment (institution)-oriented and action-oriented. The research findings also indicate that most of the cultural peculiarities of pedagogical vocabulary are reflected by the way the American and Belarusian EFL-teachers personally view such features of the educational process as PURPOSE, ACTION REQUIRED, DIVERSITY and QUALITY.

As for the possible factors increasing the cultural specificity of pedagogical lexicon, the purely linguistic ones include the time of circulation of the term in the professional discourse of the country or culture under consideration, the limitations of the initial multiplicity of lexical meaning, mother tongue interference, the structure of the concept expressed by a word. The key extralinguistic factors are social and historical prerequisites driving the development of pedagogical reality, the national standards and the current policies in education, the teacher’s personal experience and methodological toolkit, and, finally, dissimilarities between cultures detected in Geert Hofstede’s cultural dimensions of power distance, individualism, masculinity, uncertainty avoidance, long term orientation, indulgence.

The results obtained point to the need for further research of a more voluminous compilation of the most frequently used pedagogical (or any other professional) vocabulary units aimed to establish their cultural specificity indices according to which words can be classified as understandable, mostly understandable or potentially misunderstandable in multicultural professional discourse. The findings, as well as the methodology itself, can be further used in dictionary compiling and textbook material selection. In
particular, we consider the prospect of designing the guide to culture-specific professional vocabulary as a tool for intercultural dialogue and mediation in EFL teacher training.

**Declarations**

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**Conflicts of interest**

All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

**Ethics approval and consent to participate**

All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki.

**Data Availability**

The datasets generated and analysed during the current study are available from the corresponding author on reasonable request.

**Author Contributions**

Volha Leon designed the formula to calculate the cultural specificity index, developed the linguistic methodology relevant to the research questions and prepared the final draft of the manuscript with contributions from all co-authors. Iryna Piniuta was responsible for conceptualization and methodology of the research, brought up the research problem, provided the framework for the manuscript, outlined the phases of the linguistic experiment, established contacts with the English-speaking participants of the experiment, suggested the series of working hypotheses and pointed at the differences in the cultural
dimensions as one of the factors influencing the cultural specificity indices of pedagogical vocabulary words. Tatyana Karachun took part in the collection of linguistic material, analyzed the subjective definitions collected from the respondents, and calculated the cultural specificity indices for all the 26 words organizing them into groups according to the risk of cultural misunderstanding. Inessa Kryshtop carried out a critical review of previous studies related to the topic of the research and justified its social relevance. All authors read and approved the final manuscript and commented on its previous versions. All authors have accepted responsibility for the entire content of this manuscript and approved its submission.

References


**Figures**

![American Interpretation](image1.png)

![Belarusian Interpretation](image2.png)

**Figure 1**

The semantic fields characterized by the greatest degree of cultural specificity