ELMİ İŞ Beynəlxalq Elmi Jurnal. İyun 2026, Cild: 20, Sayı: 4, s. 227−238
SCIENTIFIC WORK International Scientific Journal. June 2026, Volume: 20, Issue: 4, pp. 227−238
DOI: https://doi.org/10.36719/2663-4619/128/227-238

The Problem of Updating Meaning: Semantic Shifts and Technological Vocabulary in Azerbaijani Online Dictionaries

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Abstract: *This study aims to evaluate the extent to which the advantage of frequent updates provided by online dictionaries is utilized in monolingual Azerbaijani dictionaries. The words "axın", "bulud", "çərəz", and "tətbiq", all belonging to the technology semantic field, were selected as samples and examined in the "Azərbaycan dilinin izahlı lüğəti (2006). Dörd cilddə. Bakı: Şərq-Qərb." dictionary. The explanatory dictionary of the Azerbaijani language (2006, four volumes, Baku: Şərq-Qərb) remains the most recent comprehensive printed edition, and no subsequent updated edition has been published. Therefore, the observed limitations in reflecting recent semantic changes are not only related to lexicographic methodology, but also to the absence of an updated or revised edition after 2006. The English equivalents of the sample entries in the Cambridge and Oxford online monolingual English dictionaries were evaluated comparatively with the definitions in the Azerbaijani examples. This article investigates the problem of reflecting semantic shifts in online monolingual dictionaries. The author emphasizes that the language has a dynamic character and the meanings of the words change over time and gain new meanings. However, adherents of spiritual lexiconism have difficulty in reflecting these changes in an operational and academic way. The study shows that, although the numerical environment creates ample opportunities for the renewal of dictionaries, the selection, standardization and introduction of new meanings is still problematic. This creates particular complexity in the teaching process, because dictionaries are one of the main sources of reference for language learners and it is important for them to avoid using the actual language. The article concludes that online dictionaries should move towards more agile, user-oriented and corpus-based approaches. This will allow semantic changes to be traced more precisely and contemporary understandings to be properly presented in dictionaries.*

Keywords: *semantic shift, lexicography, online dictionaries, technological vocabulary, monolingual dictionaries, language change*

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Received: 3 February 2026; Accepted: 5 April 2026; Published online: 22 June 2026

Mənanın yenilənməsi problemi: Azərbaycan onlayn lüğətlərində semantik dəyişikliklər və texnoloji terminologiya

Xatirə Məmmədova

Xülasə. *Bu tədqiqatın məAzərbaycan dilinin izndə (2006, dörd cilddə, Bakı: Şərq-Qərb) araşdırılmışdır. Bu lüğət Azərbaycan dilinin ən son genişhəcmli çap nəşri olaraq qalır və ondan sonra yenilənmiş nəşr dərc edilməmişdir.*

Buna görə də son dövrlərdə baş vermiş semantik dəyişikliklərin əks olunmasındakı çatışmazlıqlar yalnız leksikoqrafik metodologiya ilə deyil, həm də 2006-cı ildən sonra yenilənmiş və ya təkmilləşdirilmiş nəşrin olmaması ilə bağlıdır. Nümunə sözlərin ingilis dilindəki qarşılıqları Cambridge və Oxford onlayn birdilli ingilis dili lüğətlərində araşdırılmış və Azərbaycan dilindəki izahlarla müqayisəli şəkildə qiymətləndirilmişdir. Məqalədə onlayn birdilli lüğətlərdə semantik dəyişikliklərin əks etdirilməsi problemi tədqiq olunur. Müəllif vurğulayır ki, dil dinamik xarakter daşıyır, sözlərin mənaları zamanla dəyişir və yeni məna çalarları qazanır. Lakin ənənəvi leksikoqrafik yanaşmalar bu dəyişiklikləri operativ və elmi şəkildə əks etdirməkdə çətinlik çəkir. Araşdırma göstərir ki, rəqəmsal mühit lüğətlərin yenilənməsi üçün geniş imkanlar yaratsa da, yeni mənaların seçilməsi, standartlaşdırılması və lüğətlərə daxil edilməsi prosesi hələ də problemli olaraq qalır. Bu vəziyyət xüsusilə tədris prosesində çətinlik yaradır, çünki lüğətlər dil öyrənənlər üçün əsas istinad mənbələrindən biridir və onların müasir dil istifadəsindən geri qalmaması vacibdir. Məqalə belə nəticəyə gəlir ki, onlayn lüğətlər daha çevik, istifadəçi yönümlü və korpus əsaslı yanaşmalara üstünlük verməlidir. Bu, semantik dəyişikliklərin daha dəqiq izlənilməsinə və müasir mənaların lüğətlərdə düzgün təqdim olunmasına imkan verəcəkdir.

Açar sözlər: *semantik dəyişiklik, leksikoqrafiya, onlayn lüğətlər, texnoloji terminologiya, birdilli lüğətlər, dil dəyişikliyi*

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Daxil oldu: 3 Fevral 2026; Qəbul edildi: 5 Aprel 2026; Onlayn dərc edildi: 22 İyun 2026

Introduction

Language as a social phenomenon is not only a means of communication, but also a dynamic system that sensitively reacts to social, cultural and technological transformations occurring within society. In this regard, the characterization of language as a "living" structure reflects its constantly changing and developing nature. These dynamics manifest themselves both at the lexical level (in vocabulary) and at the structural level. As a result of new realities and concepts emerging in society, either new words are formed, or existing words are expanded semantically and acquire new shades of meaning. In this process, dictionaries act not only as sources describing language units, but also as important lexicographic tools that document semantic changes and, in a certain sense, provide normative direction. Influenced by this living nature of language, dictionaries have undergone various changes over time, both in terms of their general structure (megastructure) and the organization of dictionary entries (Mammadova, 2025). The most important of these transformations is the transition from printed dictionaries to online dictionaries. While the updating process in traditional printed dictionaries takes place over long periods, online dictionaries offer more flexible and operational opportunities.

According to Elizabeth Closs Traugott, semantic change is a systematic and inherent process in natural languages that reflects shifts in usage and conceptualization. This process has accelerated dramatically in the digital era, particularly in the field of technological vocabulary. Robert Lew emphasizes that online monolingual dictionaries, due to their flexibility and updateability, are better positioned to respond to such developments compared to printed dictionaries, where long revision cycles hinder timely updates. The increasing role of digital technologies has also strengthened the user-oriented approach in modern lexicography. Online dictionaries enable faster inclusion of newly emerging words and meanings, thereby reflecting contemporary language use more effectively.

However, the extent to which this potential is realized varies across languages and lexicographic traditions.

The main purpose of this study is to determine to what extent the operational updating potential of online dictionaries is effectively applied in Azerbaijani monolingual explanatory dictionaries. For this purpose, lexical units such as “axın” (stream), “bulud” (cloud), “çərəz” (cookie), and “tətbiq” (application), which have undergone significant semantic change in the field of information technologies, were selected and analyzed comparatively. The analysis allows for evaluating the degree to which modern concepts are reflected in dictionaries, as well as their relevance and suitability for contemporary language use.

Although online explanatory dictionaries have the potential to respond more effectively to the dynamic development of language, this potential can only be fully realized through systematic updating strategies, expanded corpus-based approaches, and more precise monitoring of semantic change. These issues highlight the need for a deeper examination of current lexicographic practices, which is addressed in the following section.

The issue of semantic change and its representation in dictionaries has been widely discussed in modern linguistic and lexicographic research. Scholars emphasize that semantic change is not random, but a systematic and usage-based process shaped by cognitive, social, and technological factors. According to Traugott and Dasher, semantic shifts occur through mechanisms such as metaphorical extension, functional reanalysis, and pragmatic strengthening, leading to the gradual emergence of new meanings in language. In lexicography, one of the central challenges is how effectively these evolving meanings are reflected in dictionary entries. Lew (2013) notes that the transition from printed to online dictionaries has significantly transformed lexicographic practices by introducing flexibility, rapid updating, and user-oriented design. Unlike printed dictionaries, online platforms can incorporate new lexical items and semantic changes in a shorter time frame.

Recent research highlights the importance of corpus-based approaches in dictionary compilation. Corpus linguistics enables the analysis of large-scale language data, allowing lexicographers to identify frequency patterns, emerging meanings, and contextual usage more accurately. Nedashkivska (2025) argues that the integration of dynamic corpora enhances the relevance and reliability of dictionary entries, particularly in rapidly evolving domains such as technological vocabulary. Another important development is the increasing role of user participation in lexicography. Interactive platforms and feedback mechanisms allow users to identify outdated definitions and propose new meanings, contributing to a more dynamic and descriptive model of dictionary development. This reflects a shift from traditional prescriptive approaches toward user-driven lexicographic practices.

Furthermore, artificial intelligence technologies have introduced new possibilities for monitoring semantic change. Machine learning tools can analyze large textual datasets, detect emerging lexical patterns, and support lexicographers in prioritizing updates. These technologies are especially valuable in tracking rapidly changing semantic fields. Despite these advancements, not all languages benefit equally from modern lexicographic innovations. English dictionaries, such as Cambridge and Oxford, demonstrate a high level of responsiveness to semantic change, whereas less-resourced languages often experience delays in updating dictionary content. This creates a gap between actual language use and its lexicographic representation. In the context of Azerbaijani lexicography, research on the reflection of semantic change particularly in the field of technological vocabulary remains limited. Existing studies mainly focus on general lexicographic principles or terminological dictionaries, while the issue of updating monolingual explanatory dictionaries in response to semantic expansion has not been sufficiently explored.

Therefore, this study aims to address this gap by comparatively analyzing selected lexical items and evaluating the extent to which contemporary semantic changes are reflected in Azerbaijani online dictionaries in comparison with English lexicographic practice. The novelty of this study lies in its focused examination of how semantic change in technological vocabulary is reflected in Azerbaijani monolingual explanatory dictionaries in comparison with English online dictionaries. While previous research has mainly addressed general lexicographic principles or terminological dictionary compilation, limited attention has been given to the systematic analysis of semantic shifts in explanatory dictionaries of Azerbaijani, particularly in the field of rapidly evolving technological vocabulary.

Unlike earlier studies, this research adopts a comparative lexicographic approach based on real dictionary data and selected high-frequency lexical items ("stream", "cloud", "cookie", "application") that demonstrate clear cases of semantic expansion. This allows for identifying not only the presence or absence of new meanings but also the degree of responsiveness of dictionaries to contemporary language change.

Another innovative aspect of the study is its emphasis on the gap between technological language use and its lexicographic representation. By comparing Azerbaijani and English dictionary practices, the study highlights structural and methodological differences in how semantic change is recorded and updated. The contribution of this research is twofold. First, it provides empirical evidence of the current limitations in Azerbaijani lexicographic practice regarding the integration of new technological meanings. Second, it offers a conceptual basis for improving dictionary updating mechanisms by emphasizing the need for corpus-based monitoring, systematic revision of existing entries, and more responsive online lexicographic systems. In this sense, the study contributes both to theoretical lexicography, by deepening the understanding of semantic change representation, and to applied lexicography, by suggesting practical directions for improving dictionary development in the digital era.

Purpose and Research Questions

This research aims to analyze the degree to which Azerbaijani dictionaries available online represent technological semantic change and also evaluate how effectively they demonstrate currently existing language. This research focuses on a minimum number of selected lexical terms and compares their treatments within Azerbaijani explanatory dictionaries with those of their modern English counterparts. The research addresses the following questions:

1. How much do recently developed technical meanings appear in Azerbaijani online explanatory dictionaries?
2. How do these depictions differ from those seen in modern online dictionaries for English?
3. What obstacles must be overcome in order to apply semantic shifts in Azerbaijani lexicographic practice?

Methods

This study employs a qualitative, descriptive, and comparative research design within the framework of lexicographic analysis. The qualitative approach is appropriate for this research because it focuses on the interpretation of dictionary definitions and semantic change rather than numerical measurement or statistical generalization (Creswell, 2014). The comparative method is used to examine differences between Azerbaijani and English dictionaries in representing technological semantic shifts.

The analysis of selected technological lexical units (stream, cloud, cookie, application) was carried out in the following steps:

In the first stage, the lexical units that served as the object of research were identified. During this selection, the main criterion was that the words had both a traditional meaning and had acquired new semantic meanings in the field of information technologies in the modern era. This purposive sampling technique is commonly used in qualitative linguistic studies to select information-rich cases relevant to the research problem (Patton, 2002). In the second stage, the explanations of the selected words in Azerbaijani were collected. For this purpose, both printed and online versions of the *"Explanatory Dictionary of the Azerbaijani Language"* were consulted, and the meanings, definitions, and possible semantic extensions of each word were recorded. In the third stage, the English equivalents of these lexical units (stream, cloud, cookie, application/app) were identified, and their definitions were collected from authoritative online dictionaries such as the Cambridge Dictionary and Oxford Learner's Dictionaries. These sources are widely recognized in lexicographic research for their corpus-based and usage-oriented approach (Lew, 2013).

In the fourth stage, the dictionary materials obtained in Azerbaijani and English were analyzed comparatively. During this analysis, the following criteria were taken into account: whether technological meanings were included, how semantic changes (such as expansion or metaphorical extension) were represented, the accuracy of definitions, and the marking of usage domains. Comparative lexicographic analysis is a standard method in contrastive linguistics for identifying similarities and differences in meaning representation across languages (Swanepoel, 2001). In the fifth stage, the results of the comparison were summarized, and the extent to which Azerbaijani online dictionaries reflect modern semantic changes was assessed. In particular, the representation of rapid developments in technological vocabulary was analyzed. In the final stage, based on the findings, existing problems related to dictionary updating, semantic change tracking, and lexicographic methodology were identified, and suggestions for improvement were formulated.

Data Collection Tool and Data Analysis

The data were collected through document analysis of online monolingual dictionaries. Selected lexical items were identified and their definitions were systematically examined. Data analysis was conducted using a qualitative comparative approach, focusing on the presence, accuracy, and currency of semantic representations. The findings were evaluated in terms of how effectively semantic shifts are reflected in the dictionaries.

Theoretical Framework

The issue of dictionary updating is one of the central concerns of modern lexicography. Updating is not limited to the inclusion of new lexical items, but also involves the systematic revision of existing dictionary entries in terms of structure, content, and semantic accuracy. In this process, the definition component plays a crucial role, as it directly determines the relevance, reliability, and usability of dictionary entries. However, in public perception, dictionary updating is often associated primarily with the addition of new words, while the revision of existing meanings and definitions tends to receive less attention. This creates a discrepancy between actual language use and its lexicographic representation. Therefore, in applied lexicography, updating requires not only expansion but also continuous content evaluation and systematic editorial revision. The representation of terms in dictionaries constitutes another important aspect of this process. Dictionaries do not merely provide meanings; they also reflect usage, context, grammatical features, and semantic relations, thereby offering a comprehensive description of language (Abdelzaher, 2022). In particular, the inclusion of technological and specialized vocabulary enhances the relevance of dictionaries and supports both professional communication and language learning.

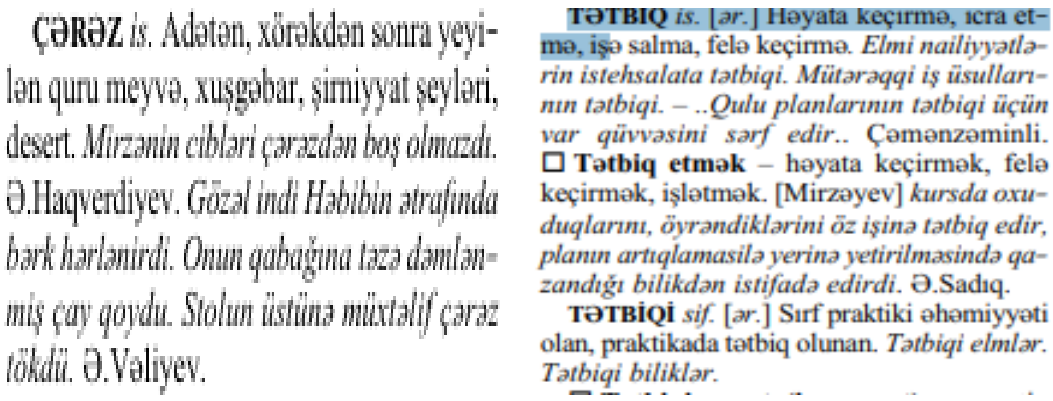
Terminological dictionaries encode the conceptual systems of specific fields, whereas explanatory dictionaries aim to serve a broader audience by reflecting general language use. In this regard, the inclusion of widely used technological meanings in explanatory dictionaries is essential, as these meanings increasingly become part of everyday communication. At the same time, the selection of such terms should be guided by criteria such as frequency of use, semantic relevance, and accessibility to general users. Another key principle in modern lexicography is the recognition that dictionary definitions are not static but dynamic structures that evolve over time. This transformation is influenced not only by internal linguistic changes but also by developments in knowledge, culture, and technology. As a result, both the lexical-semantic system of language and the metalanguage used in dictionary definitions may become outdated or require revision (Ismayilli, 2025). The obsolescence of dictionary entries may arise from various factors, including the expansion or narrowing of semantic fields, changes in social and stylistic usage, and shifts in real-world knowledge (Mammadli, 2023). For instance, lexical items previously considered informal or marginal may gradually become part of standard language (Tahmasebi, 2018). In addition, external factors such as technological advancement and socio-cultural change significantly influence the relevance of definitions.

Technological development, in particular, plays a crucial role in semantic renewal. Many concepts that were once defined primarily through their physical properties are now reinterpreted in functional or digital terms. Moreover, activities that previously occurred only in physical environments are increasingly carried out in virtual spaces, which necessitates the expansion and reformulation of existing lexical meanings (Alguliyev, 2024). In addition to technological factors, social values and ethical norms also contribute to semantic change. The replacement of certain expressions with more inclusive and socially sensitive alternatives reflects broader societal transformations as well as linguistic evolution. Within this theoretical context, the present study aims to determine the extent to which online monolingual dictionaries in the Azerbaijani language effectively utilize their potential for continuous updating. The focus is placed on the reflection of semantic changes in the field of technology, where lexical innovation and meaning expansion occur most intensively.

For this purpose, lexical units such as “streaming”, “cloud”, “cookie”, and “application”, which have undergone significant semantic expansion in contemporary usage, were selected as the objects of analysis (Babasoy et al., 2025, p. 5). These items represent cases where traditional meanings coexist with newly developed technological meanings. A comparative approach was adopted, in which the representation of these lexical items in Azerbaijani explanatory dictionaries was examined and compared with their equivalents in modern English online dictionaries. This approach allows for evaluating the extent to which contemporary semantic developments are reflected in Azerbaijani lexicographic practice.

Preliminary observations indicate that the technological meanings of certain lexical items are either insufficiently represented or entirely absent in Azerbaijani explanatory dictionaries. For example, the word “cloud”, in its technological sense referring to an internet-based data storage system, is not reflected in the dictionary, despite its widespread usage. A similar situation is observed with the word “cookie”, whose meaning related to data storage in web technologies is not adequately represented. These findings point to a gap between actual language use and its lexicographic representation, emphasizing the need for more systematic, dynamic, and responsive updating strategies in Azerbaijani online dictionaries.

The word “application” is also one of the clearest examples of semantic expansion. Especially with the development of mobile and digital technologies, this word has become widespread in the sense of “software”. However, it is observed that this new semantic layer is either incomplete or not presented at all in explanatory dictionaries. This shows that dictionaries do not fully reflect modern language usage.



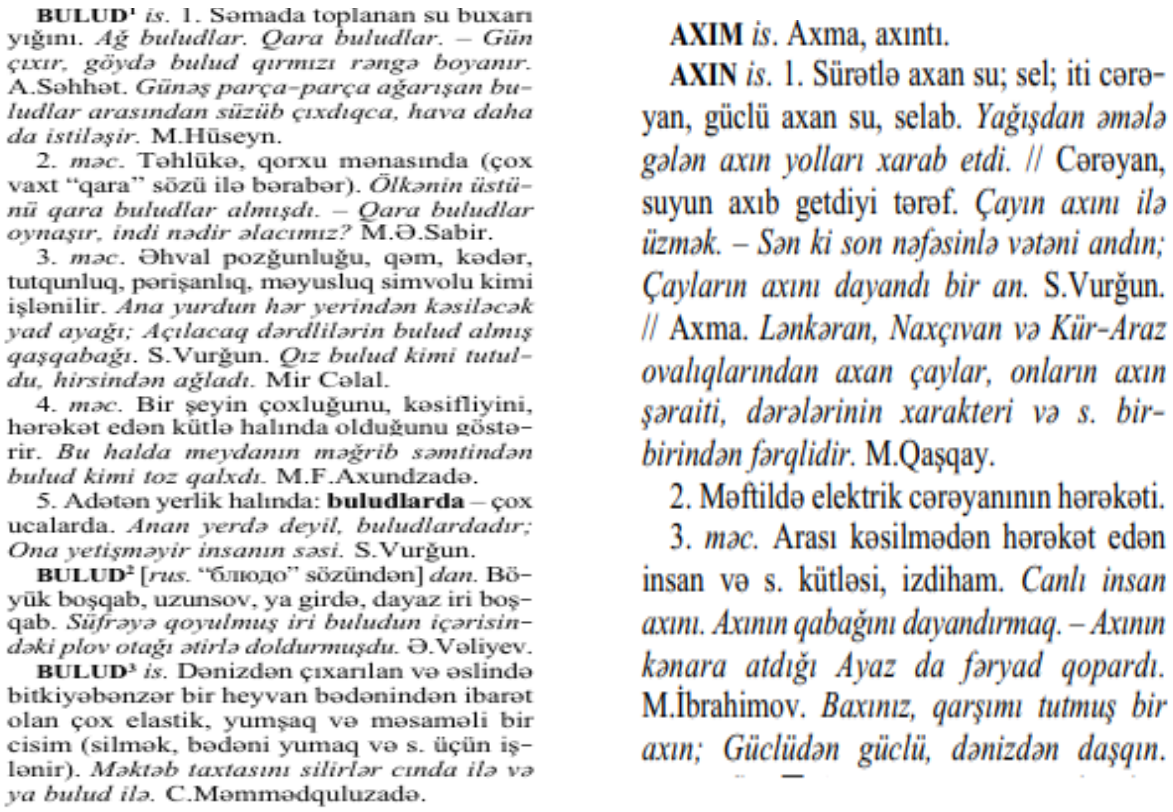
ÇƏRƏZ *is.* Adətən, xörəkdən sonra yeyilən quru meyvə, xuşgəbar, şirniyyat şeyləri, desert. *Mirzənin cibləri çərəzdən boş olmazdı.* Ə.Haqverdiyev. *Gözəl indi Həbibin ətrafında bərk hərlənirdi. Onun qabağına təzə dəmlənmiş çay qoydu. Stolun üstünə müxtəlif çərəz tökdü.* Ə.Vəliyev.

TƏTBİQ *is.* [*ər.*] Həyata keçirmə, icra etmə, işə salma, felə keçirmə. *Elmi nailiyyətlərin istehsalata tətbiqi. Mütərəqqi iş üsullarının tətbiqi. – ..Qulu planlarının tətbiqi üçün var qüvvəsini sərf edir..* Çəmənzəminli. ☐ **Tətbiq etmək** – həyata keçirmək, felə keçirmək, işlətmək. [Mirzəyev] *kursda oxuduqlarını, öyrəndiklərini öz işinə tətbiq edir, planın artıqlamasilə yerinə yetirilməsində qazandığı bilikdən istifadə edirdi.* Ə.Sadıq.

TƏTBİQİ *sif.* [*ər.*] Sırf praktiki əhəmiyyəti olan, praktikada tətbiq olunan. *Tətbiqi elmlər. Tətbiqi biliklər.*

Figure 1

Words taken from Azerbaijani dictionary.
(https://urmu.eu/Azerbaycan_dilinin_izahli_lugeti_3.pdf)



BULUD[1] *is.* 1. Səmada toplanan su buxarı yığını. *Ağ buludlar. Qara buludlar. – Gün çıxır, göydə bulud qırmızı rəngə boyanır.* A.Səhhət. *Günəş parça-parça ağarışan buludlar arasından süzüb çıxdıqca, hava daha da istiləşir.* M.Hüseyn.

2. *məc.* Təhlükə, qorxu mənasında (çox vaxt "qara" sözü ilə bərabər). *Ölkənin üstünü qara buludlar almışdı. – Qara buludlar oynaşır, indi nədir əlacımız?* M.Ə.Sabir.

3. *məc.* Əhval pozğunluğu, qəm, kədər, tutqunluq, pərişanlıq, məyusluq simvolu kimi işlənilir. *Ana yurdun hər yerindən kəsiləcək yad ayağı; Açılacaq dərdlilərin bulud almış qaşqabağı.* S.Vurğun. *Qız bulud kimi tutuldu, hirsindən ağladı.* Mir Cəlal.

4. *məc.* Bir şeyin çoxluğunu, kəsifliyini, hərəkət edən kütlə halında olduğunu göstərir. *Bu halda meydanın mağrib səmtindən bulud kimi toz qalxdı.* M.F.Axundzadə.

5. Adətən yerlik halında: **buludlarda** – çox ucalarda. *Anan yerdə deyil, buludlardadır; Ona yetişməyir insanın səsi.* S.Vurğun.

BULUD[2] [*rus.* "блюдо" sözündən] *dan.* Böyük boşqab, uzunsov, ya girdə, dayaz iri boşqab. *Süfrəyə qoyulmuş iri buludun içərisindəki plov otağı ətirlə doldurmuşdu.* Ə.Vəliyev.

BULUD[3] *is.* Dənizdən çıxarılan və əslində bitkiyəbənzər bir heyvan bədənindən ibarət olan çox elastik, yumşaq və məsaməli bir cisim (silmək, bədəni yumaq və s. üçün işlənir). *Məktəb taxtasını silirlər cındа ilə və ya bulud ilə.* C.Məmmədquluzadə.

AXIM *is.* Axma, axıntı.

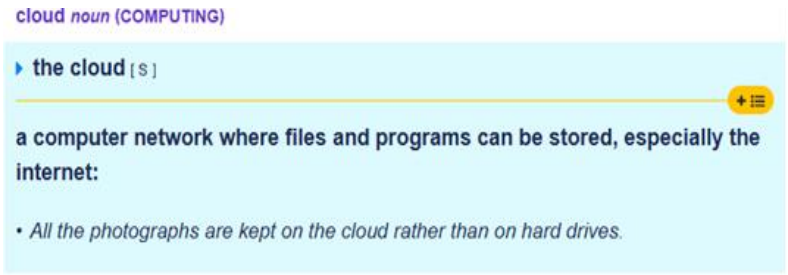
AXIN *is.* 1. Sürətlə axan su; sel; iti cərəyan, güclü axan su, selab. *Yağışdan əmələ gələn axın yolları xarab etdi.* // Cərəyan, suyun axıb getdiyi tərəf. *Çayın axını ilə üzmək. – Sən ki son nəfəsinlə vətəni andın; Çayların axını dayandı bir an.* S.Vurğun. // Axma. *Lənkəran, Naxçıvan və Kür-Araz ovalıqlarından axan çaylar, onların axın şəraiti, dərələrinin xarakteri və s. birbirindən fərqlidir.* M.Qaşqay.

2. Məftildə elektrik cərəyanının hərəkəti.

3. *məc.* Arası kəsilmədən hərəkət edən insan və s. kütləsi, izdiham. *Canlı insan axını. Axının qabağını dayandırmaq. – Axının kənara atdığı Ayaz da fəryad qopardı.* M.İbrahimov. *Baxınız, qarşımı tutmuş bir axın; Güclüdən güclü, dənizdən daşqın.*

Figure 2

Words taken from Oxford and Cambridge online dictionaries

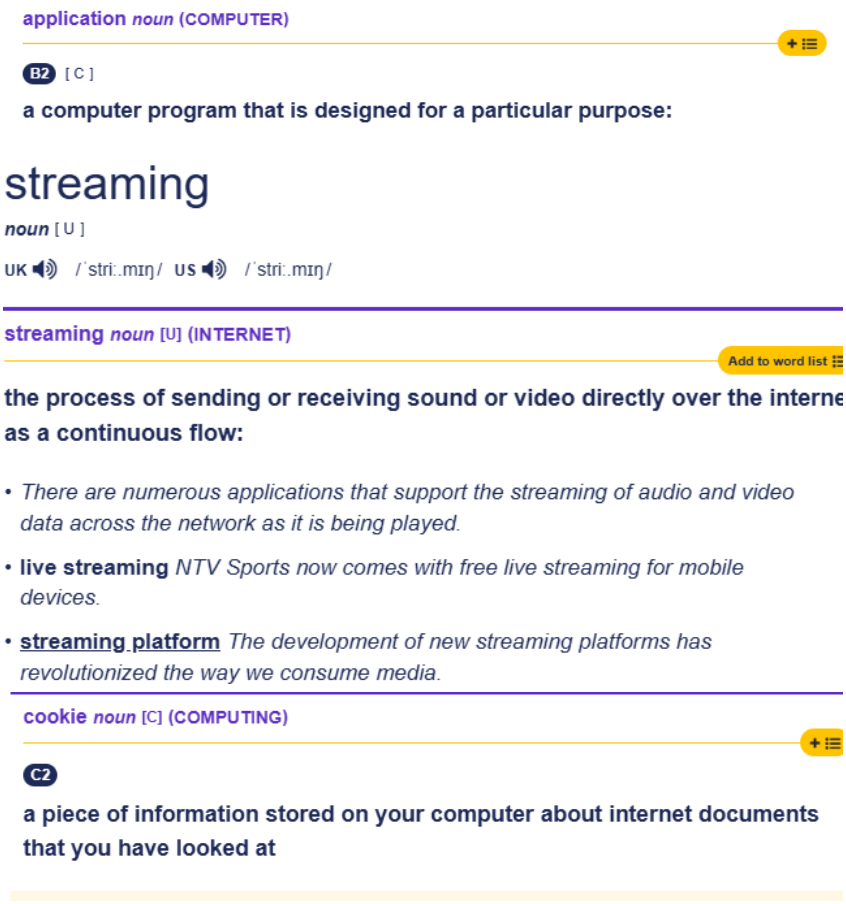


cloud *noun* (COMPUTING)

▸ **the cloud** [S]

a computer network where files and programs can be stored, especially the internet:

• *All the photographs are kept on the cloud rather than on hard drives.*



application *noun* (COMPUTER)

B2 [C]

a computer program that is designed for a particular purpose:

streaming

noun [U]

UK /ˈstriːmɪŋ/ US /ˈstriːmɪŋ/

streaming *noun* [U] (INTERNET)

Add to word list

the process of sending or receiving sound or video directly over the interne as a continuous flow:

- *There are numerous applications that support the streaming of audio and video data across the network as it is being played.*
- **live streaming** *NTV Sports now comes with free live streaming for mobile devices.*
- **streaming platform** *The development of new streaming platforms has revolutionized the way we consume media.*

cookie *noun* [C] (COMPUTING)

C2

a piece of information stored on your computer about internet documents that you have looked at

However, the meaning of all the terms we mentioned is explained in Ismayil Jellali's 997-page "Explanatory Dictionary of Informatics Terms" Baku Publishing House-2017 dictionary Figure 3. (terms taken from terminology dictionary). www.oxfordlearnersdictionaries.com

cookie <kuki> – "**qurabiyə**". HTTP protokolu tərəfindən dəstəklənən, ölçüsü 4 Kbaytadək olan və istifadəçi haqqında verilənlərdən ibarət olan mətn yazısı; istifadəçinin qeydiyyatı zamanı veb-server tərəfindən qaytarılır və istifadəçinin kompüterində saxlanır. İlk dəfə Netscape Communications şirkəti tərəfindən daxil edilib. *Kuki*-fayllara saytı ziyarət tarixçəsi, gözdən keçirilən səhifələr, sayta daxil olarkən aparılmış fərdi kökləmələr, baxılan reklamların siyahısı, hər bir istifadəçinin üstünlük verdikləri yazıla bilər və bu informasiyanın əsasında hər dəfə müştəri sayta girərkən ona konkret təkliflər verilə bilər. (Ziyarətlərin tarixçəsi saytda verilənlər bazasında aparıla bilər, *kuki*-faylda isə yalnız bu verilənlər bazasındakı yazıların indeksləri yerləşdirilir.) Ancaq şəbəkə istifadəçilərinin istəmədiyi halda belə informasiya toplanışı onların haqlı iradına səbəb olur. *Kuki*-faylların uzaqlaşdırılması istifadəçinin kompüterinin işinə təhlükə yaratmır.

cloud computing ~ **облачные вычисления** ~ **bulut bilişim** ~ **bulud hesablamalar** – hesablama resurslarını yerləşdirmək və belə xidmətləri son uc istifadəçilərə təqdim etmək üçün İnternetdən istifadəyə imkan verən texnologiya. *Bulud hesablamalardan* istifadə olunması tətbiqi proqramlara xidmət göstəriləməsini və verilənlərin saxlanmasını çox yüksək etibarlılığa malik sistemlərə həvalə etməyə, praktik olaraq qeyri-məhdud resurslar təqdim etməyə, xidmət haqqını dəfələrlə azaltmağa və istifadəçilərə hazır servis təqdim etməyə imkan verir.
İri şirkətlər çox vacib informasiyalarını saxlamaq üçün kənar provayderlərə etibar etmədiyindən özəl "buludlarını" yaratmağa üstünlük verir.

application ~ **приложение** ~ **uygulama** ~ **tətbiqi proqram** – birtipli (oxşar) işləri yerinə yetirmək üçün nəzərdə tutulmuş xüsusi proqram. *Tətbiqi proqramlara* örnək olaraq mətn prosessorlarını, elektron cədvəlləri, mühasibat sistemlərini göstərmək olar. *Tətbiqi proqramı* kompüteri idarə edən əməliyyat sistemindən, yardımçı (xidməti) məsələləri və ya ümumi təyinatlı funksiyaları yerinə yetirən utilitdən və proqramların yazıldığı proqramlaşdırma dilindən fərqləndirmək lazımdır. *Tut*: OPERATING SYSTEM, PROGRAMMING LANGUAGE, UTILITY.

Table 1
Comparison between the dictionaries

Lexical Item (AZ)	Traditional Meaning (AZ Dictionary)	Technological Meaning (AZ Dictionary)	English Equivalent	Technological Meaning (EN Dictionaries)	Semantic Shift Type	Notes
Axın	Mayenin fasiləsiz hərəkəti	yoxdur / qeyd olunmayıb	stream	data stream (continuous flow of data)	Metaphorical extension	AZ lüğətdə texnoloji məna yoxdur
Bulud	Göydə su buxarı kütləsi	yoxdur	cloud	internet-based storage system	Functional shift	İngilis dili lüğətində əsas mənalardan biridir
Çərəz	Şirniyyat növü	yoxdur	cookie	small data stored by websites	Metaphorical shift	Azərbaycan dili lüğətində yalnız məişət mənasında verilib
Tətbiq	müraciət, tətbiq etmə	qismən natamam	application (app)	software program	Semantic expansion	Azərbaycan dili lüğətində bütün mənalar verilməyib

In conclusion, the study shows that although online dictionaries have the ability to be updated quickly from a technical point of view, this potential is not always fully realized in practice. Especially in rapidly developing areas such as technology, the prompt, systematic and adequate inclusion of semantic innovations in dictionaries remains one of the priority directions of modern lexicography. This necessitates the development of new methodological approaches at both the theoretical and applied levels.

Position of Technological Terms in Explanatory Dictionaries

One of the main problems in modern Azerbaijani lexicography is determining the extent and form of technological terms in explanatory (monolingual) dictionaries. Terminological dictionaries are prepared for a specific audience and provide precise technical definitions, but the purpose of explanatory dictionaries is to cover a wider audience and reflect the actual use of the language. This difference plays an important role in the presentation of semantic changes, especially the rapid innovations in the field of technology, in dictionaries.

For example, the words cloud, cookie, application, and stream were originally used in a technical context, but in recent years these words have become widespread in everyday language and have acquired new meanings. In such cases, the inclusion of these meanings in explanatory dictionaries is not only recommended, but also necessary, since one of the main functions of the dictionary is to show users the modern use of the language (Arias, 2024). Failure to include these meanings can create a gap between the dictionary and real language use, creating misunderstandings and difficulties, especially for language learners. However, it is not appropriate to automatically add all technological or newly created terms to explanatory dictionaries (Adilov et al., 2019). Rarely used, highly specialized words should remain in glossaries, because they are important to specialists and at the same time allow the glossary to be maintained without increasing its size. Therefore, the criteria for inclusion in the dictionary should be determined on the basis of frequency of use, semantic relevance and level of understanding of general users, and not simply on the basis of technical availability.

As a result, dictionaries should adopt a balanced approach when including technological meanings. Technological words that are already widespread in everyday speech should be included, but very specific and rare terms should be kept only in terminological dictionaries. This approach will allow

dictionaries to remain relevant, reliable and user-oriented, as well as to more fully and accurately reflect the modern lexicon of the Azerbaijani language.

Discussion and Recommendations

The studies conducted show that Azerbaijani explanatory dictionaries are slow to add words and/or newly acquired meanings in the field of technology, or have not made any progress at all. The fact that none of the words and meanings that make up the sample are included in the explanatory dictionary is a clear example of this situation. The comparison shows that modern English dictionaries, especially the Cambridge Dictionary and the Oxford Learner's Dictionaries, systematically and promptly reflect the semantic changes taking place in the technological field (UNESCO, 2023). In these dictionaries, not only the traditional meanings of words, but also the new functional and terminological meanings they have acquired in the modern digital context are separately noted and often presented as one of the main meanings.

In contrast, in explanatory dictionaries of the Azerbaijani language, the technological meanings of the same lexical units are either not presented at all or are given incompletely. This creates a discrepancy between the dictionary and real language use. It is particularly noteworthy that in English, words such as "cloud", "cookie", "stream" and "application" have already become established as technological terms in everyday use and are systematically presented in dictionaries as such. However, the same semantic expansion of their Azerbaijani counterparts "bulud", "çərəz", "axın" and "tətbiq" has not been adequately reflected in dictionaries.

This difference shows that while English lexicography adopts a more flexible and user-oriented approach to tracking semantic changes, this process in Azerbaijani lexicography is slower and less systematic. It is certainly not correct to include every concept that emerges in an age where technology and cultural changes are happening so rapidly in the dictionary. Or, the inclusion of concepts that have not yet reached sufficient usage and should remain as terms can unnecessarily increase the size of the dictionary.

However, an important decision needs to be made at this point. Because the exclusion of newly emerging and highly frequent concepts from the dictionary, thus preventing them from gaining legitimacy, may lead to their English equivalents becoming established in the language. From this perspective, determining whether existing dictionary entries maintain their conceptual validity over time requires a process in itself. As a solution:

User-oriented feedback mechanisms A crowdsourcing system should be implemented for professional lexicographers and active users, where users can mark outdated explanations and suggest new technological meanings. A voting or approval mechanism should be created that ensures that suggestions are prioritized according to importance and frequency of use.

Corpus-based monitoring In addition to written texts, a continuously updated language corpus should be developed that includes online forums, social media, and technical publications. This corpus can be used to monitor new terms and semantic changes, and determine which terms are relevant for inclusion in the dictionary.

Tagging and classification for dynamic review New technological terms or user-suggested meanings should be tagged as "current use" or "candidate for inclusion". Vocabulary items should be grouped by semantic domain, with periodic review focusing on rapidly changing domains.

Integration of artificial intelligence technologies AI tools that automatically detect new terms and semantic changes in large corpora should be implemented. Machine learning algorithms should help lexicographers prioritize updates by highlighting gaps in existing explanations.

Balanced inclusion policy Frequently used technological terms should be included promptly, while highly specialized and rare terms should be kept in glossaries. Inclusion criteria should be based on frequency, semantic relevance, and level of understanding by a broad user group.

In this context, creating a continuously updated database and incorporating it into the dictionary compilation process will be a crucial tool for ensuring the sustainability of dictionaries. The active use of artificial intelligence technologies, which are becoming increasingly accessible to a wider audience, will be a turning point in addressing the issue of currency in dictionaries, as it is in all lexicographical studies.

Conclusion

The findings of this study indicate that Azerbaijani explanatory dictionaries do not fully reflect the semantic innovations of technological vocabulary. The analysis of lexical items such as "axın", "bulud", "çərəz", and "tətbiq" shows that their contemporary technological meanings are either incomplete or entirely absent. This creates a gap between dictionary content and actual language use, weakening the functional and normative role of dictionaries. This issue is particularly significant for language learners, as dictionaries serve as primary reference tools. The lack of up-to-date meanings limits learners' ability to understand and use words accurately in modern communicative contexts, negatively affecting their language competence. At the same time, not all technological terms should be included in explanatory dictionaries. A balanced approach is required, considering factors such as frequency, semantic relevance, and user needs, while highly specialized terms should remain within terminological dictionaries. The study highlights the need for more dynamic and systematic updating practices in Azerbaijani lexicography. In this regard, the adoption of corpus-based methods, user-oriented approaches, and digital technologies can significantly improve the accuracy, relevance, and usability of dictionaries. In conclusion, the continuous and systematic updating of explanatory dictionaries is essential for reflecting contemporary language use and supporting effective language learning.

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