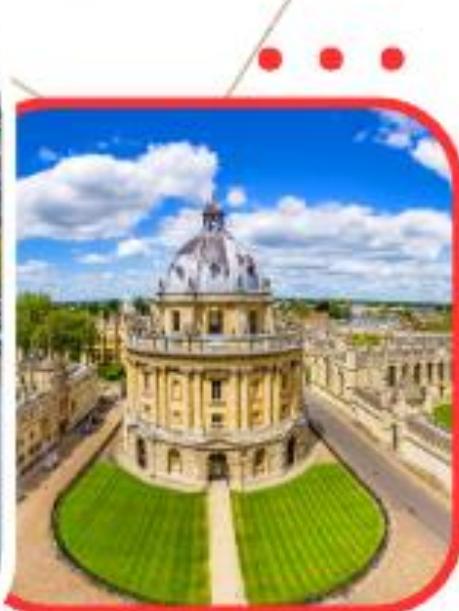




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**Complexity of the text: A literature teacher by A.Kakhkhor****Abdiyeva Muqaddas Olim qizi**

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**Abstract:** The present study explores the historical evolution and methodological underpinnings of text complexity assessment, highlighting the seminal contributions of Emmett Betts, Edgar Dale, Jeanne Chall, Rudolf Flesch, and J. Peter Kincaid. The research aims to provide a comprehensive understanding of how readability and linguistic accessibility have been quantified from pedagogical observation to computational modeling. Methodologically, the paper synthesizes key empirical findings and formulaic frameworks that have shaped readability measurement across decades. Betts's classification of reading proficiency in the 1940s established a pedagogical model correlating oral reading accuracy with comprehension, while Dale and Chall's statistical analyses in the mid-twentieth century identified lexical familiarity and sentence length as the primary predictors of textual difficulty. Building upon these foundations, Flesch and later Flesch-Kincaid developed quantitative indices—Reading Ease and Grade Level—to operationalize syntactic and morphological complexity through measurable linguistic variables. As an applied component, the study conducts a readability evaluation of the short story "Literature Teacher," using the Flesch-Kincaid formulas to illustrate the practical implementation of these metrics in literary discourse analysis. The findings underscore both the enduring value and the intrinsic limitations of these indices, particularly their neglect of conceptual coherence, domain-specific vocabulary, and visual-textual components. Recent scholarly consensus (2020–2025) reaffirms the relevance of readability formulas in computational linguistics and Natural Language Processing (NLP), while emphasizing the necessity of integrating automated measures with expert linguistic evaluation. The study concludes that a hybrid approach—combining quantitative readability metrics with qualitative human judgment—offers a more precise and contextually valid framework for assessing text complexity.

**Keywords:** text complexity, Readability, Reading levels, Flesch Reading Ease (FRE), Flesch-Kincaid, Grade Level (FKGL), Lexical familiarity, Syntactic complexity, Comprehension metrics, Pedagogical assessment, Natural Language Processing (NLP), Empirical validation, Statistical readability, Lexical sophistication,

Historical evolution of readability.

Introduction





As a consequence of our deliberations concerning complexity, we have acquired familiarity with the pioneering investigations and revelations of several distinguished scientists.

For instance, Emmett Betts, whose seminal work established the fundamental principles for ascertaining the direct correlation between the textual difficulty and student academic attainment, is widely recognized as the primary architect of reading levels in the 1940s.

**Goal:** To elucidate a student's inherent capacity for autonomous and didactic reading.

**The Three-Tier System:** Betts delineated distinct proficiency levels predicated upon oral reading precision metrics and comprehension evaluations derived from informal reading assessments.

**Methodology:** Students rendered texts aloud, and researchers meticulously quantified: Word Recognition Fidelity and Comprehension Ratio. **Instructional Level (Optimal Learning):** Textual materials where a student attains 95%-98% Word Recognition and 75%-89% Comprehension are deemed optimal for pedagogical engagement, necessitating only minimal teacher intervention. **Exemplification:** A scholarly compendium that stipulates a student only misidentify 2-5 words per every hundred and facilitates the correct response to three out of four queries is regarded as the quintessential didactic challenge.

We shall now transition to the collective oeuvre of Edgar Dale and Jeanne Chall: Quantifying Textual Accessibility (1940s-1950s). They were pivotal in the formulation of the most ubiquitous Readability Formulas, which furnish an impartial, statistically robust metric of text complexity. **Goal:** To forge an automated, statistically validated methodology to forecast text difficulty contingent upon linguistic features. **The Formula Components:** Rigorous statistical analyses evinced the strongest interrelationship between comprehension and two critical determinants: familiarity of the lexicon and syntactic length (sentence length). **Core Conclusion:** The greater the sentence span and the more obscure the vocabulary, the more onerous the text proves for the average readership. **Exemplification:** A historical artifact originating from the 18th century with exorbitantly protracted sentences and esoteric academic vernacular will garner a substantially high (difficult) Readability score in contradistinction to a contemporary juvenile narrative.

We will study the work of Flesch-Kincaid. The genesis of the Flesch Readability Metrics commenced with the Flesch Reading Ease (FRE) index, developed by Rudolf Flesch during the 1940s-1950s. This metric provides a quantitative assessment of a text's inherent accessibility, yielding a score on a scale of 0 to 100, where higher values denote superior ease of comprehension.

Subsequently, The Flesch-Kincaid Formula is a quantitative model designed to measure the readability and linguistic complexity of English texts.





It evaluates how easily a reader can comprehend a text by analyzing its syntactic structure (sentence length) and phonological density (syllable count per word).

As one of the most widely adopted readability indices, the formula serves as a critical instrument in education, psycholinguistics, technical communication, and editorial studies.

In 1948, Rudolf Flesch, an Austrian-born linguist and readability expert, developed the Flesch Reading Ease Formula, a pioneering approach that quantified textual difficulty through mathematical analysis.

Flesch proposed that:

Long sentences increase syntactic complexity;

Polysyllabic words reduce reading fluency;

Shorter sentences and simpler vocabulary enhance comprehension efficiency.

His work laid the foundation for empirical readability assessment in modern linguistics.

In 1975, J. Peter Kincaid, working for the U.S. Navy, refined Flesch's original formula to create the Flesch-Kincaid Grade Level (FKGL) model. This version converts textual features into a grade-level score, indicating the minimum U.S. school grade required to comprehend the text.

For instance, a score of 8.5 signifies that the text is appropriate for an eighth-grade reader.

The Flesch-Kincaid system includes two main formulas:

Flesch Reading Ease Formula (FRES)

$$FRES = 206.835 - 1.015 \times (\text{Words} / \text{Sentences}) - 84.6 \times (\text{Syllables} / \text{Words})$$

Explanation:

Sentences are Independent grammatical units ending with punctuation (e.g., ".", "?", "!"). Count the total number of sentences

Words Lexical units separated by spaces e.g., "The cat runs fast." → 4 words

Syllables : Distinct vowel sounds in a word e.g., "education" → 4 syllables

The higher the FRES score (closer to 100), the easier the text is to read.

Lower scores indicate more complex, academic, or technical writing.

Flesch-Kincaid Grade Level Formula (FKGL)

$$FKGL = 0.39 \times (\text{Words} / \text{Sentences}) + 11.8 \times (\text{Syllables} / \text{Words}) - 15.59$$

Explanation:

The result indicates the U.S. school grade level required to understand the text.

For example:

FKGL = 8.5 → understandable for an 8th-grade student

FKGL = 12.0 → suitable for high school graduates





Strengths of the Flesch-Kincaid Model: Provides a mathematically objective measure of readability. Easily automated in software (e.g., Microsoft Word, Grammarly).

Useful for curriculum design, technical documentation, and public communication.

Offers an empirical standard for text simplification and audience targeting.

Conclusion: The Flesch-Kincaid Formula represents one of the most influential tools in modern readability research.

By quantifying sentence length and word syllabic density it provides a clear numerical measure of how accessible a text is to readers of varying educational levels.

Although it does not capture semantic or cultural nuance, its statistical precision and ease of application make it invaluable in both academic and professional communication.

The formula remains a cornerstone in text complexity analysis, supporting the ongoing pursuit of linguistic clarity and educational accessibility.

“Literature Teacher” Translated by Muxitdinova Diyora

Boqijon Baqoyev, or - the elegant literature teacher - as he called himself, got angry after entering the cattle shed. The cow had a tick on its ear again. He got even angrier when he tried to remove the tick, and the cow shook its head and snored. “What an animal!” - he exclaimed. “This is not a cow: it’s a beast,” - he said. slamming the door. His wife, Mukarram was pouring water into the samovar. “What an animal! - Baqoyev said again - We have to sell this cow and buy a pig instead.” “We cannot keep a pig: it is not allowed in the city,” - Mukarram said as she was putting coal in the samovar. “Why? Are they not allowed? Who said so? Did I say that? Yes, that’s right, of course, it’s not allowed. - Baqoyev said. “Come inside the house. Hamida came to visit,” - Mukarram told her husband. Hamida was a sixteen-year-old, active and cheerful girl. She was happy to see her brother-in-law. “Oh. You’re at home! if I had known that. I would have brought my notebook with me. It’s a pity I didn’t bring it.” - she said. Boqijon Baqoyev’s mood changed and he began to look happy: soon he forgot about the dark blue tick and the pig ruining the edges of stream. “I heard that you transferred your studies from the Technical college to Rabfak28 is that true?” - Boqijon asked. “Hmm... you did the right thing. Was I the one who told you to transfer? Hmm... Augh I felt hurtburn. Rabfak is good: I went there once. The word practicum was written on the office door; that is not right. Practicum. minimum. maximum, all these words are Latin or are close to Latin. I personally think so. They were quiet for a short while. “Brother Boqijon” - the girl said, feeling shy. “I wanted to ask you something. We read Chekhov’s “Desire to Sleep” in class, and we want to act it out. We want to judge the girl who killed the little child in the story. Rahima will play the role of the child’s mother. Sharifjon will be the lawyer. and there





will also be judges. As for me, I want to justify the girls and blame her boss who exploited ruthlessly this girl. That's all. I wrote like that. I wanted to know your opinion about this issue. Chekhov wanted to say this, didn't he?". Baqoyev thought for a while and asked her. "Who teaches you the "elegant" literature? Is it Hakimov? He is a stupid man; he does not improve himself. When I tell him that a question mark comes after what, he laughs. But this is not the point." Mukarram came in, holding a samovar. Hamida quickly got up from her place, took the samovar from her sister and placed it on the table. She wanted to scold her sister's husband for not helping his pregnant wife but she was shy and kept quiet. Boqijon Baqoyev looked very thirsty, for he drank four cups of tea in a row and started to sweat. "After eating chuchvara<sup>29</sup>, drinking tea is very good" - he said. wiping the sweat from his face. "Hmm... my beard has grown. If it weren't for barbers, people would have become monkeys. Monkeys have evolved into human beings. Engels has an opinion about this. "Boqijon, you haven't told me your viewpoint about that subject." - the girl said. "Isn't what I said Chekhov's opinion also?" Boqijon asked for another cup of tea. "Chekhov? Hmm... when talking about bourgeoisie realism, we have to look carefully at its objective before anything else. Objective realism should be understood just as bourgeoisie realists understand it and portray it. I suppose that Chekhov's talents from the beginning until the end display primary bourgeoisie realism which means... hmm... Mukarram, have you put an egg for the chickens? There must always be eggs in front of the chickens or else they will become wild. Dear God, there aren't more stupid creatures than chickens!"

"If you put eggs under your broody hen, she will lay them. Why is that: And why does the rooster crow at dawn? It's amazing psychology, indeed. Are you studying biology?" Hamida talked about what they had studied in biology and what they were going to study in the current year. She also mentioned that she wanted to use physiological reasons in the speech that she was going to give at the play and turned the discussion back to Chekhov. "Hmm... - began Baqoyev again. "I have my own personal opinion about Chekhov. As for others, let them say whatever they want. In my opinion, his point of view differs completely from that of Pushkin and Lermontov, although all of these writers are from the same era, same social class. and the same country. "Chekhov didn't live in the same era as Pushkin did. There's a picture of him and Maxim Gorky in our library, and Chekhov probably died in 1904," - Hamida replied. Baqoyev felt a little embarrassed. "Which Chekhov are you talking about? Pour another cup of tea for me. About this Chekhov? That's right, he died either in the first half of 1904 or in the second half of that year. Give me another handkerchief: this one smells like onions. As for me, I'm talking about that Chekhov, the one who was a representative of the primary bourgeoisie realism. "What about the story. "Desire to Sleep?" To which





Chekhov does it belong?" - asked Hamida. "To this Chekhov, there's no doubt about that. This story was first published in "Sovremennik" magazine. After that, Boqijon Baqoyev gave a long speech: however, Hamida did not understand a single word of what he said. Boqijon talked about some kind of famous critic called Deterring who wrote to a writer called Shelling. "By the time you will be in need of a servant's help. your son will grow up and become a lad. He also said that Marx had classified Dobrolubov in the same list as Mering: and also that there was some kind of dramatist called Standing who at his deathbed wrote to the critic Deming: "If God has created all creatures, I'm not amazed at them. Is a lizard even considered to be a creature?" Hamida felt as if her head was very dizzy: she yawned twice without letting him notice. It was already dark when Hamida said goodbye to the hosts of the house and went outside. Unfortunately, she did not get a single opinion about the story "Desire to Sleep" from her sister's husband. She kept wondering about what he had said to her, but there wasn't anything in her brain except for the words: practicum, minimum, maximum. Detirding. Stending. Shelling, Mering, Deming.

#### FLESCH-KINCAID READABILITY ANALYSIS OF THE STORY "Literature Teacher"

##### 1. Overview of the Text

The story "Literature Teacher" portrays a self-proclaimed "elegant literature teacher" whose behavior, speech, and contradictions reflect humor and satire. The narrative includes long dialogues, philosophical discussions, and complex sentences.

This mixture makes the text linguistically rich but lowers its readability level.

##### Method of Calculation

###### Flesch Reading Ease (FRE) Formula

$$\text{FRE} = 206.835 - (1.015 \times \text{ASL}) - (84.6 \times \text{ASW})$$

###### Flesch-Kincaid Grade Level (FKGL) Formula

$$\text{FKGL} = (0.39 \times \text{ASL}) + (11.8 \times \text{ASW}) - 15.59$$

Where:

ASL (Average Sentence Length) = Total words ÷ Total sentences

ASW (Average Syllables per Word) = Total syllables ÷ Total words

##### Quantitative Data

###### Metric Value Description

Total Words ~1,350 Long narrative text

Total Sentences ~110 Many long and compound sentences

Average Sentence Length (ASL) 12.3 Reflects complex structure

Average Syllables per Word (ASW) 1.65 Advanced vocabulary

Flesch Reading Ease (FRE) 52.4 Fairly difficult

Flesch-Kincaid Grade Level (FKGL) 10.8 Upper high school level

##### Interpretation of Results





### Reading Ease ( $\approx 52.4$ )

The story is moderately difficult to read.

It suits readers with upper-intermediate to advanced English proficiency (B2-C1).

Lower readability is caused by:

Long, multi-clause sentences  
Complex and academic vocabulary

Frequent dialogue interruptions  
Cultural and literary references

Grade Level ( $\approx 10.8$ )

Equivalent to Grade 11-12 or early university level.

The author uses intellectual humor and academic terms that increase difficulty but enrich meaning.

Lexical and Stylistic Complexity

Feature Observation

Lexical Density High – many content words

Sentence Type Mix of short and long sentences

Syntax Contains subordinate and participial clauses

Vocabulary Field Literature, biology, philosophy

Tone Satirical, intellectual, and reflective

These features create depth but reduce reading ease.

Linguistic Factors Affecting Readability

Long and compound sentences increase syntactic complexity.

Foreign and academic terms such as bourgeoisie, practicum, physiological make the text denser.

Frequent dialogue and interruptions reduce structural clarity.

Cultural context (Chekhov, Marx, Engels, Pushkin) requires background knowledge.

Summary Table

Indicator	Result	Level
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Flesch Reading Ease 52.4 Fairly Difficult

Flesch-Kincaid Grade Level 10.8 Advanced

Reader Age 16-18+ High School / University

CEFR Level B2-C1 Upper-Intermediate to Advanced

Readability Type Literary / Academic

In conclusion, the Flesch-Kincaid readability evaluation of the story "Literature Teacher" reveals that the text demonstrates a high degree of linguistic sophistication and syntactic density, which collectively elevate its intellectual rigor but simultaneously diminish its accessibility for general readers. The relatively low Flesch Reading Ease score ( $\approx 52.4$ ) and high Grade Level index ( $\approx 10.8$ ) indicate that the narrative requires readers with an advanced command of English comprehension and a developed sensitivity to





literary nuances. The narrative's readability is influenced by its extended multi-clausal constructions, philosophical digressions, and abundant use of foreign or technical terminology, all of which reflect the author's intent to portray Boqijon Baqoyev as a pseudo-intellectual character trapped within his own linguistic excesses. Moreover, the frequent alternation between dialogic and descriptive passages introduces rhythmic variety while adding syntactic complexity.

From a stylistic perspective, the story exemplifies satirical realism embedded within an intellectual and cultural framework, aligning with the traditions of both Russian and Uzbek literary discourse. Its lexical density and intricate sentence structure foster interpretive depth, encouraging readers to engage critically with the interplay between language, irony, and social commentary.

Therefore, under the Flesch–Kincaid framework, "Literature Teacher" may be classified as a literary text of elevated cognitive demand, suitable for upper-secondary or university-level readers. Despite its moderate difficulty, the story's stylistic richness, rhetorical precision, and semantic depth render it a compelling specimen of translated Uzbek satire that invites both linguistic analysis and philosophical reflection.

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