

Review Article

DEVELOPMENT OF A SET OF ASSESSMENT MEANS FOR TEACHING FOREIGN LANGUAGES, BASED ON THE READABILITY COEFFICIENT

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Abstract

This article discusses the problem of determining the complexity and criterion of readability of texts in order to review educational texts for assessing foreign language achievements of students who have mastered the program of the discipline "Foreign Language" in Surgut Oil and Gas Institute. The author identifies and analyzes the criteria for readability of 9 texts used for teaching students in 2016-2017. The complexity of perception, readability, and language level of texts was determined using the criteria: Gunning Fog index; Flesch Kincaid; ARI (Automated Readability Index); Coleman Liau index; SMOG. Results: three texts do not correspond to the language level of the first year of a technical university, three out of nine are very light. In connection with the results, the author gives recommendations for the processing of texts and the development of a set of evaluation tools for foreign languages, taking into account the assessment of the readability of texts.

Key words: readability, evaluation criteria, text, language level.

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INTRODUCTION

Improving the quality of foreign language education is an integral task of modern higher education. It is associated with the modernization of both the content of education and the optimization of methods and technologies of the educational process. One of the tools for assessing the assimilation of educational material in higher education is a set of assessment tools. Control and evaluation tools (CBS) are designed to monitor and evaluate the educational achievements of students, students who have mastered the program of academic discipline. CBS includes control materials for conducting current control and intermediate certification in the form of a test or exam.

With the development of the information society, information technologies allow educators to improve the process of assessing the quality of education. The application of statistical and probabilistic methods in the development of educational material, assessment tools is relevant today, as they can be used to analyze, synthesize and model texts depending on the level of students' training and allows you to implement the principle of accessibility to the construction of educational material.

This study is devoted to methods for optimizing the selection of educational texts (readability criterion) in order to develop a set of assessment tools designed for teaching a foreign language at Surgut branch of Tyumen Industrial University.

Currently, the criterion of readability is applied in many areas, including in the pedagogy of domestic and foreign teachers.

Kiselnikov, A. S. presents the author's concept of differentiating four characteristics of the text: difficulty, comprehensibility, complexity and readability. The relevance of the work is determined by the existing ambiguity in the interpretation of these terms. The determination of the presented characteristics of the text is based on its parameters: 1) exclusively quantitative - readability, 2) mainly quantitative - understandability, 3) complex quantitative and qualitative - complexity (Kiselnikov, 2015; Ece & Tünay, 2018).

Zmeeva, N. B. measures the readability of a text using a set of linguistic and psychological parameters; the author also uses a probabilistic-statistical apparatus to optimize the selection of texts used in the learning process (Zmeeva, 2008; Salakhova et al, 2018).

Okladnikova, S.V. developed a model for a comprehensive assessment of the readability of test questions, based on an automated calculation of quantitative characteristics of the content of test questions. Taking into account the design features of the test tasks, she formed a nomenclature of single indicators, calculated normalized values and weight coefficients, sheared the range scale to determine the readability level, and proved the adequacy of the developed model (Okladnikova, 2010).

Ivanov, V.K.P. Offers and justifies a set of criteria for a comprehensive assessment of the quality of electronic educational materials. They describe basic models for the quantitative assessment of document parameters according to specified criteria. The proposed set of criteria, together with the appropriate calculation methods, according to the author, can serve as the basis for the implementation of automated control of assignments in educational technologies, as well as support for the technology of work with electronic educational and methodical complexes in general. Provides information on the implementation of the described approaches (Ivanov, 2012).

Crossley, S. A., Louwerse, M. M., McCarthy, P. M., & McNamara, D. S. Text cohesion is analyzed in several ways, including coherent cohesion, causal cohesion, and density (Crossley, et al 2007).

Bunch, G. C., Walqui, A., & Pearson, P. D. Considering reading theory in their native language and second language, the authors described the problems that ELs encounter when they read complex texts and evaluate educational responses. Researchers have proposed solving this problem by modifying existing texts so that they correspond to the expected levels of student reading (Bunch, et al, 2014).

Rog, L. J., & Burton, W. Investigated the relevance of texts and readers' abilities, and proposed a method for aligning learning materials to assess knowledge and learning (Rog & Burton, 2001).

DuBay also described the principles of readability, readability of formulas. (DuBay, 2004).

Coleman, M. & Liau, T. L. Computer programs that measure readability are considered, which are mainly based on routines that measure the number of syllables, usually by counting vowels. The authors argue that the disadvantage in evaluating

syllables is that you need to type prose on the computer and do not need to evaluate syllables, since the word length in letters predicts readability better than the word length in syllables (Coleman & Liau, 1975).

METHODOLOGY

Data Collection. The material under study is the educational texts from the set of assessment tools for the discipline "Foreign Language", developed for 2016-2017 for students of the TIU branch in Surgut.

The following text analysis tools (Coleman Liau index, Flesch Kincaid Grade Level, ARI (Automated Readability Index), SMOG) were used. In addition to them, other characteristics, such as the word length in the sentence and the number of syllables, were also considered as a measure of the complexity of educational and assessment texts.

The Flesch Reading Ease Read-ability Formula, hereinafter referred to as FRE

FRE is one of the most famous and "popular" indexes. It is based on the ratio of the average length of a sentence in words and the average length of a word in syllables. It is calculated by the formula:

$FRE = 206.835 - (1.3 \times ASL) - (60.1 \times ASW)$, in which ASL is the average length of a sentence in words, and ASW is the average length of a word in syllables, respectively. The readability index has a gradation from 0 (which is an indicator of

extremely difficult to read text) to 100 (which is an indicator of very easy-to-read material).

The Flesch-Kincaid Reading Age (hereinafter - FKRA) formula readability index (FKRA) formula is used to assess the complexity of texts in textbooks. It allows you to calculate what level of education you need to read the text. Again, all this is designed for English and the level of education in the United States.

Gunning Fog index - this tool allows you to calculate the index of the weighted average number of words in a sentence and the number of long words in a word.

Coleman Liau index - determines the level of education of students for whom the text should be presented.

Automated Readability Index (ARI) - designed to measure understanding of the text. Like other popular readability formulas, the ARI formula displays a number that roughly corresponds to the grade level needed to understand the text.

Flesch Reading Ease is a formula for assessing the level of complexity of a text.

Flesch Reader is a simple approach to measure reader level. This formula is the simplest and is used to assess the difficulty of reading a text written in English.

RESULTS AND DISCUSSIONS

Using the above formulas allows us to compare the results.

Table №1. Characteristics of assessing the complexity of texts in a foreign language from a set of assessment tools 2016-2017

	Text 1	Text 2	Text 3	Text 4	Text5	Text 6	Text 7	Text 8	Text 9
Number of characters (without spaces)	1,782.00	1,279.00	1,205.00	1,438.00	1,336.00	3,000.00	1,131.00	1,532.00	2,118.00
Number of words	310.00	264.00	220.00	288.00	249.00	636.00	240.00	267.00	429.00
Number of sentences	15.00	18.00	18.00	23.00	12.00	40.00	14.00	14.00	26.00
Average number of characters per word	5.75	4.84	5.48	4.99	5.37	4.72	4.71	5.74	4.94
Average number of syllables per word	1.99	1.66	1.88	1.75	1.81	1.61	1.60	1.91	1.67
Average number of words per sentence	20.67	14.67	12.22	12.52	20.75	15.90	17.14	19.07	16.50
Gunning Fog index	19.49	12.84	14.16	13.62	16.65	12.84	12.36	17.82	12.29
Coleman Liau index	16.61	10.69	14.01	11.21	14.36	10.10	10.21	16.42	11.46
Flesch Kincaid	15.99	9.75	11.33	9.90	13.83	9.63	10.02	14.39	10.54
ARI (Automated Readability Index)	15.98	8.72	10.48	8.35	14.22	8.74	9.34	15.13	10.07
SMOG	17.56	12.40	12.75	12.49	15.55	12.41	12.60	15.68	12.36
Flesch Reading Ease	17.20	51.27	35.61	46.37	32.88	40.1	53.72	43.3	48.89

Analyzing the results obtained using mathematical methods.

For example, according to the ARI (Automated Readability Index), texts 1,5, 8 correspond to the upper grades of a middle English school, this is approximately 1 university course for students studying English as a foreign language. Other texts do not correspond to this level.

In accordance with the Gunning Fog index, the index should be close to 20, in this text selection only 1, 8 correspond to this figure. These texts can be classified as a scientific text in terms of difficulty, reading such texts in the first year of university is not an easy task.

According to Average number of words per it came out that as 16.8 grade level, meaning college level. In the texts, 1.5.8 exceed this number, which does not correspond to the norm of 1 course.

Coleman Liau index should not exceed 12 for the age of 18 years, while in texts 1,3,5,6,8 there is a significant excess, which indicates the level of difficulty in perceiving the text.

The value of Flesch Kincaid should be more than 30, since 0-30 texts with an index of 0-30 are intended for people with higher education.

So, among the readability indicators, it is the index of compliance with the level or number of years that is most indicative.

The results of the analysis also showed that some texts require elaboration and adaptation for students studying a foreign language in the conditions of a non-linguistic university, since the level of training of students does not correspond to the stated assessment tools. While other texts were too easy to read and understand.

In addition, all 9 texts are incorrectly distributed, in our opinion, by the level of complexity, in such a combination, the dynamics of the complexity of texts by levels is not traced. Texts 1 are more difficult in complexity than text 2, text 5 is more difficult than text 2, etc. Each text should be based primarily on previously studied and processed material, i.e. based on the vocabulary of the previous text.

CONCLUSION

Based on the data, we came to the following conclusion.

We believe that creating a new set of assessment tools for students of Surgut branch in Surgut on the discipline "Foreign Language" for 2019-2020 would be useful to work out and adapt these texts in accordance with the language training of students, to build the sequence of the proposed educational and assessment material at the proper scientific and methodological level, which will undoubtedly contribute to improving the quality of foreign language education at the university.

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