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A CORPUS-BASED ANALYSIS OF SPECIALIZED TERMINOLOGY IN ENGLISH HYDROMELIORATION TEXTS

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Abstract: Hydromelioration, which is the optimization of land productivity through water control, can be demanding with its sophisticated and intricate wording. The approach taken in this study is a corpus-based one to analyze the key term use, development, and translation in English hydromelioration texts. Analysis was conducted on a corpus made up of scientific articles, technical guides, and case studies with the use of frequency analysis, collocational analysis, semantic grouping, and concordance analysis. The outcome of the study indicates consistent developments in the terminology, most importantly in the development of new terms corresponding to the progress of technology and the deepening of older terms. The conclusion underscores the powerful impact of standardization of terminology in the vernacular in different languages which complicates translation into other languages, especially Uzbek. The research results demonstrate an understanding of hydromelioration and offer an applied value for development regarding communication, teaching, and partnership in the field.

Keywords: Hydromelioration, specialized terminology, corpus-based analysis, water management, translation challenges, agricultural practices.

Introduction

Like other areas of specialization, Hydromelioration (the improvement of land's productivity through the control of water via irrigation and drainage) features a system of exact terms. The terminology in the literature of hydromelioration explains its multidisciplinary scientific character and must serve communication needs, especially in multi-lingual and academic settings (Baker, 2018; Gibbons, 2003). This research intends to perform a corpus-based study of the specialized vocabulary of English texts on hydromelioration and analyze its patterns of use, its development, and its translation to other languages, particularly Uzbek.

Hydromelioration practices differ in many countries across the globe, but English has become the predominant language of technological publication and international

collaboration and research in the field. This shift of dynamics poses benefits alongside some complications, highlighting the need to understand the specialized terminology which is indispensable for proper comprehension and knowledge transfer as used in English-language hydromelioration texts. In order for the same concepts and solutions to be submitted by several countries, a specific order and coordination must be reached.

Very few works have been published on the language features of hydromelioration, with most of the literature focusing on scientific discourse in other disciplines, exploring its interdisciplinary branches. Pre-existing studies tend to overlook the complex interconnections of prime concepts, lexical change, interdependencies, and the difficulties they may pose for non-native English speakers. More precisely, the gap in interdisciplinary research on the systematic description of terminology and the ontology of its discourse is highly pronounced. This research intends to address this gap by defining the paradigmatic hierarchies of terms in English hydromelioration.

Methods

Corpus Selection

A corpus of texts on hydromelioration was formed which included scientific articles, reports, technical guides, and case studies on various water management systems and soils and their irrigation systems. Selection criteria emphasized text relevance by focusing on publications from the past twenty years (McEnery & Wilson, 2001).

Analytical Techniques

The analysis was conducted with the use of multiple methods:

- 1. Frequency Analysis:** Tracking the most relevant terms within the corpus to determine which concepts dominate the field (Biber et al, 1998).

2. Collocational Analysis: Studying words that share a co-occurrence tendency, illuminating the interconnections between different processes or technologies in hydromelioration (Sinclair, 1991).

3. Semantic Grouping: Classifying concepts by the meanings and roles such as those referring to the soil properties: “salinity,” “acidity,” “fertility,” etc. (Halliday and Matthiessen, 2014).

4. Concordance Analysis: Checking the context of focus words to show how these terms are used in various sentences (Tognini-Bonelli 2001).

A combination of these methods offered a balanced perspective on the issues of terminology in hydromelioration across various documents.

Results

Word Frequency

The investigation showed that irrigation systems, drainage systems, and waterlogged soils were among the most frequently used words. These concepts are fundamental in hydromelioration, as that is one of its major subfields, and informs one of the processes used in them (Kirk, 2013).

Collocational Patterns

Collocational studies confirmed that specific terms from a given hydromelioration process worked together, such as drip irrigation and automated water management. This shows collocation patterns specific to certain processes in a field (Stubbs, 2001).

Categorization of Terms

Grouping semantically or by meanings of defined words yielded a cluster of those associated with soil management: salinity, acidity, and soil fertility. This grouping reveals the soil attributes that are hydromeliorated (Baker, 2018).

Change of Terminology Over Time

The research also brought to light some other concepts such as the use of smart irrigation systems and precision agriculture which are due to new technologies in this area. Furthermore, concepts such as irrigation have transformed into more encompassing terms through the addition of a variety of techniques, termed as more sustainable methods (Gibbons, 2003).

Discussion

This corpus-based analysis draws attention to the relevance of specialized terminology in hydromelioration. Its language attained the level of precision necessary for clear communication, which is vital for scientific research, practical work, or policy formulation (McEnery & Wilson, 2001). The history of the terminology within the field is, in part due to technological development and multidisciplinary approaches, evidence for the evolution of the field.

Translation Problems

Translating hydromelioration terminology into other languages, Uzbek in particular, poses a challenge. Some terms have equivalents, but others require modification or new term creation. The analysis can help explain certain translation choices found in the literature and propose adequate equivalents (Kirk, 2013).

Professional Use

Improving the quality of scholarly communications, assisting in translation activities, advancing professional education, promoting global interrelations, these are some of the outcomes that require practical attention. Standardized terminology would increase understanding and communication between researchers and practitioners from different nations (Tognini-Bonelli, 2001).

Conclusion

Studying the specific terminology used in English texts about hydromelioration through a corpus-based approach sheds light on the significant aspects in regard to the

development, use, and translation of concepts in the discipline. Analyzing the marked relative occurrence of certain terms within a given context helps understanding the particular language that propels the practices related to hydromelioration. Such contribution to the scholarship of the discipline serves the purpose of formulating controlled vocabularies which enhance the information exchange, educational endeavors, and cooperation on the international scale concerning research on hydromelioration.

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