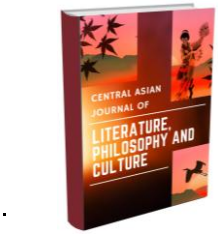

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Article

Inclusive Approach in The Provision of Lexicographical Sources for Individuals with Special Educational Needs

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Abstract: The article establishes the necessity of digital linguistic dictionaries within the inclusive education system and outlines the developmental stages of a mobile application featuring an explanatory audio dictionary of modern linguistic terminology. It discusses the role and significance of voice-based lexicographical resources in the academic and scientific activities of students and researchers. The research highlights how these tools facilitate learning for individuals with diverse needs by bridging the gap between traditional text and accessible audio formats.

Keywords: Audio Content, Mobile Application, Inclusive Education, Media Linguistics, Computational Linguistics, Loan Terms, Lexicography, Multimodal Dictionary, Electronic Platform, Social Innovation

1. Introduction

In the modern system of inclusive education, the challenge of mastering scientific terminology remains critical for students and researchers with visual impairments. Linguistics terminology, in particular, possesses complex semantic and pragmatic structures that often require visual and contextual assistance to be fully understood. However, existing dictionaries are predominantly text-based and lack systematically developed audio or multimodal formats [1].

Electronic dictionaries utilized in global practice possess multimodal capabilities [2], where terminological databases stand out as systematic conceptual structures [3]. Nevertheless, inclusive platforms featuring audio components often lack terminological consistency [4]. From this perspective, the preparation and integrated practical implementation of terminological audio dictionaries and their mobile applications remain underdeveloped fields.

It is well known that explanatory dictionaries of linguistic terms have been created within Uzbek linguistics. The contributions of linguists such as A. Hojiyev, N. Mahkamov and I. Ermatov [5], and D. Khudoyberganova are significant in this area. Furthermore, dictionaries consisting of terms and definitions related to specific branches of anthropocentric linguistics have also been compiled in Uzbek linguistics. Examples include D. Khudoyberganova's *"Brief Explanatory Dictionary of Ethnolinguistic Terms"* [6] and M. Yuldosheva's *"Explanatory Dictionary of Pragmalinguistic Terms"*.

The creation of audio content and a mobile application based on the materials of the *Explanatory Dictionary of Ethnolinguistic Terms* [7], presented to users via the Google Play platform, represents an initial experiment in conducting research in Uzbek media linguistics and computational lexicography in accordance with the principles of inclusivity.

However, the absence of a voiced, universally designed explanatory dictionary of various linguistic branches in the Uzbek language, coupled with the incomplete formation of audiodescriptive methodologies (the verbal expression of visual information or the oral interpretation of data presented in graphic schemes and tables), creates a scientific gap in this field. Consequently, equal opportunities in inclusive education are not fully realized. In this regard, this research is noteworthy for its focus on resolving the issue through a comprehensive approach by presenting linguistic terms to the broad scientific community via voice and mobile technologies.

2. Materials and Methods

In the current context of globalization and digital transformation, the forms of knowledge transfer are undergoing radical changes. From this perspective, delivering linguistic knowledge not only through text but in a multimodal format—specifically through audio tools—is a matter of great relevance. Such an approach holds significant social and pedagogical importance, particularly for users with visual impairments. This, in turn, necessitates the creation of an innovative, systematic, and explanatory audio dictionary of linguistic terms.

The methodological foundation of this research comprises modern linguistic, psychological, and technological theories. The research methodology harmonizes scientific precision, practical effectiveness, and technological innovation. With its content and technical solutions, this product serves as an advanced, practice-oriented technological tool for the fields of linguistics and education.

In preparing the audio content for this lexicographical study, the *"Explanatory Dictionary of Modern Linguistic Terms"* authored by D. Khudoyberganova serves as the primary source. This is because it systematically compiles and explains the core terms used in modern linguistics. This dictionary holds great scientific, methodological, and practical significance, with a particular focus on explaining terms related to new branches of linguistics. The creation of this dictionary is linked to the necessity of organizing the terminological system in Uzbek linguistics and standardizing it on a unified scientific-theoretical basis. By providing clear, consistent, and scientifically grounded definitions, it serves to eliminate ambiguities in scientific discourse caused by new concepts formed in recent years, terms introduced under the influence of foreign scientific schools, and their varying interpretations.

One of the unique features of the dictionary is that its terms are explained based on modern linguistic paradigms. Each term is explained not just from a lexical standpoint, but alongside its theoretical content, field of application, and role within a scientific context. This allows the user to gain a deeper understanding of the term's essence. Another important aspect of the dictionary is its construction based on an anthropocentric approach. That is, language is interpreted in connection with human activity, thought, and communicative needs. This approach is one of the main trends in modern linguistics, implying the study of language not merely as a structure, but as a system inextricably linked to the human factor. For this reason, many terms in the dictionary are explained in relation to human speech activity, communicative strategies, and pragmatic goals. Each term is presented in alphabetical order, with its explanation provided clearly and concisely. In some cases, synonymic variants of terms or their equivalents in other languages are also indicated. This expands the possibility of using the dictionary not only in the Uzbek language but also within the international scientific environment.

Furthermore, the explanations significantly reflect which scientific direction each term belongs to [9, 112].

Considering that the information reflected in the dictionary's audio content is perceived by users through the sense of hearing, it is necessary to supplement the recorded explanations with additional vocal descriptions. It is required to enrich the audio description with prosodic tools such as intonation, stress, pauses, and tempo, as these clearly express the meaning of the terms. Beyond merely explaining terms, their communicative functions in the speech process and stages of acquisition are also taken into account. This type of educational-scientific product covers fields such as cognitive linguistics, pragmalinguistics, sociolinguistics, linguoculturology, psycholinguistics, associative linguistics, gender linguistics, media linguistics, text linguistics, ontolinguistics, linguopersonology, and discourse studies, reflecting the semantic-functional characteristics of terms in an accessible manner.

3. Results and Conclusion

The research findings contribute significantly to the development of speech competence among students with visual impairments, the expansion of their scientific thinking, and the creation of equal opportunities in academic activities. Furthermore, this media product aligns with globally evolving principles of inclusive education and proposes a new scientific approach by presenting linguistic knowledge in a multimodal (audio) format. The audio dictionary also serves as an essential resource for the standardization of terminology, its consistent application, and the enhancement of scientific communication efficiency. Thus, it functions as an innovative study offering solutions to pressing problems in modern linguistics [8].

As previously noted, the primary technological outcome of the study is an auditory inclusive dictionary created in the form of a mobile application. Each term is entered into the mobile app's audio content separately, accompanied by its definition. This, in turn, makes it easier for users to find the necessary sections of the dictionary materials. Through this software, while listening to each term and its definition in audio format, users can rewind or fast-forward information by five seconds. Information regarding the duration (seconds or minutes) of the vocal expression for each term is provided, allowing users to track progress during playback. Additionally, dedicated sections are allocated for information about the authors, sharing the app with other users, rating the application, and providing feedback. The mobile application is developed using the "Kotlin" and "Java" programming languages and operates on Android OS devices [9].

Since the software is built on audio content, it expands the user's ability to acquire information through listening. This is particularly effective for users with a dominant auditory learning style. To ensure convenience, the mobile audio dictionary application should be made available for download via the internet. For this purpose, placing the program on the Google Play platform for public dissemination is advisable [10].

The application's ability to function in offline mode ensures usability even in conditions without network connectivity. Such technological solutions promote the widespread use of the Uzbek language in the modern digital environment and provide an impetus for developing a culture of digital dictionary creation.

Through the implementation of this research, the explanatory audio dictionary of modern linguistic terms and its mobile application will significantly expand educational opportunities for students and researchers with visual impairments. Consequently, the quality of inclusive education will improve, and the integration of persons with disabilities into higher education and scientific activities will strengthen. By serving social equality, the research creates opportunities to ensure freedom in learning. From an economic perspective, this product, as an innovative digital educational resource, can be widely used

in the educational system, integrated into e-learning platforms, and potentially commercialized in the future [11].

Furthermore, the technologies and content materials forming the basis of the research work will contribute to creating new jobs in the ICT and education sectors. The results align with global trends in inclusive technologies and contribute to the development of a digital inclusive environment in Uzbekistan. In this manner, the research becomes a factor for sustainable development at the intersection of language, technology, and economy [12, 13].

The resulting audio dictionary mobile application can be offered as a necessary resource for educational organizations, libraries, special schools, and scientific centers. The app can be monetized through a free basic version and expanded paid features (premium content, specialized courses) [14].

This electronic dictionary program possesses a high level of scientific, practical, and social value; it can be commercialized not only as a research result but as a fully functional digital product. This achieves the stimulation of social innovation. At the same time, the research serves as a foundation for preparing new startup projects in digital linguistics and inclusive technologies within the republic [15].

4. Conclusion

In an era where global attention is increasingly focused on creating a barrier-free environment and equal opportunities for all in educational and scientific activities, digitized linguistic resources and terminological audio dictionaries occupy a special place. A dictionary of linguistic terms, prepared in a format optimized for auditory comprehension, is of paramount importance for users with visual impairments. To achieve this, modern linguistic terms and their definitions must be voiced, supplemented by additional audio descriptions where necessary.

The audio content of the dictionary is formed based on these voice recordings. Subsequently, an inclusive product database and software are developed and presented to the general public as a mobile application. These stages are carried out in a logical sequence, ensuring the effective completion of the research. This audio application is a linguistic software product developed through an innovative approach to providing educational-scientific resources in media linguistics, computational linguistics, Uzbek terminology, and lexicography.

Popularizing the research results provides a user-friendly interface that allows individuals with visual impairments to independently use dictionary materials by listening to audio data. Furthermore, this linguistic program is essential within the educational system for learning the meanings of loan terms, developing correct pronunciation skills, and teaching the Uzbek language to foreigners. From this perspective, compiling and digitizing terminological dictionaries remains one of the most urgent tasks facing Uzbek computational linguistics.

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