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Digitalization Of Textile And Sewing Terminology In The Uzbek Language: Challenges And Perspectives

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Abstract: This article explores the process of digitalizing textile and sewing terminology in the Uzbek language, focusing on linguistic, cultural, and technological challenges. The study highlights the importance of developing digital terminological resources for industrial communication, translation accuracy, and the preservation of linguistic diversity. Drawing on corpus linguistics, computational modeling, and AI-assisted tools, the research outlines methods for collecting, classifying, and digitizing Uzbek sewing terms. The findings reveal issues such as equivalence gaps, polysemy, structural differences between Uzbek and English terms, and the need for standardized digital frameworks. The paper concludes by proposing strategies for creating a bilingual digital corpus and establishing sustainable methods for integrating Uzbek sewing terminology into global databases.

Keywords: Textile terminology, sewing terms, digital linguistics, Uzbek language, corpus linguistics, bilingual dictionary, terminology standardization, AI modeling.

Introduction: The digitization of specialized terminology has become an essential part of modern linguistic development. In the context of global technological progress, languages must adapt to new industrial and professional realities. The Uzbek language, as one of the major Turkic languages, continues to expand its terminological base, particularly in technical fields such as textile and sewing industries. However, despite rich cultural and historical layers, Uzbek sewing terminology remains insufficiently represented in digital linguistic

databases.

Traditional sewing terms like andoza (pattern), beldorlik (waist fitting), yoqa (collar), and chok (seam) reflect centuries of craftsmanship and cultural aesthetics. Meanwhile, contemporary industry has introduced numerous English-based loanwords such as zipper, overlock, model, and design. This coexistence of native, Russian-borrowed, and English-derived terms creates semantic and structural diversity, requiring systematic digital organization and standardization.

LITERATURE REVIEW

The theoretical basis for terminology studies derives from Cabré (1999), who defines terminology as a system of specialized linguistic units that require contextual and semantic precision. Bowker (2015) emphasizes the technological dimension of terminology work, advocating for the integration of corpus tools and computational models. Ahmad and Rogers (2007) argue for evidence-based terminology management, highlighting the importance of empirical corpus data.

In Uzbek linguistics, Sharipov (2020) and Temirova (2022) examine the evolution and standardization of national terminology. However, few works have focused on the intersection of digital technology and domain-specific lexicons. The present study aims to bridge this gap by addressing both linguistic and computational aspects of digitizing Uzbek sewing terms.

METHODOLOGY

The research follows an interdisciplinary framework combining linguistic analysis and digital modeling.

Data collection: Over 2,000 sewing-related terms were collected from bilingual dictionaries, technical manuals, educational materials, and industrial glossaries in Uzbek, English, and Russian.

Annotation and classification: Each term was encoded with metadata, including grammatical category, semantic domain (e.g., materials, tools, stitches, measurements), etymology, and usage frequency.

Digitization: XML-based corpus tagging and computational tools such as Sketch Engine, AntConc, and Python scripts were employed to structure and automate data input.

Analysis: Semantic relations such as synonymy, hyponymy, and cross-linguistic equivalence were modeled using semantic network techniques and word-embedding algorithms (Word2Vec, BERT).

RESULTS AND DISCUSSION

The digitized database revealed that Uzbek sewing terminology consists of three main layers:

1. **Native Uzbek terms** — andoza, chok, yoqa, beldorlik;
2. **Russian-derived borrowings** — model, atlas, fason;
3. **English-derived terms** — zipper, pattern, overlock, seam.

Key linguistic challenges identified include:

- **Equivalence gaps**: Certain English technical terms lack direct Uzbek equivalents (seam allowance, serging).
- **Polysemy**: The same term may carry different meanings in different contexts (pattern → andoza, naqsh, bezak).
- **Structural asymmetry**: English tends to use single-word terms, while Uzbek often uses multi-word expressions (pleat → buklama joyi).
- **Terminological instability**: Rapid technological innovation leads to frequent introduction of new terms, causing inconsistency across sources.

From a technological standpoint, integrating linguistic, semantic, and grammatical attributes into one digital structure posed challenges, especially in ensuring interoperability with international databases. However, the implemented model demonstrates the feasibility of creating a bilingual, searchable, and expandable digital corpus of sewing terminology.

CONCLUSION

The digitalization of Uzbek sewing terminology represents not only a technical innovation but also a vital linguistic and cultural advancement in the modernization of national language resources. As industries and technologies evolve, languages must continuously adapt to new professional realities, and this project serves as a bridge between traditional lexical heritage and modern digital tools. Through the integration of corpus linguistics and artificial intelligence, the research establishes a framework that ensures the systematic preservation, classification, and accessibility of specialized vocabulary. In doing so, it provides both scholars and practitioners with an essential resource for communication, translation, and education within the textile and garment industry.

Digitization facilitates the standardization of terminology, preventing the fragmentation and inconsistency that often occur in multilingual industrial contexts. By encoding each term's linguistic, semantic, and etymological characteristics in a structured digital format, the project contributes to the long-term sustainability of the Uzbek lexicon. Moreover, the inclusion of bilingual (Uzbek–English) mapping ensures

the integration of national terminology into global industrial and academic discourse, making the Uzbek language more visible and interoperable in international databases and translation technologies.

Future research should further extend the project in several critical directions:

- **Developing AI-assisted translation and terminology recommendation systems** that can automatically identify, suggest, and standardize equivalents across languages, thus reducing human error and improving translation quality.
- **Creating user-friendly web and mobile interfaces** that allow both experts and learners to interact with the corpus, perform semantic searches, and contribute to the ongoing development of the terminology database.
- **Expanding the corpus to include regional dialects and cross-industry terms**, thereby capturing the full linguistic diversity of textile-related vocabulary across different Uzbek-speaking regions and incorporating links to fashion, design, and engineering terminologies.
- **Establishing collaborative platforms** connecting linguists, textile engineers, designers, and digital technologists to share expertise, validate new terms, and ensure the continual updating of the database.

In a broader sense, the digitization of sewing terminology marks a significant cultural and technological milestone. It demonstrates how digital humanities and applied linguistics can jointly support national identity, industrial progress, and linguistic diversity in the era of global communication. By transforming traditional craftsmanship vocabulary into a structured, machine-readable digital format, this initiative not only safeguards linguistic heritage but also empowers the Uzbek language to thrive in scientific, educational, and technological domains.

Ultimately, the project affirms that the future of terminology work lies in the synergy of linguistic theory, digital technology, and collaborative innovation—ensuring that specialized languages like that of Uzbek sewing can evolve dynamically while remaining rooted in their cultural origins.

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