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MATN QIYINCHILIGINI BAHOLASHNING TARIXIY ASOSLARI VA ILK MODELLARI

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Annotatsiya

Ushbu tadqiqotda nazariya va amaliyotdagi asosiy o'zgarishlarni ko'rsatish uchun matn murakkabligini baholashning tarixiy evolyutsiyasi tasvirlanadi. Pestalozzi va Dyui nazariyalaridan boshlab, tadqiqot o'n yillar o'tib paydo bo'lgan murakkablikning miqdoriy o'lchovlari orqali Flesch-Kincaid va Lexile kabi formulalar orqali davom etadi. Kollej va kasbga tayyorlik standartlarida (CCRS) aks ettirilgan matnning murakkabligi haqidagi hozirgi fikrlarni muhokama qilish, shuningdek, ushbu doiraga kiritilgan sifat va o'quvchiga qaratilgan xususiyatlarni ta'kidlash kerak. Umumta'lim va maxsus ta'lim sinflaridagi misollardan foydalangan holda, tadqiqot o'qituvchilarning o'quv rejasini rejalashtirishda, o'qitish strategiyalarida va savodxonlikni o'rganishda matnning murakkabligi haqidagi yangi tushunchalarni qanday moslashtirganligi haqida so'z yuritadi. Bugungi axborot asrida samarali pedagogikaning ahamiyati ta'kidlanadi va multimodal matnlarni baholash matn(lar)ni baholashga yana bir murakkablik qatlamini qo'shganini ko'rib chiqish bilan yakunlanadi. Umum ta'lim va maxsus ta'lim sinflaridagi misollardan foydalangan holda, tadqiqot o'qituvchilarning o'quv rejasini rejalashtirishda, o'qitish strategiyalarida va savodxonlikni o'rganishda matnning murakkabligi haqidagi yangi tushunchalarni qanday moslashtirganligi haqida so'z yuritadi. Bugungi axborot asrida samarali pedagogikaning ahamiyati ta'kidlanadi.

Kalit so'zlar: matnning murakkabligi, o'qish formulalari, savodxonlikni rivojlantirish, ta'lim asoslari, sifat bahosi, miqdoriy chora-tadbirlar, tabaqalashtirilgan ta'lim, raqamli savodxonlik, kollej va kasbga tayyorlik standartlari (CCRS), tarixiy evolyutsiya.

ИСТОРИЧЕСКИЕ ОСНОВЫ И РАННИЕ МОДЕЛИ ОЦЕНКИ СЛОЖНОСТИ ТЕКСТА

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Аннотация

Оценка сложности письменных текстов на протяжении десятилетий была неотъемлемой частью планирования обучения. В последние годы концепция сложности текста претерпела значительные изменения, перейдя от общих качественных оценок строгости текста к более тонким, многомерным измерениям. В этом исследовании будет описана историческая эволюция оценки сложности текста, чтобы проиллюстрировать основные изменения в теории и практике. Начав с основополагающих теорий Песталоцци и Дьюи, мы перейдем к количественным показателям сложности, которые появились десятилетия спустя с помощью таких формул, как Флеша-Кинкейда и Лексила. Далее будет рассмотрено современное представление о сложности текста, отраженное в стандартах подготовки к поступлению в колледж и карьере (CCRS), а также качественные и ориентированные на читателя функции, включенные в систему. Наконец, исследование завершится рассмотрением способов, с помощью которых цифровая грамотность и оценка мультимодальных текстов добавили еще один уровень сложности к оценке текста (ов). На примерах из общеобразовательных и специальных учебных заведений в исследовании будет рассмотрено, как учителя адаптировали новые концепции сложности текста к планированию учебных программ, стратегиям обучения и обучению грамоте. Будут освещены последствия для эффективной педагогики в современную информационную эпоху.

Ключевые слова: сложность текста, формулы удобочитаемости, развитие

грамотности, образовательные рамки, качественная оценка, количественные показатели, дифференцированное обучение, цифровая грамотность, стандарты готовности к поступлению в колледж и карьере (CCRS), историческая эволюция.

HISTORICAL FOUNDATIONS AND EARLY FRAMEWORKS OF TEXT COMPLEXITY ASSESSMENT

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Abstract

Assessing the complexity of written texts has been a persistent feature of instructional planning for decades. In recent years, the conceptualization of text complexity has evolved dramatically, moving from general qualitative assessments of a text's rigor to more nuanced, multidimensional measurements. In this study, the historical evolution of text complexity assessment will be described in order to illustrate major shifts in theory and practice. Beginning with the foundational theories of Pestalozzi and Dewey, the study will move through the quantitative measures of complexity that emerged decades later via formulas such as Flesch-Kincaid and Lexile. A discussion of current thinking around text complexity as reflected in the College and Career Readiness Standards (CCRS) will follow, also highlighting the qualitative and reader-centered features included in the framework. Finally, the study will conclude by reviewing the ways in which digital literacy and assessment of multimodal texts have added yet another layer of complexity to the evaluation of text(s). Using examples from general education and special education classrooms, the study will address how teachers have adapted the new concepts about text complexity in curriculum planning, instructional strategies, and literacy learning. Implications for effective pedagogy in today's information age will be highlighted.

Keywords: text complexity, readability formulas, literacy development, educational frameworks, qualitative assessment, quantitative measures, differentiated instruction, digital literacy, college and career readiness standards (CCRS), historical evolution.

Introduction

Text complexity assessment occupies a central position in modern literacy education because it directly influences how teachers select reading materials, design instructional tasks, and support learners with different levels of language and cognitive development. The ability to determine whether a text is appropriate for a particular group of students is not merely a technical matter; it is also a pedagogical decision connected with curriculum goals, learner readiness, classroom context, and the broader aims of education. For this reason, the assessment of text complexity has gradually developed from intuitive judgments about the "difficulty" of reading materials into a more systematic field that combines theoretical, linguistic, psychological, and technological perspectives.

Historically, the problem of matching texts to learners can be traced to early educational thought. Pedagogical thinkers such as Johann Heinrich Pestalozzi emphasized the importance of gradual learning, the movement from simple to complex knowledge, and the adaptation of instruction to the child's developmental level. Later, John Dewey's ideas about experience-based education strengthened the view that learning materials should not be selected only according to their formal content, but also according to their relevance, accessibility, and connection with learners' lived experiences. These early frameworks did not offer mathematical formulas for measuring text difficulty, yet they created an important conceptual basis for later approaches: educational texts must correspond to the learner's intellectual, linguistic, and social development.

During the twentieth century, the rapid expansion of public education and standardized curricula increased the need for more objective ways of evaluating reading materials. As a result, quantitative readability formulas became widely used in schools, publishing, and educational

research. Measures such as the Flesch Reading Ease, Flesch-Kincaid Grade Level, and later Lexile Framework attempted to estimate the difficulty of a text through observable linguistic features, including sentence length, word frequency, syllable count, and syntactic structure. These tools made it possible to compare texts more efficiently and to provide teachers with numerical indicators of readability. However, while such formulas contributed significantly to instructional planning, they also revealed certain limitations. A text may be short and linguistically simple but conceptually demanding; conversely, a text with complex sentence structures may be highly accessible if students possess sufficient background knowledge and motivation.

Contemporary approaches to text complexity therefore emphasize the need for a multidimensional framework. Current educational standards, including the College and Career Readiness Standards, recognize that text complexity cannot be measured through quantitative indicators alone. Instead, assessment should include three interrelated dimensions: quantitative measures, qualitative features, and reader-task considerations. Qualitative analysis focuses on elements such as levels of meaning, text structure, language conventionality, clarity, knowledge demands, and cultural references. Reader-centered factors include students' prior knowledge, reading purpose, motivation, language proficiency, and learning needs. This broader understanding has shifted the teacher's role from simply assigning a text based on grade level to carefully evaluating how a text functions within a specific instructional situation.

The issue becomes even more significant in inclusive and differentiated classrooms. General education and special education teachers often work with students whose reading abilities, language backgrounds, cognitive processing skills, and learning preferences vary considerably. In such contexts, text complexity assessment serves as a tool for equity. It helps teachers select challenging but accessible materials, scaffold difficult concepts, adapt tasks, and provide alternative forms of support without lowering academic expectations. Proper assessment of text complexity also allows educators to balance rigor and accessibility, ensuring that all students have opportunities to engage with meaningful and intellectually valuable texts.

In the twenty-first century, the concept of text complexity has expanded further due to the growth of digital literacy and multimodal communication. Students no longer encounter information only through printed pages; they read websites, infographics, hypertexts, videos with captions, interactive documents, and visual-verbal compositions. These forms require new interpretive skills, including navigation, evaluation of credibility, integration of visual and verbal information, and critical interpretation of digital sources. As a result, the assessment of text complexity must now consider not only vocabulary and syntax, but also layout, multimodal design, interactivity, media structure, and the cognitive demands of digital environments.

Thus, the historical development of text complexity assessment reflects a movement from general pedagogical intuition to quantitative measurement, and from measurement to multidimensional, context-sensitive evaluation. Understanding this evolution is important for contemporary educators because it clarifies why no single formula or method can fully determine the difficulty of a text. Effective literacy instruction requires a balanced approach that combines measurable textual features with professional judgment, knowledge of learners, and awareness of changing communication practices. This article examines the historical foundations and early frameworks of text complexity assessment, analyzes their development into modern standards-based approaches, and considers their implications for teaching and learning in today's information-rich educational environment.

Assessing the complexity of text has become an important function in selecting high-quality educational materials for diverse young readers. Over time, various methods have been developed for determining which materials to teach and how to orchestrate classroom reading events to boost reading achievement. While evaluations of text typically started from a qualitative perspective—essentially asking a reader or teacher to describe whether particular books or other texts are helpful for particular purposes—over the 20th century, greater emphasis was placed on more scientific assessments of complexity. Within the past several decades, however, many

researchers have begun to incorporate not only quantitative features of text but also qualitative attributes, such as density of content or thematic organization, as additional parameters that could profitably be considered in defining complexity (1, p. 161).

This study delineates the scope of the issues involved in designing assessments of the complexity of written texts, from the very early years of formal schooling to projects now underway globally as we confront the challenges of forging solid digital literacy in the information age. While the evaluation of text complexity has a long history within schools, this study focuses specifically on the historical antecedents of written-text assessments used in schools. Once this historical context has been outlined, a more in-depth examination of currently used quantitative models will follow, along with an overview of specific examples of recent approaches grounded in qualitative dimensions that hold promise for forming the basis of increasingly comprehensive assessments of complex written text.

How would you evaluate the complexity of this text for your students? An evaluation of text complexity can inform educators as to what materials can be used to build students' reading abilities. Furthermore, applying text-complexity frameworks and measures to selected texts can help enrich the literacy environment of the classroom. For decades, the evaluation of text complexity has occurred by way of frameworks and measures used by educators to assess both the quantity and quality of a text, including qualitative and quantitative results. Specifically, this paper discusses the evaluation of text and its effects upon teachers and students in terms of building literacy skills.

The complexity of text can first be measured by widely used readability formulas. Readability formulas consist of quantitative measures used to ascertain the overall reading level of given passages of writing, such as those provided by Flesch-Kincaid or Lexile. In contrast to this type of evaluation, other frameworks, such as the qualitative reading inventory, focus on more qualitative measures, including characteristics of thematic density and organizational structure, which together offer a more comprehensive impression of text (2, p. 645). Furthermore, even with the quantitative nature of readability formulas in mind, the complexity of text interacts with the complexity of the reader; therefore, tailoring texts for students is a fundamental component of instruction that these frameworks support. Today's reading frameworks, especially those concerned with complex text, include a much more diverse set of factors that interact with text and have thus widened our perspective on the matter.

Although most attention has focused on the quantitative parameters of text evaluation, qualitative characteristics began to emerge in the 1980s in the form of more sophisticated text structures. In their 1988 book, Pearson and McKeown explored reading difficulty in terms of the complexity of theme, the nature of text organization, the degree of coherence in texts, and intertextual connections within a collection of related texts. A further evolution in evaluation parameters came with the adoption of College and Career Readiness standards in 2010, which presented a text-complexity framework through a multidimensional lens (3, p. 132). In describing the CCRs, PARCC's website explains that "the CCRs define three ways to think about complexity—all are important. Quantitative measures of complexity can tell us something about a text's words and sentence length. Qualitative measures give us a glimpse into the characteristics of the content itself and a measure of how the text is organized. The third perspective considers the reader and the task that are part of the reading experience. Ultimately, a text is most complex for a particular student when the reader is interested in the material, when the content is relevant to the reader's life experience and prior knowledge, and when the material challenges the student's cognitive abilities."

Several key evolutionary evaluation parameters became evident in classrooms and programs serving struggling readers and writers. Teachers changed how they designed their instructional programs and planned lessons, and they adopted a more responsive instructional stance (4, p. 134). By tailoring the texts used in lessons to specific students' needs, teachers were able to vary instruction in important ways. This responsive stance involves selecting different

instructional approaches based on the selection of text. Literacy development is not just a transaction between an individual and a text; it is enhanced by the inclusion of discussion, analysis, and strategies for scaffolding students' understanding of text.

There has been a need for a revised approach to measuring text complexity as digital literacy has developed rapidly. The progress of technology and the increasing use of multimedia and multiple modes of communication in online environments have influenced the field by incorporating new types and formats of text into complexity measures. While the added dynamics of text within these models have complicated aspects of measuring complexity, they have also provided a more realistic and multimodal scenario for assessing readers' literacy practices.

The historical development of text-complexity evaluation parameters bears a significant relationship to the educational systems and pedagogical methods that have developed over time. These parameters also have a cumulative effect on literacy education by shaping reading skills that correspond to various literate identities. By tracing the historical development of these parameters, those involved in education can gain deeper insight into the complexities of reading and thus better meet the needs of their students.

The evaluation of the complexity of written text was first conceptualized by early educational thinkers and theorists. Their foundational ideas and approaches have profoundly influenced subsequent models of education, shaping current educational methods and practices, particularly in relation to literacy. Johann Heinrich Pestalozzi and John Dewey were two early influential thinkers who shaped the conceptualization of reading from different perspectives and eras. From an 18th-century perspective, Pestalozzi claimed that the texts used for learning to read must be natural and meaningful to the learner, corresponding to the learner's developing cognitive skills. In the 19th century, Dewey laid the groundwork for what would become known as progressive education. This model of teaching and learning stressed the value of experiential activity and promoted student-centered learning through participation in the teaching-learning process. As such, the complexity of the texts read by students became an important consideration because it influenced both students' critical-thinking skills and their engagement with what they read.

While concerns have existed about the validity of measures of text complexity, the use of readability formulas has continued to evolve and inspire new evaluation practices. The introduction of formulas such as Flesch-Kincaid and the Gunning Fog Index in the 20th century made it possible to use objective criteria to measure the difficulty of text based on such indicators as average sentence length and the percentage of unfamiliar words. Early adoption of readability formulas was frequently based on a pragmatic sense of their usefulness for quick and easily reproducible assessments of written texts. At the heart of such simple formula-based assessments is the assumption that such procedures are fair. Readability tests are easy for educators to apply without requiring extensive knowledge of linguistics or theories of literacy. Furthermore, such procedures make it easier for educators to choose grade-level readings that challenge their students to demonstrate their understanding and growth in reading ability.

Bradley (2006) commented that "Flesch-Kincaid focuses primarily on surface features of written texts, such as sentence length and word unfamiliarity, rather than more profound features such as organizational theme, situational context, and underlying meaning in the text." Moreover, such formulas have been criticized for lacking an adequate measure of the comprehension processes involved in reading (Chall, 2000). Thus, by relying on numbers obtained from straightforward formulas, simple pedagogical measures of complexity may inadvertently preclude discussion about differences in students' literacy histories and instead promote instructional practices and text choices that diminish meaningful participation with texts. This is because scores obtained from measures of complexity can create an educational false bottom, so long as educators choose publications that are judged to be grade-level appropriate.

The CEFR has also stimulated the development of a number of resources for evaluating texts and for assessing performance in ways that take account of the complexity of the text used

for learning and assessment. The use of rubrics for classifying written texts and performance descriptors at CEFR levels provides a systematic basis for making decisions about the use of written and spoken materials for learners of different abilities. The British Council and Cambridge Assessment have developed materials that operationalize CEFR levels in evaluating performance and learning materials.

In many countries around the world, CEFR principles and frameworks are being used to develop local competence standards outside the European region. As a result, the debate surrounding text complexity is now perceived through a global lens in which language learning and cultural-literacy interactions and shifts play a significant role. With the CEFR being introduced into the English-speaking world, a new appreciation of and emphasis on the contextualization of learning, teaching, and assessment processes through a comprehensive framework, contextual considerations, methodological developments, and global applications have permanently changed the way we view and assess text complexity within several linguistic contexts and within language education in general.

Qualitatively directed approaches have also emerged as essential in assessing text complexity and understanding how texts are perceived by readers in different learning contexts. Qualitative approaches to assessment help enrich our understanding of text complexity, readers, and the interactions between them (5, p. 35). According to Hays and Singh (2011), qualitatively oriented approaches to assessment can enhance learning environments by foregrounding learning, teaching, and assessment as authentic qualitative research practices. This study investigates text complexity from the reader's perspective and posits that adopting a qualitatively directed approach to assessments of text complexity can enhance our understanding of text-reader interactions within unique learning contexts.

The historical frameworks for evaluating text complexity provide a basis for the development of formative assessment strategies in literacy instruction that are responsive to the qualitative, quantitative, and task characteristics of readers in the Common Core State Standards. By grounding their formative-assessment practices in well-established frameworks, teachers can evaluate the qualitative, quantitative, and task-related aspects of text complexity and thereby provide significant learning opportunities for students while acknowledging the differing progression of text complexity in today's schools. The parameters used to evaluate text complexity provide meaningful opportunities for contemporary educational stakeholders. Each of the perspectives that emerged during various historical periods offers glimpses into the characteristics of reading and the process of literacy development (7, p. 25).

Historically, reading and literacy development have been modeled by a complex interaction of cognitive, linguistic, and contextual factors and thus are not determined solely by the characteristics of the individual reader or the attributes of textual material. While there is no single framework that can describe the complexity of all texts, research and educational practice have provided several different models developed in response to specific historical contexts and educational needs. The Lexile framework for reading is one of the most popular of these models in contemporary classrooms. While this framework is important for making text complexity accessible to standardized measurement and evaluation, it has been criticized for being overly simplistic and for potentially stripping away the richness of literary engagement by quantifying aspects of text.

Additionally, the CCSS provide broader considerations that offer a qualitative view of text complexity, including structure, language, and thematic content. This evolution in our understanding of reading marks a shift from a simple model of accessing information from text to a more holistic reading process that offers a more complete opportunity to evaluate and teach a variety of literary works.

The model of responsibility in reading provided by the CCSS's considerations of text complexity has also evolved over time. By gradually releasing responsibility for reading to students at different grade levels, educators must engage students with increasingly complex texts.

This pedagogy illustrates the dynamic nature of text complexity and how an appropriate level of challenge can promote literacy development when combined with instructional support. Cultural traditions of reading also provided the basis for the work of Russian psychologist L. S. Vygotsky, who described the process of cognitive development through the zone of proximal development. This concept explains how challenges in reading, supported by appropriate tasks and instructional scaffolding, can improve a student's literacy development by meeting the student at the appropriate point of need.

Multidimensional metrics for evaluating text complexity offer a way for teachers and administrators to assess students' literacy development across various dimensions. The use of these tools in evaluation strategies allows teachers to understand how students process different types and structures of written text, acknowledging that reading is not simply a product of reading skills and comprehension but a social effort supported in specific educational and cultural contexts. Educators are increasingly called upon to align instruction with the needs of different students, recognizing that text complexity is not exclusively inherent in a text but also derives from the interaction between the reader and the text (6, p. 534). This requires the development of differentiated educational strategies that promote both engagement and understanding, further emphasizing the interaction between text complexity and pedagogy.

In short, the evolution of the parameters used to evaluate text complexity reflects an expanding understanding of the factors that influence literacy development. As the field moves toward more integrated approaches that consider cognitive, linguistic, and cultural dimensions, educators face the task of applying these insights to promote a more equitable and effective reading experience. The implications for practice are profound, as they call for critical examination of curricular materials, instructional strategies, and assessment methods to ensure that all students are equipped to navigate increasingly complex texts in a rapidly evolving information landscape.

In considering future directions for research on text-complexity assessment, it is imperative to integrate insights from the existing literature while connecting them with ongoing educational reforms.

The historical evolution of text-complexity evaluation illustrates a central journey marked by the iterative refinement of concepts and methodologies in response to changing paradigms of educational practice and literacy development. From the beginning of the 20th century, when scholars such as Thorndike (1917) advocated empirical readability measures, to the contemporary recognition of text complexity as a multifaceted phenomenon, substantial transformation has occurred. Initially, readability formulas dominated the field, focusing mainly on the syntactic and lexical dimensions of texts. The Dale-Chall readability formula (1948) and the Flesch-Kincaid grade level (1975), for example, offered quantitative measures that guided educators in selecting appropriate reading materials for students. However, these early frameworks were often criticized for relying excessively on surface-level indicators while neglecting critical elements such as content knowledge, reader background, and the sociocultural context of reading practices (Chall, 2000; Snow, 2002).

In response to these limitations, more nuanced methodologies have emerged. The gradual integration of qualitative assessments has recognized the importance of reader engagement and the cognitive demands imposed by texts. The CCSS introduced a more comprehensive approach by incorporating both quantitative measurements and qualitative factors, thereby acknowledging that text complexity includes such elements as language features, structure, and thematic depth (CCSS, 2010). This shift reflects an understanding that literacy is not merely a mechanical competence but is influenced by the interaction between text characteristics and reader attributes.

Assessing text complexity has long been a priority in instructional settings. The many approaches to this task, stemming from the theories and methods of scholars of language, literature, and learning, have collectively evolved from simple qualitative assessments to more complex quantitative calculations. In recent years, however, there has been increasing recognition that complexity extends beyond the simple numerical calculations of formulas such as the Flesch

score. Rather, complexity is often characterized by qualitatively distinct attributes, such as organizational structure or thematic content, as well as by a host of contextual variables, including readers' prior knowledge, life experiences, and the social dynamics of particular classrooms. The last decade, in particular, has seen a proliferation of approaches emphasizing integrative features of complex texts, including the type of media or genre used to present information and the goals of particular lessons.

This article reviews issues that have emerged regarding the assessment of complex texts for instructional planning, particularly in light of emerging trends in reading methods and commitments set in motion by rapid technological developments. The article also considers the challenges to text assessment posed by emerging evaluative approaches developed to address the complexities of multimodal text and digital platforms. It characterizes the current state of affairs as one that holds considerable promise while simultaneously posing a range of difficult educational challenges. In the end, the article signals the need for critical evaluation of the various approaches, including those that reflect a New Literacies orientation, such as the work of the New Literacies Research Lab, which positions critical thinking and problem-solving across a variety of media as hallmarks of literacy in the 21st century.

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