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USING ACADEMIC VOCABULARY AND READABILITY FORMULAS TO CHOOSE LANGUAGE LEVEL-APPROPRIATE NEWSPAPER ARTICLES FOR EXTENSIVE READING AT UPPER-SECONDARY SCHOOL
Bachelor’s thesis

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Olen koostanud töö iseseisvalt. Kõik töö koostamisel kasutatud teiste autorite tööd, põhimõttelised seisukohad, kirjandusallikatest ja mujalt pärinevad andmed on viidatud.

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Töö autori allkiri ja kuupäev
PREFACE

Extensive reading is an important supporting tool in foreign language learning. Different authentic texts can be used for extensive reading, including newspapers, for example. Newspapers are still popular and widely read across the globe, both in paper and digital forms. They provide information connected with a variety of different topics. Newspapers also are a source of authentic language, which is an important factor in foreign language learning. Therefore, newspaper articles may be used to develop foreign language skills of upper-secondary school students.

The aim of the present thesis is to examine articles from some of the most popular U.S. and U.K. newspapers within different topics using readability formulas and academic vocabulary to discover how suitable they are for upper secondary school students of Estonia, whose level of language in terms of CEFR categorization is expected to be B1-B2 according to the Estonian National Curriculum for Upper-Secondary Schools.

The bachelor’s thesis consists of four parts: an introduction, Chapter I, Chapter II and a conclusion. The introduction provides a brief overview of readability, academic vocabulary, independent and extensive reading, CEFR, newspapers, and formulates research questions relevant to this thesis. Chapter I explains the theory behind the Academic Word List and the CEFR, as well as the Flesch-Kincaid and the Gunning Fog readability formulas, which are used in this study. Chapter II concentrates on the analysis of U.S. and U.K. newspaper articles, comparing newspapers and topics in terms of language level required to read them. In the conclusion, the results of the study are discussed with comments on limitations of the study and possible future research in this area.
INTRODUCTION

Independent and extensive reading as an aspect of foreign language acquisition

Independent reading may be viewed as a valuable aspect of foreign language learning as there is a large amount of empirical evidence from different studies. Renandya (2007) writes about some of those studies, showing that positive effects of independent reading include improved test scores, reading comprehension, word recognition and oral sentence repetition. It can be defined as activity where “the students are actually choosing something to read that is at a level of difficulty that allows them to read fluently and to understand what they are reading, and it is something that students can do at any time of the day or night” (Snowball 2012: 1). The goal of independent reading is to “help students develop their English vocabulary, reading fluency, and reading comprehension.” (Lipp 2018: 1).

In the field of English language teaching, independent reading outside of the classroom is often called ‘extensive reading’ and is contrasted with ‘intensive reading’ in the classroom. Although extensive reading can occur in the classroom and vice versa, there is a reason why they usually do not. Intensive reading is connected with relatively short texts, which are used with some specific goal, for example, to teach grammar or vocabulary. In this case the teacher provides support for learners, explaining and guiding them. Extensive reading is connected with longer texts, which are read for enjoyment or general knowledge. Students themselves choose topics and texts they want to read and do it independently, without interference or control. The role of the teacher in this case is to help them find a suitable text, offer a variety of reading material and indirectly control the results of this activity (Aloysef 2006, Hafiz and Tudor 1989, Macalister 2010).

When students “have a large enough vocabulary and sufficient reading fluency to silently read English stories and books outside class” (Lipp 2018: 1) and are motivated to do so, it is important to help them to choose appropriate texts. Upper secondary school students in Estonia are expected to have B1-B2 levels of English language proficiency, which allows them to read and understand “the main ideas of complex text on both concrete and abstract topics” in case of B2 level or “the main points of clear standard input” in case of B1 (Council of Europe 2004: 25), but they may not be able to choose a level-appropriate text for themselves. Therefore, teachers need to know how they can help a student to choose an appropriate text for his or her independent/extensive reading. Metaferia (2016) conducted a study with 11th grade
Ethiopian students and found that if a student possesses low reading comprehension abilities, he or she cannot effectively read and engage in independent reading. This, in turn, can lead to a more negative attitude towards the learning of English, as students will have a presupposition that he or she cannot progress further due to the absence of required knowledge or inability to improve language skills. That is why it is important to choose a level-appropriate texts for students’ independent reading, which will both give them motivation and a better command of the language.

**Online newspapers as a resource for extensive reading**

Nowadays the Internet is used widely across the world. According to Reuters Digital News Report, only 36% of all respondents used print media as a source of news compared to digital media, which was used by 82% of respondents (Reuters 2018). Online newspapers are a part of digital media. Online newspaper is “a regularly updated online publication containing news articles and other content relating to current events; (sometimes) specifically the digital version of a print newspaper” according to the definition provided by Oxford Dictionary (Oxford University Press 2018).

Online newspapers appear to be a good resource for extensive reading at upper-secondary level, as they are easily accessible and often free of charge. They require only a device with access to the Internet to use them and also cover different topics, so people using them can choose what to read. In addition to that, online newspapers do not have space and time limitations of printed newspapers. As a result, it is more convenient to conduct research on online newspaper articles rather than printed newspapers because students can easily access them and choose a suitable topic.

**Readability as a way to assess text difficulty**

According to Bailin and Grafstein (2016: 10), “In the most general terms, readability is concerned with effective communication of ideas and information. /…/ The study of readability is the study of those properties of written texts that aid or hinder the effective communication of ideas and information.” Systemized studies of readability with more theoretical background began to emerge at the beginning of the 20th century and are still continued to this day. The purpose of readability studies is to provide assistance with grading reading material according to the level of language needed to comprehend it. Readability itself can be defined as “the level of ease or difficulty with which text material can be understood by a particular reader who is reading that text for a specific purpose.” (Pikulski 2002: 1).
Readability formulas as a product of study in this field often measure two factors of text difficulty:

1. syntactic difficulty, which is measured by sentence length;
2. semantic difficulty, which is measured by word length in syllables, number of letter or frequency. (Fry 2006)

However, readability formulas are not limited by these two factors as additional factors can be included in text measurements with different formulas. These formulas are used in a variety of different areas ranging from education to legal system. Formulas produce numerical values, which can later be interpreted as the level of difficulty or ease with which a text can be read and comprehended. (Fry 2006)

The general purpose of readability formulas is to help students to be a better reader. Although readability formulas provide important information on text difficulty, they “must be used along with subjective judgment because formulas do not take many important factors into account” (Fry 2006: 2). Therefore, they must be viewed not as an ultimate score, but as a tool to help a student in choosing appropriate texts to read.

The amount of research concerning readability is quite large. The following examples of the recent research provide just a small glimpse into the scale of research in this field:

1. Wasike (2018) analyzed 400 news articles using Flesch-Kincaid formula to determine their readability.
3. Ismail and his colleagues (2017) analyzed 20 websites of Indian government in terms of readability.

Each aforementioned research contains one or two readability formulas, which are used in this study.

**Academic vocabulary as a way to assess text difficulty**

Academic vocabulary can be defined as “the set of words that fits into the academic discourse (spoken or written) and can be used across many disciplines” (Nushi 2016: 52). The words belonging to academic vocabulary are abstract and are rarely encountered in everyday life. Therefore, if a student encounters such word(s) it can prove difficult to him/her to understand what it means and the more words from
academic vocabulary he/she encounters, the more difficult the text may be. In that case a student may need additional support from the teacher.

Academic vocabulary is important for upper secondary school students if they are to pursue a university education. A vast amount of information is available in English and is used in tertiary education, therefore many academic texts require the knowledge of English in order to comprehend them. For example, a study conducted by Petursdoddir (2013) was concerned with upper secondary school students’ level of academic English in Iceland because university students had difficulty understanding given reading material, despite good knowledge of general English. Thus, academic words can be used to a certain extent as a measure of difficulty, especially if they occur in non-fictional texts and require additional attention.

**Importance of CEFR in assessing text difficulty**

The Common European Framework of Reference for Languages (hereinafter CEFR) was launched in 2001 by the Council of Europe. There were multiple ideas behind the CEFR:

- promote and facilitate co-operation among educational institutions in different countries;
- provide a sound basis for the mutual recognition of language qualifications;
- assist learners, teachers, course designers, examining bodies and educational administrators to situate and co-ordinate their efforts. (Council of Europe 2001: 4-5)

In order to support the second idea, Common Reference Levels were designed. They display levels of language proficiency in ‘can do’ statements and range from A1 (basic user) to C2 (proficient user). Estonian National Curriculum for Upper-Secondary Schools (2011) also uses the CEFR levels as a way of assessing the level of foreign language proficiency of school students.

Common Reference Levels are useful for overall assessment, but for more precise descriptions of what language users at a particular level of language proficiency can do other illustrative descriptors are used. Overall Reading Comprehension descriptor offers a more detailed description related to reading proficiency. Following statements, given in the form of “can do” statements, describe reading proficiency on levels B1 and B2:

B2: Can read with a large degree of independence, adapting style and speed of reading to different texts and purposes, and using appropriate reference sources selectively. Has a broad active reading vocabulary, but may experience some difficulty with low-frequency idioms.

B1: Can read straightforward factual texts on subjects related to his/her field and interests with a satisfactory level of comprehension. (Council of Europe 2018: 60)

The results of the present research into text readability will be also presented in terms of the CEFR levels in order to provide more coherent results.
The present research is thus concentrated on the study of U.S. and U.K. online newspaper articles, and uses two readability formulas, which scores are then given with relation to the CEFR grade system. Also, academic vocabulary will be identified to determine the amount of words that can be difficult to students because of their usage mainly in the academic field. Academic vocabulary results also are given with relation to the CEFR grade system. The study is concerned with answering the following research questions in order to help teachers of English in upper secondary schools of Estonia in choosing newspaper articles for independent reading:

1. Which newspapers have more level-appropriate articles for upper secondary school students in Estonia?
2. Which topics have more level-appropriate articles for upper secondary school students in Estonia?
CHAPTER I. METHOD AND TOOLS FOR READABILITY ASSESSMENT

1.1 The Flesch-Kincaid Grade Level Formula

The Flesch-Kincaid Grade Level formula was developed in 1975 by J. Peter Kincaid and his colleagues for the U.S. Navy. The basis for this formula was derived from the Flesch Reading Ease formula, developed by Rudolf Flesch in 1948. In order to understand the basic principles used in this revised formula it is necessary to look at the Flesch Reading Ease formula first.

The Flesch Reading Ease formula was based on an earlier formula designed by Flesch, which counted three elements: “average sentence length in words, number of affixes, and number of references to people” (Flesch 1948: 221). This earlier formula, which used a scale from 0 (very easy) to 7 (very difficult), was used in a variety of different fields and due to that Flesch decided to “re-examine the formula and to analyze its shortcomings” (Flesch 1948: 221). The shortcomings consisted of doable readability scores for some texts, excessive usage of sentence length factor for finding readability scores and misunderstanding the principle behind the number of references to people. (Flesch 1948)

To address these shortcomings Flesch used the following elements:

1. Average Sentence Length in Words.
2. Average word length in syllables, expressed as the number of syllables per 100 words.
3. Average Percentage of "Personal Words."
4. Average Percentage of "Personal Sentences." (Flesch 1948: 223)

However, using four elements in one formula yielded no significant change compared to the earlier formula. Thus, two formulas were computed. The first one used the first two elements to count readability, the second one used the last two elements and predicted “human interest”. The criterion used in readability counting formula comes from McCall-Grabbs’ Standard test lessons in reading. For the grade-level estimation tested subjects required to answer 50% of comprehension questions correctly. (Flesch 1948)

The Flesch Reading Ease formula:

\[ Score = 206.835 - (1.015 \times ASL) - (84.6 \times ASW) \]

Score = position on a scale of 0 (difficult) to 100 (easy)
ASL = average sentence length (the number of words divided by the number of sentences).
ASW = average number of syllables per word (the number of syllables divided by the number of words). (Dubay 2004: 21)
According to Flesch (1948), word length indirectly measures word complexity and sentence length indirectly measures sentence complexity. Both elements also are an indirect measurement of abstraction.

Kincaid and his colleagues, however, used Navy reading materials, as the Navy was concerned with their readability. At first, 531 subject reading ability was tested using the Gates-McGinitie Reading Test meant for adults. After that 18 passages were graded using the aforementioned reading test and given to tested subjects. The criterion used in this study were passages modified by cloze procedure (every fifth words was deleted and needed to be filled in). The grade-level estimation used here was 35% of correct answers on the cloze tests. Using the results of this testing, Flesch formula was recalculated and in addition to that the scale format was changed to “save time and the possibility of error involved in an additional step” (Kincaid et al 1975: 19).

The Flesch-Kincaid Grade Level formula:

\[ GL = 0.39 \left( \frac{\text{words}}{\text{sentence}} \right) + 11.8 \left( \frac{\text{syllable}}{\text{word}} \right) - 15.59 \]

GL here stands for grade level scaling according to the U.S. educational system. It can be seen that despite the change of the coefficients used in this formula, the elements remain the same as in the Flesch formula.

1.2 The Gunning Fog Index
The Gunning Fog Index was developed by Robert Gunning in 1952 and published in his book The Technique of Clear Writing. Gunning found that “newspapers and business were full of “fog” and unnecessary complexity” (DuBay 2004: 28) and in order to solve that problem he created his own formula. The main advantage of the formula is its easiness of use. Gunning used McCall-Grabbs’ Standard test lessons in reading as a criterion, but the percentage of the correct answers was different. Tested subjects needed to answer 90% of comprehension questions correctly for the grade-level estimation. It is possible, that due to that “the grade-level scores predicted by (this formula) tend to be higher than other formulas” (DuBay 2004: 28).

This formula uses two elements to assess the text difficulty, but they slightly differ from the approach of the Flesch-Kincaid formula. These two elements are sentence length and the number of words containing more than two syllables. Sentence length in this formula measures sentence complexity, while words with more than two syllables measure vocabulary difficulty (Bailin and Grafstein 2016).
The Gunning Fog Index Formula

\[ GL = 0.4 \times (\text{average sentence length} + \text{hard words}) \]

GL here also stands for the grade level according to the U.S. educational system.

1.3 Academic World List

The Academic World List can be described as “lexical items which occur frequently and uniformly across a wide range of academic material but are not among the first 2,000 words of English as given in the GSL” (Coxhead 2000: 218).

The AWL was compiled as a result of the master’s thesis written by Averil Coxhead in 1998. A corpus used in this study consisted of “3.5 million running words of written academic text” (Coxhead 2000: 213). The AWL includes 570 word families which occur outside of the first 2000 most frequently used word families in English according to The General Service list developed by Michael West in 1953. For her study, Coxhead used three corpuses in total. The first corpus with 3,5 million words was used to develop the AWL, the second corpus of academic texts consisted of approximately 678,000 words and was used to validate the results received from the first corpus. The third corpus included fiction texts and comprised 3,763,333 words. Using the third corpus provided necessary confirmation that word families included in the AWL are of academic nature and their frequency of occurrence there is not as high as in academic texts (Coxhead 2000).

A word family in the AWL was defined “as a stem plus all closely related affixed forms” including “all inflections and the most frequent, productive, and regular prefixes and suffixes”. The affixes could only be “added to stems that can stand as free forms” (Coxhead 2000: 218).

The corpus compiled to create the AWL consisted of four main disciplines: arts, commerce, law and science, with the amount of words equally divided by them accounting to the rough number of 888,000 words. Each discipline contained a set of subdisciplines (Coxhead 2000).

Three criteria were used to deem a word viable for inclusion in the AWL:

1. Specialised occurrence: The word families included had to be outside the first 2,000 most frequently occurring words of English, as represented by West’s (1953) GSL.
2. Range: A member of a word family had to occur at least 10 times in each of the four main sections of the corpus and in 15 or more of the 28 subject areas.
3. Frequency: Members of a word family had to occur at least 100 times in the Academic Corpus.” (Coxhead 2000: 221)

It must be noted that “threshold of a frequency of 100 was applied strictly for multiple-member word families”, so single-member families included in the AWL were
not judged so strictly because they were at a disadvantage while counting frequency of their occurrence in the corpus.

The percentage of the AWL words in the first corpus was 10%. The highest percentage of the AWL words was found in commerce (12%), followed by law (9.4%), arts (9.3%) and science (9.1%). The second academic corpus showed the percentage of 8.5% of the AWL words. The third corpus, which included fiction texts, yielded a result of approximately 1.4%.

1.4 Text Inspector

“Text Inspector is the professional web tool for analysing texts” (Text Inspector 2018). It was developed by Stephen Bax and the web development company Versantus. 145 Universities use Text Inspector in their work. It is not free of charge, prices vary from 2.99 (individual) pounds a month to 29.99 (organization) pounds a month. (Text Inspector 2018: Subscriptions)

Four tools available in Text Inspector will be used in this study:

1. Flesch-Kincaid Grade
2. Gunning Fog Index
3. Academic Word List
4. Scorecard (CEFR levels) (Text Inspector 2018)

It must be noted that syllable count used in the Flesch-Kincaid Grade and the Gunning Fog Index comes from “opensource Carnegie Mellon dictionary, which includes over 133,000 words with accurate syllable counts” (Text Inspector 2018: Statistics) or in case a word is not on a dictionary Text Inspector estimates the amount of syllables (Text Inspector 2018).

CEFR scores are gained by comparing the parameters of the analyzed texts and a corpus of graded, in terms of CEFR, texts from Cambridge’s corpus. These parameters are compared for every tool with the Cambridge’s corpus and thus the CEFR levels for each tool may differ. (Text Inspector 2018)

1.5 CEFR

In order to correctly interpret the results of this study, one may need to use an illustrative descriptor designed for leisure or extensive reading. “Reading as a leisure activity involves both fiction and nonfiction, including creative texts, different forms of literature, magazine and newspaper articles, blogs, biographies, etc. – depending on
one’s interests” (Council of Europe 2018: 65). It is presupposed here that no authentic news article will be written at a level lower than B1, thus descriptors only for this and higher levels are included here.

It must be noted that each descriptor can be used independently without the context of the scale. Also, “the descriptors appear at the first level at which a user/learner is most likely to be able to perform the task described” (Council of Europe 2018: 40), which means that the higher-level user can successfully perform the tasks described in the previous levels.

<table>
<thead>
<tr>
<th>Reading as a leisure activity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>C2</td>
<td>Can understand the finer points and implications of a complex report or article even outside his/her area of specialization.</td>
</tr>
<tr>
<td>C1</td>
<td>Can read and appreciate a variety of literary texts, provided that he/she can reread certain sections and that he/she can access reference tools if he/she wishes. Can read contemporary literary texts and non-fiction written in the standard form of the language with little difficulty and with appreciation of implicit meanings and ideas.</td>
</tr>
<tr>
<td>B2</td>
<td>Can read for pleasure with a large degree of independence, adapting style and speed of reading to different texts (e.g. magazines, more straightforward novels, history books, biographies, travelogues, guides, lyrics, poems), using appropriate reference sources selectively. Can read novels that have a strong, narrative plot and that are written in straightforward, unelaborated language, provided that he/she can take his/her time and use a dictionary.</td>
</tr>
<tr>
<td>B1+</td>
<td>Can read newspaper / magazine accounts of films, books, concerts etc. written for a wider audience and understand the main points. Can understand simple poems and song lyrics written in straightforward language and style.</td>
</tr>
<tr>
<td>B1</td>
<td>Can understand the description of places, events, explicitly expressed feelings and perspectives in narratives, guides and magazine articles that are written in high frequency, everyday language. Can understand a travel diary mainly describing the events of a journey and the experiences and discoveries the person made. Can follow the plot of stories, simple novels and comics with a clear linear storyline and high frequency everyday language, given regular use of a dictionary.</td>
</tr>
</tbody>
</table>

(Council of Europe 2018: 65)

+ level here “represent a very strong competence at a level that does not yet reach the minimum standard for the following criterion level, although “features of the level above are starting to appear” (Council of Europe 2018: 36).
1.6 Extensive Reading

Extensive reading (hereinafter ER) is known under different names, such as Sustained Silent reading, Drop Everything and Read or Silent Uninterrupted Reading for Fun and many other names.

There are also many definitions of what ER is. Snowball’s (2012) definition provided in the Introduction is one of the examples. *The Top Ten Principles for Teaching ER* by Day and Bamford (2002) could be another example as they “have come to be the default way to define what ER is, and what ER is not” (Warring and McLean 2015: 161), although they are only characteristic descriptors of a successful ER program.

*The Top Ten Principles for Teaching ER:*

1. The reading material is easy.
2. A variety of reading material on a wide range of topics must be available.
3. Learners choose what they want to read.
4. Learners read as much as possible.
5. The purpose of reading is usually related to pleasure, information and general understanding.
6. Reading is its own reward.
7. Reading speed is usually faster rather than slower.
8. Reading is individual and silent.
9. Teachers orient and guide their students.
10. The teacher is a role model of a reader. (Day and Bamford 2002: 137-141)

Despite different definitions and names, it is important to see what core elements they have in common:

- Fluent comprehension
- High reading speed
- Reading large amount of text
- Focus on meaning of text (Warring and McLean 2015: 162)

Out of the four core elements the last two of them are self-explanatory, however the other two need further clarifications. High reading speed is usually associated with reading 150-200 words per minute. Fluent comprehension is usually associated with 98% of familiar words in a text. However, it is not possible to determine which percentage of familiar words for a student is included in a text using readability formulas. Renandya (2007: 145) proposed that for successful extensive reading students “should be reading text at an i+1, i, or i-1 level, with i being their current proficiency level, and 1 referring to language features that are slightly above students’ competence.”

Therefore, in terms of the CEFR categorization for a student at, for example, B2 level of language proficiency texts from B1+ to B2+ levels would be suitable for ER (The Extensive Reading Foundation 2011, Yamashita 2015)

One of the most common text sources for ER are Graded Readers. These books, being adapted or original stories, have simplified language. “They are ‘graded’ in the
sense that the syntax and lexis are controlled in order to make the content accessible to learners of the language.” (The Extensive Reading Foundation 2018: para 1). The difficulty of Graded Readers can usually be defined by the amount of used headwords (words with same base meaning) (The Extensive Reading Foundation 2018).

There is, however, contradictory evidence suggesting that authentic language materials are a better choice than adapted materials. Khoshbakht and Gorjian (2017: 40) investigated “the effect of authentic-based and non-authentic-based materials on improving reading comprehension of the Iranian intermediate EFL learners.” 50 students were divided in two groups – one using authentic materials and the other adapted materials. The study results showed that the group using authentic materials improved their reading comprehension, while the second group showed no improvement.

Also, a study by Kosk (2017: 71) showed that “incorporating extensive reading into the English studies of advanced students in an Estonian upper secondary school is feasible even without a large number of graded readers – authentic materials are the norm for most advanced students.”
CHAPTER II. READABILITY OF NEWSPAPER ARTICLES

2.1 Aims and research questions
The present research aims to answer the following research questions in order to provide an additional way for teachers to help students to find level-appropriate newspaper articles for extensive reading in upper secondary schools of Estonia:

1. Which newspapers have more level-appropriate articles for upper secondary school students in Estonia?
2. Which topics have more level-appropriate articles for upper secondary school students in Estonia?

2.2 Methodology and sample
For this study, eight popular online newspapers were selected: four from the U.S. and four from the U.K. Each newspaper is free of charge. Each newspaper differs in the level of public trust and is among the most popular online newspapers in the relevant country. The newspapers were taken from the U.S. and the U.K. as these are both English-speaking countries, and Standard British English and Standard American English are often taught at schools in English as a foreign language lessons. As for the division by the level of trust, it was presupposed that newspapers differ in their style of writing, with more trusted newspapers usually being more factual and conservative in their language use, while the less trusted having more unverified or sensational information and informal language, thus making them harder or easier to read due to differences in syntax and vocabulary. The reason for choosing the most popular online newspapers is based on a presupposition that these newspapers write for a wider audience and their articles are more diverse, even within the same topic, and therefore offer a bigger choice of articles suitable for extensive reading.

For selecting the U.K. newspapers, a BBC report Public trust in BBC News and perceptions of impartiality (Ipsos Mori 2017) was used to measure the level of trust. The respondents answered a survey question “To what extent do you trust [insert source] as a news source?” on a 10 level scale with 1 meaning “do not trust at all” and 10 meaning “trust a great deal” (Ipsos Mori 2017: 10). For selecting the U.S. newspapers, the results of a research project by Reynolds Journalism Institute Trusting News Project Report 2017 (Kearney 2017) was used to measure the level of trust, plus the data from website Media Bias/Fact Check (MBFC News 2018) was used for two
U.S. newspapers, which were not present in the aforementioned report. The respondents of the *Trusting News Project* “were asked to name three sources of news they typically trust and three sources of news they typically do not trust” (Kearney 2017). The results were processed and presented in form of a scale ranging from 0.00 (least trusted) to 1.00 (most trusted). As two online newspapers (the *New York Post* and *Newsweek*) were not part of the *Trusting News Project*, data from *Media Bias/Fact Check* were taken on all four U.S. newspapers and compared between them in terms of factual reporting. Online newspapers with lower rating of factual reporting were considered as less trusted than those with higher rating.

The measurements of the popularity of both the U.K. and the U.S. online newspapers were taken from Feedspot website (2018), which uses social metrics (the number of Facebook fans and Twitter followers) to measure popularity.

According to such criteria, eight newspapers were selected for this research:

**The U.K. online newspapers:**
1. The Guardian
2. The Independent
3. The Daily Mail
4. The Sun

**The U.S. online newspapers:**
1. The Los Angeles Times
   Level of trust – 0.90 out of 1. Popularity – 10th in top 100.
2. The New York Times
   Level of trust – 0.76 out of 1. Popularity – 2nd in top 100.
3. The New York Post
4. Newsweek
It must be noted, that the process of U.S. online newspapers selection encountered a few difficulties due to either the necessity of paid subscription or inability to access a website due to the geographical location (European Union). That is also the reason why *Newsweek*, which is classified as a magazine, but falls into the description provided in the Introduction of the thesis was selected.

Five articles on certain topics were selected from each newspaper. These topics were common for all the newspapers used in this thesis. The topics selected were as follows: (1) politics, (2) sports, (3) entertainment, (4) technology, (5) travel. Two principles were used selecting the articles – size and date. The size principle means that all the articles are approximately the same size in order to ensure that there are no disparity in results due to texts of different size. The date principle means that all the articles were written approximately at the same time and therefore contain contemporary English language. Each article was analyzed using three tools provided by Text Inspector: the Flesch-Kincaid Grade Level formula, the Gunning Fog Index formula and the AWL to reveal their readability. The results of these findings were also provided with CEFR grading system to be more comprehensible.

The corpus of the selected newspaper articles consists of 36,632 words. The articles range from 712 to 1211 words, with an average of 900 words per article. All of the articles, except one, were published in December 2018, ranging from December 17 to December 29. The only article, which dates to 17th of July, 2017 belongs to the topic of travel, and was published in *Newsweek*. The reason for that is that they do not regularly write about travel and there were no newer articles with suitable size to analyze.

The tables presented below show measurements of four parameters of the articles:

1. Flesh-Kincaid grade level (hereinafter FK)
2. Gunning Fog grade level (hereinafter GF)
3. Number of AWL words in text (hereinafter AWL types)
4. Number of unique AWL words in text (hereinafter AWL tokens)

2.3 Results

2.3.1 Analysis of the articles by the newspapers

The articles in this section are listed according to the following order: (1) politics, (2) sports, (3) entertainment, (4) technology, (5) travel.

The Guardian
The articles chosen for the analysis include:

1. Sajid Javid: Channel migrant crossings 'a major incident' (Mohdin 2018).

<table>
<thead>
<tr>
<th></th>
<th>Politics</th>
<th>Sports</th>
<th>Entertainment</th>
<th>Technology</th>
<th>Travel</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>FK</td>
<td>11.85</td>
<td>9.83</td>
<td>9.30</td>
<td>10.19</td>
<td>8.73</td>
<td>9.77</td>
</tr>
<tr>
<td>C2</td>
<td>11.85</td>
<td>9.83</td>
<td>9.30</td>
<td>10.19</td>
<td>8.73</td>
<td>9.77</td>
</tr>
<tr>
<td>GF</td>
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Table 1. The results of the readability analysis of the Guardian articles

The articles from The Guardian range from B2+ to C2 levels of proficiency and may be rather difficult for upper secondary school students. Only one article on the topic of travel matches level B2+. The travel article probably can be recommended to the majority of upper-secondary school students, whose level of proficiency is at least B2. Overall, the analyzed articles from The Guardian can be characterized as rather difficult to read for upper secondary school students.

The Independent

The articles chosen for the analysis:

1. Theresa May should be grateful for Brexit – it's obscured her weak domestic agenda and the ongoing effects of austerity (Grice 2018).
2. Tottenham vs Wolves: Spurs title challenge killed before it started by stunning second-half comeback (Delaney 2018).
3. Holmes & Watson review: Will Ferrell and John C Reilly can't salvage a film that was put together in such an elementary way (Macnab 2018).
4. Festive shopping could lose Brits hundreds of pounds – and the threat is not over after Christmas day (Griffin 2018).
5. From Lanzarote to Dubai, these are the 10 best places for winter sun (Curry 2018).

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Table 2. The results of the readability analysis of the Independent articles

The Independent articles may also present difficulties for upper secondary school students. The most readable article here is the travel article. The article, despite being written at C1+ level in terms of semantic and syntactic difficulty, is relatively easy in terms of academic vocabulary. It may prove difficult to students who are struggling with reading long sentences, but for others it could be an appropriate challenge. Overall, The Independent articles can be characterized as difficult to read for the upper secondary school students.

**The Daily Mail**

The articles chosen for the analysis:

1. Trump slams CNN and the 'Fake News Universe' for criticizing his signing of MAGA hats on surprise tour of Iraq and DENIES he supplied them to the 'brave young' troops (Martosko 2018).
2. 'If they're good enough they're old enough': Ole Gunnar Solskjaer quotes Sir Matt Busby as he vows to give academy talent a chance as youngsters train with Alexis Sanchez on his return from injury (Porter 2018).
3. The Crown series 3: Helena Bonham Carter and Ben Daniels transform into Princess Margaret and Lord Snowdon as they join Olivia Colman in newly-released images from Netflix show (Simons 2018).
4. NASA's New Horizons spacecraft will ring in the New Year with historic flyby of the most distant target ever explored (Associated Press 2018).
5. The most incredible hotels that NEVER were: From a 'Death Star' on the Caspian Sea to a Hilton on the MOON... architects' dreams that live only in fantasy (Newton 2018).

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Table 3. The results of the readability analysis of the Daily Mail articles

The articles from The Daily Mail seem to be not easy to read for upper secondary school students as well. However, two articles on the topics of sports and technology may prove suitable for extensive reading. The sports article is the easiest of all and probably can be given to the students with the B2 level proficiency. The technology article is a bit more difficult, despite having similar academic vocabulary values. Overall, The Daily Mail articles are not very suitable for extensive reading for the upper secondary school students.

The Sun

The articles chosen for the analysis:

1. QUENTIN LETTS How UK will prosper out of EU as Brexit countdown is to a boom day not to Remainer MPs’ doomsday (Letts 2018).
2. THAT'S SON ACHIEVEMENT Son Heung-Min’s revival at Spurs is proof Mauricio Pochettino’s talent matches his ego (Kidd 2018).
3. 'JUST BEEN SICK' Katie Price fans are throwing up after watching her ‘horrific’ facelift video (Soteriou 2018).
4. ONE STEP CLOSER TO LIFE Woolly mammoths could walk the Earth AGAIN in 20 years as experts dream of a ‘Pleistocene Park’ in Siberia, scientists claim (Parker 2018).
5. SEAWORLD’S JAWSOME Discover sharks, soakings and a spin-dry on a rollercoaster at Orlando’s SeaWorld that’s fun for the whole family (Heath-Smith 2018).

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Table 4. The results of the readability analysis of the Sun articles

*The Sun* articles are the easiest among the U.K. newspapers in terms of their readability scores. Still, not all of them are suitable for upper secondary school students. The articles on entertainment and travel topics can be recommended for the students with B2 proficiency, even though the entertainment article contains academic vocabulary at the C1 level of proficiency. Overall, the articles from *The Sun* can be described as relatively difficult to read for the students.

The *New York Times*

The articles chosen for the analysis:

5. Life on the Road With Susan Orlean (Rosman 2018).

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**The New York Times** articles can be viewed as relatively difficult to read for the upper secondary school students. Two out of five articles are not particularly suitable for extensive reading as they are written at the level of C2. The travel and the entertainment articles are suitable for the students with B2 proficiency, despite having extensive academic vocabulary. The sports article is also suitable for the students with B2, because of the academic vocabulary being at the B2 level of proficiency and relative difficulty in terms of FK and FG formulas (between B2 and C1). Overall, *The New York Times* articles are, to some extent, suitable for extensive reading.

**The Los Angeles Times**

The articles chosen for the analysis:

1. Nearly one week in, here's where things stand on the partial government shutdown (Wire 2018).
2. Kings' Bogdan Bogdanovic makes three-pointer at buzzer as Lakers lose without LeBron James (Ganguli 2018).
3. 'Into the Spider-Verse' brings in diversity, innovation and some special Easter eggs (Ordona 2018).
4. More than 1.3 million high school students started vaping nicotine in the last year, study says (Kaplan 2018).
5. Welcome to Joshua Tree. Sorry about the shutdown. Now, about the toilets … (Reynolds 2018).
The Los Angeles Times articles can be difficult to read for upper secondary school students. The only article, which stands out is the sports article. It can be used for extensive reading by the majority of students. The rest, due to high level of proficiency needed (C2) are not particularly suitable for all students. Overall, The Los Angeles Times articles are very difficult to read and should not be used for extensive reading with upper secondary school students.

Newsweek

The articles chosen for the analysis:
1. America's Partisanship is an Inevitable Evolution of its Democracy (Roff 2018).
5. Want to Travel the World? Read This Before You Go (Elliot 2017).

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Table 6. The results of the readability analysis of the Los Angeles Times articles

Table 7. The results of the readability analysis of Newsweek articles

The articles from Newsweek may present difficulties for upper secondary school students. The entertainment article is the only article that can be read by the majority of upper-secondary school students, though academic vocabulary there may complicate the understanding of the text. Overall, Newsweek articles are not suitable for upper secondary school students.
The New York Post

The articles chosen for the analysis:

1. Trump may have gone too far by abandoning the Kurds (Buckley 2018).
2. Enes Kanter blasts ‘childish’ Greek Freak, ‘nobody’ Bucks coach (Berman 2018).
3. ‘Twilight Zone’ actors recall starring in classic ’60s sci-fi series (Starr 2018).

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Table 8. The results of the readability analysis of the New York Post articles

The New York Post articles are the easiest among the U.S. newspapers in terms of their readability. Two articles can be recommended for extensive reading. The sports article can be read by the majority of upper-secondary students with the B1+ level of proficiency. The entertainment article is for those whose level of proficiency is B2. Overall, the New York Post articles, to some extent, can be viewed as suitable for upper secondary school students.

2.3.2 Analysis of the articles by the topics

Politics news articles

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26
The articles on politics are among the hardest articles. In this category, there are no articles below the C1 level of proficiency and only two out of eight are at the C1 level. All of them are heavy with academic vocabulary, C1+ level is a minimum. Both readability formulas and academic vocabulary indicate that these types of articles are not particularly suitable for upper secondary school students.

Sports news articles

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<tr>
<td>AWL</td>
<td>2.88</td>
<td>1.97</td>
<td>2.86</td>
<td>1.64</td>
<td>3.55</td>
<td>4.88</td>
<td>4.32</td>
<td>2.33</td>
<td>3.03</td>
</tr>
<tr>
<td>(tokens)</td>
<td>C1+</td>
<td>B2+</td>
<td>C1</td>
<td>B2</td>
<td>C2</td>
<td>C2</td>
<td>C1</td>
<td>C1</td>
<td></td>
</tr>
</tbody>
</table>

Table 10. The results of the readability analysis of the sports news articles

The articles on sports are the easiest among all other categories. Only four articles here are written at the C1 or C2 levels of proficiency, the rest of them range from B1+ to B2+. They do not contain much academic vocabulary, especially if to compare rough numbers – sports AWL (types) 5.85 with politics AWL (types) 10.49, which is almost two times higher. Approximately the same numbers are for AWL (tokens) – 3.03 vs 5.31. Overall, sports articles are fairly easy to read and they will be a good choice for extensive reading for upper secondary school students.

Entertainment news articles

<table>
<thead>
<tr>
<th></th>
<th>The Daily Mail</th>
<th>The LA Times</th>
<th>NY Post</th>
<th>The NY Times</th>
<th>Newsweek</th>
<th>The Guardian</th>
<th>The Independent</th>
<th>The Sun</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>FK</td>
<td>12.75</td>
<td>11.21</td>
<td>8.77</td>
<td>7.29</td>
<td>6.90</td>
<td>9.30</td>
<td>9.14</td>
<td>7.79</td>
<td>8.90</td>
</tr>
<tr>
<td></td>
<td>C2+</td>
<td>C2</td>
<td>B2+</td>
<td>B1+</td>
<td>B1+</td>
<td>C1+</td>
<td>C1</td>
<td>B2</td>
<td>C1</td>
</tr>
</tbody>
</table>
Table 11. The results of the readability analysis of the entertainment news articles

The articles on entertainment are almost as suitable for extensive reading at upper-secondary school as sports articles. Four articles from this topic may be deemed suitable for upper secondary school students’ extensive reading. Despite the fact that they contain a fair amount of academic vocabulary suitable for higher levels of proficiency (C1 and C1+), readability scores indicate that they can be read with little difficulty. Two of them, with B1+ readability levels, are suitable for the majority of students, other two (B2 and B2+) are suitable for students with B2 proficiency. Overall, articles on sports can be used for extensive reading, albeit with some caution.

Technology news articles

<table>
<thead>
<tr>
<th></th>
<th>The Daily Mail</th>
<th>The LA Times</th>
<th>NY Post</th>
<th>The NY Times</th>
<th>Newsweek</th>
<th>The Guardian</th>
<th>The Independent</th>
<th>The Sun</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWL</td>
<td>2.57 C1</td>
<td>6.71 C2+</td>
<td>5.67 C2</td>
<td>7.08 C2+</td>
<td>8.07 C2+</td>
<td>5.81 C2</td>
<td>5.09 C2</td>
<td>5.32 C2</td>
<td>5.90 C2</td>
</tr>
</tbody>
</table>

Table 12. The results of the readability analysis of the articles about technology

The articles on technology are a little bit easier than the articles on politics. There is only one article, by The Daily Mail, which may be suitable for less proficient students. The rest of the articles range from C1 to C2+ level and thus are unsuitable for upper secondary school students, both in terms of readability formula scores and academic vocabulary.

Travel news articles

<table>
<thead>
<tr>
<th></th>
<th>The LA</th>
<th>NY Post</th>
<th>The NY</th>
<th>Newsweek</th>
<th>The Guardian</th>
<th>The Independent</th>
<th>The Sun</th>
<th>Total</th>
</tr>
</thead>
</table>
Table 13. The results of the readability analysis of the articles about travel

The articles on travel are in the middle ground. Three of them, with readability scores B1+ to B2+, are appropriate for most upper-secondary school students. The article by The Independent is at the C1+ level of proficiency according to readability formulas, however it does not contain a lot of words from the academic vocabulary list, and thus may be used by proficient students with B2 level. The rest of the articles are barely suitable for upper secondary school students due to high scores in both readability formula and academic vocabulary.

2.4 Discussion of results

13 articles out of 40 articles were found to be suitable for extensive reading for upper secondary students of Estonia who are expected to reach a B2 level of proficiency by the end of upper-secondary school, which may indicate that reading authentic newspapers is more suitable for more proficient students (at least B1+ and in most cases B2+) and may not be an enjoyable activity for less proficient students. However, each newspaper contained at least one out of five articles suitable for extensive reading. To answer the first research question, the most suitable newspapers are:

1. The New York Times – 3 articles with suitable readability scores (B2), but slightly sophisticated academic vocabulary (C1).
2. The New York Post – 2 articles with suitable readability scores (B2) and appropriate academic vocabulary (B2+).
3. The Sun – 2 articles with suitable readability scores (B2) and appropriate academic vocabulary (B2+).
4. The Daily Mail – 2 articles with suitable readability scores (B2+), but slightly sophisticated academic vocabulary (C1).
Three of these newspapers, except for *The New York Times*, can be viewed as less trustworthy in comparison with other newspapers and thus less trusted newspapers may be a better source for extensive reading of upper secondary school students of Estonia, although there might be an issue with the content matter of such newspapers.

Regarding topics, there was only one topic, which did not include any suitable articles at the levels of B2(+) – politics. Every other topic included at least one suitable article for extensive reading at the level of B2. To answer the second research question, the most suitable topics are:

1. **Sports** – 4 articles with suitable readability scores (B2), but slightly sophisticated academic vocabulary (C1).
2. **Entertainment** – 4 articles with suitable readability scores (B2), but slightly sophisticated academic vocabulary (C1).
3. **Travel** – 4 articles 2 articles with suitable readability scores (B2+) and appropriate academic vocabulary (B2+).

The topics of politics and technology proved to be harder to read both in terms of readability and academic vocabulary scores and therefore should be used as a material for extensive reading only with very proficient students.

It must be noted, however, that results provided by this thesis should not be considered as the only decisive factor to deem an article or a newspaper as suitable for extensive reading. Teacher’s judgement and student’s proficiency are no less important and should not be ignored. Overall, choosing a suitable article for extensive reading may be difficult if a student’s proficiency is low and other available materials should be taken into account.
CONCLUSION

The current thesis is concerned with assessing the suitability of newspaper articles to use for extensive reading with upper secondary school students of Estonia. Three tools were used in this study: the Flesch-Kincaid and the Gunning Fog readability formulas, as well as the Academic Vocabulary List. It is presupposed that newspapers as sources of authentic language are a good material for extensive reading. Both the U.K. and U.S. newspapers’ articles were examined using the three aforementioned tools. The results were also provided in the CEFR level of proficiency system.

The results indicate that newspapers may not be the best sources for extensive reading for students whose level of proficiency is below B2, as only 13 out of 40 articles were deemed suitable for students with a B1+ – B2+ level of proficiency. The findings also suggest that the less trusted (for example, tabloids) newspapers are a better source of extensive reading material that the more trusted (for example, broadsheet) newspapers in terms of their readability scores. As for the topics, three out of five article topics may be viewed as suitable – sports, travel and entertainment. Politics and technology topics seem to be overwhelmed with academic vocabulary and use very complex and long sentences.

In accordance with the aim of the thesis, it was shown that the tools used in the empirical research can be used as indicators of text difficulty, however they should not be used without other factors in mind, such as teacher’s judgement or student’s language proficiency when deciding whether the analyzed text is suitable for extensive reading or not.

As for the limitations of the study, only a small sample of articles and newspapers were analyzed, and to judge the readability of a topic or a newspaper based on such a small sample would not be wise. Also, the readability formulas and the AWL are not the only tools which can be used to measure how suitable an article is for extensive reading, therefore only partially indicating how difficult a text may be to read.

Future research in this area may be concentrated on using teacher’s judgement and testing students’ comprehension of texts in order to see how readability and the AWL scores actually correlate to students’ proficiency. Also, other materials can be researched to determine whether they are more or less suitable than newspaper articles.
SUMMARY IN ESTONIAN

Bakalaureusetöö teema on “AKADEEMILISE SÕNAVARA JA LOETAVUSE VALEMITE KASUTAMINE SOBIVA KEELETASEMEGA AJALEHE ARTIKLITE VALIMISESEKSE LUGEMISEKS GÜMNAASIIUMIS“. Bakalaureusetöö eesmärk on analüüsida Ühendkuningriikide ja Ameerika Ühendriikide populaarsemate ajalehtede artikleid, et uurida kuivõrd sobilikud on need ekstensiivseks lugemiseks gümnaasiumis. Töö autor püüab vastata kahele uurimisküsimusele:

1. Millised ajalehed on kõige sobivamad ekstensiivseks lugemiseks gümnaasiumis?
2. Millised teemad on kõige sobivamad ekstensiivseks lugemiseks gümnaasiumis?

Uurimistöö on jaotatud neljaks osaks. Sissejuhatuses on esitatud üldised kontseptsioonid, mis käsitlevad tekstide loetavust, akadeemilist sõnavara, CEFRi, digiajalehte ja ekstensiivset lugemist.

Esimeses peatükis on kirjeldatud käesolevas bakalaureusetöös kasutatud uurimisvahendeid: kaks loetavuse valemit (The Flesch-Kincaid Grade Level ja The Gunning Fog Index), mõõdetav akadeemiline sõnavara (The Academic Word List), CEFRi ekstensiivse lugemise skaala ja programm Text Inspector, mille kaudu kõiki eelnimetatud uurimisvahendeid on kasutatud. Selles peatükis on lähemalt kirjeldatud ka ekstensiivse lugemise teooriat.


Bakalaureusetöö kokkuvõtteks võib järeldata, et ajaleheartiklid ei ole kõige sobivamad ekstensiivseks lugemiseks. Samuti saab järeldata, et vähem usaldavatad ajalehed on kergemini loetavad. Peab tähele panema, et on ebamõistlik kasutada selle töö tulemust, jättades arvestamata õpetaja hinnangut või õppija keeleoskust, ning tulevikud uurimused võiks olla seotud nende omavaheliste seoste uurimisega.
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USING ACADEMIC VOCABULARY AND READABILITY FORMULAS TO CHOOSE LANGUAGE LEVEL-APPROPRIATE NEWSPAPER ARTICLES FOR EXTENSIVE READING AT UPPER-SECONDARY SCHOOL

supervised by Olga Orekhova

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