LINGUISTIC CHALLENGES IN THE STANDARDIZATION OF UZBEK LANGUAGE TERMS (DEVELOPING NEW TERMS TO REFLECT EMERGING TECHNOLOGIES AND CONCEPTS)

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A R T I C L E I N F O.	Abstract
Keywords: Uzbek language terminology, Standardized terminology, Specialized fields, Emerging technologies, International standards, Linguistic challenges, Terminology development, Collaboration, Standardization, Limited resources.	This paper explores the linguistic challenges in standardizing Uzbek language terms, particularly in developing new terms for emerging technologies or concepts. The development and standardization of terminology in Uzbek language is crucial for effective communication in specialized fields like medicine, engineering, and law. The paper analyzes case studies and best practices to identify key linguistic challenges and opportunities in developing standardized terminology in Uzbek language, and offers potential solutions to address these challenges. The lack of investment in the development and standardization of Uzbek language terminology is identified as a challenge, which can lead to a lack of clarity and consistency in communication.

Introduction to Uzbek terminology problems and challenges

The Uzbek language is an important language in Central Asia, spoken by over 35 million people worldwide. As Uzbekistan continues to grow and modernize, the development and standardization of terminology in Uzbek language is becoming increasingly important. Standardized terminology is essential for effective communication, especially in specialized fields like medicine, engineering, and law, where precise language is critical. The use of standardized terminology in Uzbek language can also help promote the Uzbek language and culture.

However, the development and standardization of terminology in Uzbek language can be a complex and challenging process. As new concepts and technologies emerge, new terms must be developed to reflect these changes, which can pose linguistic challenges. For example, how can new terminology be developed to reflect emerging technologies like artificial intelligence or blockchain, criptocurrency, Augmented reality, Virtual reality?

In *"Terminological problems in the field of information technology" by Shavkat Abdurakhmanov and Gulnora Raximova (2015)*[1], the authors analyze the challenges of developing terminology for information technology in Uzbek language. They identify the lack of a unified approach and limited resources as the main challenges. The authors propose a set of guidelines for developing new terms that should be consistent with the Uzbek language rules and norms, as well as international standards. The guidelines include using existing Uzbek language terms as a basis for new terms, combining Uzbek language elements with international terms, and using translation as a last resort. In *"On the problem of*

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*standardization of Uzbek terminology in the field of medicine" by Dilfuza Yunusova and Zukhra Mukhammadieva (2016)***[11]**, the authors focus on the challenges of standardizing medical terminology in Uzbek language. They propose strategies for developing new terms, such as creating a database of medical terminology, collaboration with experts in different fields, and the use of international medical terminology as a basis for Uzbek language terms. The authors emphasize the importance of promoting the use of standardized terminology in medical settings to improve communication between healthcare professionals and patients. In "Issues of terminology formation in Uzbek language: problems and prospects" by Nodira Khamidova and Feruza Arifdjanova (2017), the authors provide an overview of the challenges of terminology formation in Uzbek language across different fields. They propose strategies for developing new terms, such as collaboration with experts in different fields, the use of international terminology standards, and the creation of terminological databases. The authors emphasize the importance of promoting the use of standardized terminology in various fields to improve communication and avoid misunderstandings.

In *"New terms in Uzbek language: challenges and solutions," the author Gavhar Kholiqova(2018)[7]* analyzes the difficulties of creating new terms in Uzbek language, particularly in the context of emerging technologies and concepts. The article examines the impact of globalization on the Uzbek language and the challenges of adopting and adapting foreign terms to the Uzbek language. The author proposes a set of strategies for developing new terms that are consistent with Uzbek language rules and norms, including the use of existing Uzbek words and combining them with other Uzbek words or foreign terms. The article emphasizes the importance of collaboration between linguists, subject matter experts, and industry professionals in the development of new terms. In *"Strategies for the development of terminological systems in Uzbek language," the authors Dilbar Fakhriddinova and Dilorom Yakubova(2019)***[5]** explore various strategies for developing terminological systems in Uzbek language, including the importance of standardization and the creation of specialized dictionaries. The article emphasizes the need for collaboration between linguists, subject matter experts, and industry professionals in the development of standardized terminology across different fields, and provides practical guidance on terminology development and standardization efforts in Uzbek language.

The purpose of this paper is to explore the linguistic challenges in the standardization of Uzbek language terms, particularly in developing new terms to reflect emerging technologies or concepts. By examining case studies and best practices, this paper aims to identify the key linguistic challenges and opportunities in developing standardized terminology in Uzbek language, and offer potential solutions to address these challenges.

Terminology in Uzbek Language

The Uzbek language is a Turkic language spoken primarily in Uzbekistan, as well as in neighboring countries like Afghanistan, Kazakhstan, and Tajikistan. The language has a rich history, with roots dating back to the ancient tribes that inhabited the region. The Uzbek language underwent significant changes during the Soviet era, as Russian language influence grew, but since the country's independence, there has been a renewed interest in the Uzbek language and culture.[9]

Specialized terminology is essential for effective communication in various fields. In medicine, for example, precise terminology can be the difference between life and death, while in engineering and science; standardized terminology can help avoid costly errors and misunderstandings. Standardized terminology can also help facilitate international cooperation and exchange of information. [11]

As new technologies and concepts emerge, new terminology must be developed to accurately describe and communicate these changes. Without standardized terminology, there can be confusion, ambiguity, and misunderstandings, which can impede progress in fields such as science, engineering, and medicine.[11] Additionally, the lack of standardized terminology in emerging technologies and concepts can create obstacles to their adoption and widespread use.I

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In the context of Uzbek language, developing new terms to reflect emerging technologies and concepts is crucial for the language's growth and relevance in modern society. However, creating new terminology in Uzbek language can be a complex and challenging process, and requires collaboration with experts in different fields.

Challenges in developing new terms

Developing new terminology requires significant resources, including time, effort, and funding. In Uzbekistan, there may be limited resources allocated to terminology development, especially in specialized fields. As a result, there may be a lack of investment in the development and standardization of Uzbek language terminology, which can lead to a lack of clarity and consistency in communication.[1]

The Uzbek language, like any language, has its unique characteristics that can make it challenging to create new terminology. For example, the Uzbek language has a complex system of suffixes and prefixes, which can create difficulties when constructing new words(for example uzbek words like *ovozdurong, uchoq, talqon, tayyora).* Additionally, the language has a limited number of loanwords from other languages, which can create challenges when trying to introduce new terminology from other countries.

Developing accurate and precise terminology requires collaboration with experts in various fields. For example, creating new terminology for emerging technologies like artificial intelligence requires input from experts in computer science, engineering, and mathematics.[10] However, finding and working with experts in different fields can be challenging, especially if there is a lack of communication and cooperation between different sectors.I

Developing new terminology in Uzbek language is a complex and challenging process that requires collaboration, resources, and expertise. The challenges of creating new words in Uzbek language, coupled with limited resources and the need for collaboration with experts, make it crucial for Uzbekistan to invest in the development and standardization of Uzbek language terminology. Doing so will not only promote the Uzbek language and culture but will also facilitate effective communication and cooperation in specialized fields.[6]

Challenges in new Uzbek Terms Development

To illustrate the linguistic challenges in standardizing Uzbek language terms, case studies of new technologies or concepts can be examined. For example:

1. Artificial intelligence: As mentioned earlier, artificial intelligence is a complex concept that requires standardized terminology in Uzbek language. This can be a challenging task due to the lack of existing Uzbek language terminology, the need for collaboration with experts in computer science and engineering, and the complexity of the concept.

2. Machine learning: Machine learning is another emerging technology that requires standardized terminology in Uzbek language. It involves creating algorithms that can learn and adapt from data, which can be a challenging concept to explain in Uzbek language.

3. Augmented reality: Augmented reality is a technology that allows users to overlay virtual content onto the real world. Developing standardized terminology in Uzbek language for this concept requires collaboration with experts in computer graphics, user experience, and other related fields.

4. Cryptocurrency: Cryptocurrency is a digital or virtual currency that uses cryptography for security. The lack of existing terminology in Uzbek language for this concept can make it challenging to communicate effectively about it.

5. Cybersecurity: Cybersecurity is a field focused on protecting computer systems from attacks or unauthorized access. Developing standardized terminology in Uzbek language for this field requires

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collaboration with experts in computer science, law, and other related fields.

6. Internet of Things: The Internet of Things is a network of devices connected to the internet that can communicate with each other. Developing standardized terminology in Uzbek language for this concept requires collaboration with experts in engineering, computer science, and other related fields.

7. Big data: Big data refers to large and complex data sets that require specialized tools and techniques to analyze. Developing standardized terminology in Uzbek language for this concept requires collaboration with experts in statistics, data science, and other related fields.

8. Virtual fashion refers to clothing and accessories created digitally using 3D modeling and computer graphics, for use in virtual environments, fashion design, marketing, and sustainability. In Uzbekistan people do not often buy virtual clothes for their game characters. So this term is not developed so much.

9. Digital transformation: Digital transformation refers to the use of digital technologies to transform business operations and processes. Developing standardized terminology in Uzbek language for this concept requires collaboration with experts in business, marketing, and other related fields.

10. Smart cities: Smart cities are cities that use technology to improve services and infrastructure for residents. Developing standardized terminology in Uzbek language for this concept requires collaboration with experts in urban planning, architecture, and other related fields.

These are just a few examples of new technologies or concepts that have posed challenges in standardizing Uzbek language terms. By examining these case studies and collaborating with experts in various fields, it is possible to develop accurate and precise terminology in Uzbek language for these concepts [5].

Standardizing Uzbek Terminology

Here are some potential solutions and best practices for addressing the challenges of standardizing terminology in Uzbek language:

Importance of standardized terminology in promoting effective communication: Effective communication is essential in all fields, and standardized terminology can play a critical role in promoting it. Standardized terminology allows professionals to communicate more clearly and accurately, reducing the risk of misunderstandings or errors. In the context of Uzbek language, it is important to emphasize the benefits of standardized terminology in promoting effective communication and encouraging professionals in different fields to collaborate on terminology development.

Best practices for developing new terms in Uzbek language: Developing new terms in Uzbek language requires collaboration among experts in different fields. Some best practices for developing new terms include conducting research to identify existing terminology in other languages, working with Uzbek language linguists to create new terms that are consistent with Uzbek language rules and norms, and testing new terms with professionals in the relevant field to ensure that they are clear and accurate.

Examples of successful terminology development and standardization efforts: There have been successful efforts to standardize terminology in other languages, and these efforts can provide useful guidance for developing standardized terminology in Uzbek language. For example, in 2019, the International Organization for Standardization (ISO) published ISO 20488, which provides guidelines for terminology management. In addition, organizations such as the European Union have developed extensive terminology databases and tools to promote standardization in multiple languages.

In the context of Uzbek language, examples of successful terminology development and standardization efforts can serve as models for future efforts. By examining these efforts and learning from their successes and challenges, it is possible to develop effective strategies for standardizing terminology in

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Uzbek language.

Future Directions for Uzbek Language Terminology Standardization

Some potential future directions for standardizing terminology in Uzbek language:

1) Ongoing challenges and opportunities in the standardization of Uzbek language terms: Standardizing terminology is an ongoing process, and there are always new challenges and opportunities that arise. For example, emerging technologies and scientific discoveries will require the development of new terminology, and these new terms will need to be standardized to ensure effective communication. Ongoing efforts will be needed to continue to develop new terms, refine existing ones, and promote the use of standardized terminology across different fields.

2) Need for ongoing research and development in specialized terminology: Specialized terminology in different fields can be complex and technical, and ongoing research and development will be needed to ensure that terminology remains up-to-date and relevant. In the context of Uzbek language, ongoing research and development will be needed to keep up with changes in different fields and to develop new terms as needed. This research may involve collaboration with experts in different fields, as well as ongoing engagement with Uzbek language linguists to ensure that new terms are consistent with Uzbek language rules and norms [4].

The standardization of Uzbek language terminology is an important and ongoing process, and there is a need for ongoing research, collaboration, and development to ensure effective communication in different fields. By continuing to address the linguistic challenges of standardizing terminology, it will be possible to promote effective communication and ensure that Uzbek language remains a relevant and vibrant language in the 21st century [3].

Conclusion

In conclusion, this paper has explored the linguistic challenges of standardizing terminology in Uzbek language, with a particular focus on the development of new terms to reflect emerging technologies or concepts. The paper has highlighted the importance of standardized terminology in promoting effective communication, as well as the challenges involved in creating new words in Uzbek language, the limited resources for terminology development, and the need for collaboration with experts in different fields.

The paper has presented case studies of 10 new technologies or concepts that have posed challenges in standardizing Uzbek language terms, as well as best practices for developing new terms and examples of successful terminology development and standardization efforts. The paper has also discussed ongoing challenges and opportunities in the standardization of Uzbek language terms, as well as the need for ongoing research and development in specialized terminology.

Overall, the paper has underscored the importance of continued efforts to standardize terminology in Uzbek language. By promoting effective communication in different fields, standardizing terminology can help to ensure that Uzbek language remains a relevant and vibrant language in the 21st century. Moreover, by promoting the development of new terminology, Uzbek language can continue to reflect emerging technologies and concepts, while also promoting Uzbek culture and identity.

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