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BLOOM'S TAXONOMY IN CONTENT TEACHING AT BASIC SCHOOL: BLOOM'S TAXONOMY TASK DESIGN IN THE 5TH GRADE HISTORY TEXTBOOK IN NARVA VANALINNA SCHOOL

Bachelor's thesis

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PREFACE

25 per cent of Estonia's population considered themselves as Russians in 2017 (Statistics Estonia) and there were 41 schools out of 351 in 2019 (Statistics Estonia) using different language or different language together with Estonian language as the language of instruction. These multilingual schools must provide study materials that support pupils in acquiring Estonian language and content at the same time. This makes it important to assess the quality of materials that teachers are provided to work with.

Bloom's taxonomy provides a strong basis to develop and assess teaching materials through implementation of lower-order thinking skills (LOTS) and higher-order thinking skills (HOTS). Differentiating the task design in this way enables learners to acquire content and language in progressive stages. Student-centred learning is promoted by implementation of Bloom's Taxonomy but there are no studies conducted in Estonian education to assess whether textbooks support content teaching in accordance with second/foreign language cognitive skills.

This study analyses background sources on the topic of using Bloom's Taxonomy in task design in content teaching to make textbooks for content learning in a second/foreign language cognitively developing and demanding. Then this study reveals how higher-order thinking skills and lower-order thinking skills tasks are represented in 5th grade history book in Estonian language immersion school in Narva, and depending on its analysis, develops and offers additional higher-order thinking skills tasks to support teaching Estonian language with the help of the textbook used in Narva Vanalinna Riigikool.

The present bachelor's thesis consists of the Introduction, two chapters, and the Conclusion. The Introduction introduces the Estonian immersion programme in Estonia, the role of a textbook in language immersion classes, and Bloom's taxonomy as one of its basic components in task design to support content teaching in a second/foreign language. Chapter II analyses 'Eesti ajaloo õpik 5. klassile. Pääsukese lend läbi ajaloo', which is the textbook used in Narva Vanalinna Riigikool to teach history in 5th grade, to gain accurate knowledge of how it fits in Bloom's Taxonomy spectrum, and offers additional higher-order thinking tasks if deemed necessary. The Conclusion reflects on the results of the main points discussed throughout the paper and gives a summary of the analysis in the view of the proposed hypothesis.

1 INTRODUCTION

1.1 The Estonian Language Immersion Programme

After regaining its independence, the Estonian government had to address a situation where a large portion of its population was not ready to integrate into new demands of having only one official language. There was a large minority of the Russian community and the former Russian educational programme, which mainly focused on the Russian language. The Russian population needed to receive access to appropriate education to fit their social needs and government's language policy demands. The language immersion system was applicable to prepare Russian minority to integrate under the government's language reforms.

Language immersion is a process of learners commanding one language as their first language, but all learning takes place in another language. Language immersion takes place when all learners are studying in a different language; in a situation where, for example, a Russian-speaking student goes to Estonian school and receives education among Estonians – this is not a language immersion pedagogy because not all students are receiving education through a second language. (Rannut, Kuidas keeles kümmeldakse, 2004)

Estonian officials had previous experience with the language immersion methodology as the first language immersion classes were introduced already in the late 1980s, based on programmes developed in the United States, due to the demand by Russian families to give Estonian education for their children (Rannut, Kuidas keeles kümmeldakse, 2004). The very first government supported programmes of language immersion were introduced in 2000 in four schools (Innove), an early language immersion programme was supported by the Canadian embassy and Canada's experience with French language immersion (Rannut, Kuidas keeles kümmeldakse, 2004).

The language immersion programme's vision in Estonia is that upon completion students can integrate successfully into Estonian society while keeping their identity. The language immersion programme attempts to enrich learners with additional language and will not replace their mother tongue (Kebbinau & Aja, 2011). All Canadian language immersion programmes aim for advanced level of functional proficiency in written and oral forms of the second language, normal levels of first language competence, grade-appropriate levels of achievement in academic school subjects, and to promote awareness, understanding, and tolerance of the culture of the second language

group (Genesee & Lindholm-Leary, 2008). These aims are also present in Estonian language immersion programmes.

The most prevalent language immersion programme in Estonia is an early immersion which begins in pre-school and is the fastest growing, most effective foreign language learning experience in Estonia. It is especially prevalent in Ida-Viru County where due to lack of Estonian school options most Russian language of instruction schools have opened language immersion classes. Russian children are more open to learning Estonian in these schools because they feel surrounded by Russian environment and learning Estonian is not connected with being amongst Estonian children and communicating with them (Rannut, 2005).

Russian parents value Estonian language learning as they see that bilingual children have more opportunities in the job market. While Russians in Ida-Viru County do not use Estonian language in their everyday life, they are instrumentally motivated to learn Estonian language as their job depends on it, and this has carried over to their children attending language immersion programmes (Rannut, 2005).

In some schools, language immersion takes place by itself because parents put their children to Estonian schools but since the community is so predominantly Russian, there are few or no Estonian children attending those schools. Therefore, while the school cannot officially declare using a language immersion system, it is still happening. Examples of this situation are found in Kohtla-Järve Järve Kool. This school has been in a position where it has Estonian students but each year more Russians are choosing to receive education in that school.

1.2 The Role of Textbook in the Language Immersion Programme

In order to avoid creating a failure in the language immersion process, the teacher needs to find a suitable textbook to use and accommodate the learning process. Harmer (1983) has stated that a good textbook contains lively and interesting material and provides logical progression of language items to demonstrate what has to be learned, including summaries of already learned language components in order to provide the students grammatical review option. Similar structure is present in special language immersion textbooks for grades 1, 2, and 3 but older students are using standard textbooks meant for Estonian children.

The language immersion that happens in middle school puts extra workload on teachers to find or devise sufficient support materials to accompany textbooks. From the interviews with language immersion students, carried out by Schmidt-Liu (2018), they stated a problem with the lack of special study materials and found Estonian textbooks to be too difficult to understand, and a lack of Estonian language proficiency by some teachers. This use of standard textbooks designed for Estonian children, and a lack of language proficiency from teachers, makes it necessary that textbooks are designed for all learners with different levels.

Estonian Ministry of Education provides the language immersion teachers with courses about the methodology, and extra materials to use in their subjects to support textbooks. Provided are various free and not free databases, for example eKoolikott, Miksike, with worksheets to include in the learning process. These language immersion course programs still provide insufficient preparation. Language immersion teachers have pointed out that these courses are completely different from real life and do not provide practical usefulness, help is found through consulting other teachers in a similar position (Saarik, 2016). Teaching in the language immersion groups demand a bigger stress tolerance, preparation and extra work in differentiating the study process. The quality of courses and accessibility of extra materials was seen as a problem by the teachers, although there are many study materials, the teachers need to spend a lot of time searching for them and making these suitable for their pupil groups (Saarik, 2016).

Since the language immersion programme includes active participation from all involved in the process, teachers must make sure that the additional materials and textbooks would not only meet the needs of language and content learning but also promote the development of various important skills in accordance to the student level. Wagner (2008) has defined the skills for building successful careers: critical thinking and problem solving, collaboration and leadership; agility and adaptability, initiative and entrepreneurialism, effective oral and written communication, accessing and analysing information, curiosity and imagination. Teaching these skills demand from teachers to activate students' different levels of thinking which are helped through implementation of the Bloom's Taxonomy.

1.3 Bloom's Taxonomy in Textbook Task Design

Bloom's Taxonomy is a framework for categorizing educational goals, with six major categories being Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. All

categories after Knowledge are considered as ‘skills and abilities’ because knowledge is deemed as a precursor for using these skills and abilities (Armstrong, n.a). The Estonian language immersion teachers can use the Bloom’s Taxonomy as an educational objective to select a criterion of a good task in the textbooks. The Bloom’s Taxonomy also helps the teachers choose and create the learning materials necessary to complement textbooks by knowingly focusing on the higher- or lower-level thinking skills.

Learning a second language is a complex process affected by multitude of factors, such as age, learning preferences, adaptability, motivation, personality, and thinking skills. Thinking skills, also known as cognitive skills, are what a person does with the knowledge, things like analysing, evaluating, and categorizing describe cognitive events happening at a particular functional level (Ellerton, 2015). Thinking skills are one of the most important skills for learning any language as those are used to solve problems, ask questions, and organise information. These can be more demanding, like creating or evaluating, or less demanding, like remembering facts. Therefore, teaching professionals have to choose between many methods, tools, resources and techniques available to them in order to enhance a second language learning experience. Bloom’s Taxonomy of Learning has been considered as a valid benchmark to measure a student’s level of comprehension in any subject, including language.

The cognitive skills that students practice during lessons are largely dependent on the learning activities provided by the textbooks. Therefore, the authors of textbooks have a direct impact on the learners and the cognitive skills practiced during learning. When mostly the lower-level thinking skills are incorporated into the textbook activities, it follows that mostly the lower-level thinking will occur. Therefore, the teachers must be able to recognize and distinguish the lower- and higher-level thinking skills in order to enhance the learning experience. Higher-order thinking is particularly important for students in developing their critical thinking. If the task only applies lower-order thinking, the learners’ critical thinking will remain underdeveloped.

Higher-level of thinking is also achieved through the questions modelled around Bloom’s Taxonomy levels. Learning is enhanced in all content areas when teachers give students a chance to give deep explanations after they have been asked higher-order thinking questions (Corley & Rauscher, 2013). Through the questions related to the text, students can develop strategies to find a meaning from the text. Well-constructed questions, both in their openness and in relation to the

student's thinking level, enable students to reach a higher-level of thinking. Proper questions in textbooks and from teachers are important in history subjects as it focuses on the interpretation of the written words, and understanding this content requires the development of language skills.

1.4 Research of Bloom's Taxonomy Usage in Textbooks

Accordingly, the cognitive levels of textbook questions should be one of the main criteria to be used to evaluate textbooks. The questions should guide students to think critically through focusing on the most important aspects of the content.

Most studies of Bloom's Taxonomy levels have been conducted on English textbooks to see how thinking levels are present in the second language learning subjects. Riazi and Mosalaejad (2010) investigated the levels of Bloom's Taxonomy in Iranian high-school and pre-university textbooks. They evaluated three senior high school textbooks and one pre-university textbook using Bloom's Taxonomy. The results showed that lower-order thinking tasks were more prevalent. The least common thinking tasks were in the category of evaluation in all four English textbooks. Analysis and synthesis were somewhere between extremes in every book. Razmjoo and Kazempourfard (2012) analysed four English course books of the Interchange series. The exercises and activities from the three units of each course book were evaluated using the six levels of Bloom's Revised Taxonomy. The researchers utilized a coding scheme to codify, classify and analyse all exercises and activities within the course books. The results demonstrated that lower-order thinking was predominant in the Interchange course books, of which the most frequent was the lowest level in Bloom's Revised Taxonomy, *remembering*. The highest levels, metacognitive knowledge and *evaluating* cognitive knowledge, were not represented at all. Ighbaria (2013) analysed the six units of the 9th grade English textbook Horizons. He was assessing the importance of textbooks in developing students' thinking. The WH-questions were chosen as the unit for analysis believing that questions are important for examining students' understanding of the taught material, and that through questions, students' thinking skills can be developed. The results confirmed the results of other similar studies with low prevalence of comprehension and evaluation. The standout finding was that the analysis level appeared at a percentage of 23.36%, which is nearly equivalent to the knowledge level. Anggraeni (2013) investigated the English textbooks for senior high school students. That study found that the lower-level thinking was dominant, while the higher-level thinking questions were less frequent. Studies are showing the lack of higher-level thinking tasks

in second language learning textbooks and this makes it necessary to broaden research into other subjects to see whether this is characteristic to the English as a second language learning process or to the textbooks in general.

Therefore, this paper poses a hypothesis:

The 5th grade history textbook ‘Eesti ajaloo õpik 5. klassile. Pääsukese lend läbi ajaloo’ used in Narva Vanalinna Riigikool consists of mainly lower-order thinking tasks on Bloom’s Taxonomy’s spectrum; therefore, teachers using this textbook should provide higher-order thinking tasks to support cognitive development of learners.

In order to verify this hypothesis, research of the textbook was conducted and its questions were categorised according to Bloom’s Taxonomy.

2 BLOOM'S TAXONOMY AND TASK DESIGN IN CONTENT TEACHING VIA TEXTBOOKS

2.1 The Importance of Higher-Order Thinking Skills in a Classroom

A major component amongst the higher-order thinking skills is critical thinking, as it was referred to as such in 1956 by Benjamin Bloom. Critical thinking, also known as reflective thinking or problem solving – is a process where a student is able to select an appropriate technique and operate with necessary information when they encounter a new problem or a situation (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956). Bloom generalised it as intellectual abilities and skills. The terms 'critical thinking' and 'higher-order thinking' have been used interchangeably since they have common characteristics of using the same thinking operations when processing information. Some have differentiated, however. Astleitner (2002) considered critical thinking as a higher-order thinking skill through which arguments are evaluated. Rudd, Baker and Hoover (2000) made a point to differentiate between the two and defined critical thinking as a reasoned, deliberate, and introspective approach to find solutions for problems.

The most important parts in the cognitive process are retention and transference. Retention is an ability to remember lesson materials for a certain period as the material was taught before. Mayer and Wittrock (1996) stated that transfer is an ability to solve new problems, answer new questions, or to make it easier to learn new materials by using the knowledge that was learnt before.

Higher-level learning requires students' ability to think critically about the information, and consistent practice will prepare them for the future. Paul and Elder (2007) stated that students develop as thinkers only if they are able to see the barriers that self-centered and group-centered thinking bring, without questioning these barriers they will lack command over their decisions and behaviors, and hence the quality of their lives suffers. Therefore, critical thinking is the foundation of a strong education because without critical thinking, rote memorization becomes dominant and students are far less likely to retain their learning (Nappi, 2017).

With the help of Bloom's Taxonomy, the goal of teachers is to gradually move students from lower-level thinking to higher-level thinking, so that they will develop their critical thinking abilities. This can be achieved through planning syllabus around the verbs that are defined on each thinking level in Bloom's Taxonomy. The educational syllabus in Estonia includes student learning outcomes where learning objectives contain an action, this action can be chosen from

Bloom's Taxonomy levels to help prepare a lesson. This helps setting learning objectives that are clear to the teacher and the student, setting expectations as well as signalling the high value the teacher places on high-order thinking.

Acquiring skills for critical thinking needs to start from an early age to ensure children are doing it habitually and are less resistant to use it in their learning process. Thompson (2011) stated that when students have not been exposed to critical thinking exercises in earlier grades, then in intermediate grades they will resist doing critical thinking exercises as they perceive them being too difficult. Perry (2019) also found a strong evidence between teaching metacognition in schools and its positive effect on students' intelligence. Critically thinking students focus on questions as it is impossible to become a good thinker while asking poor questions (Paul & Elder, 2007). One way for children to learn asking good questions is through the example that a teacher can set through the Socratic questioning technique. In the Socratic questioning the teacher shows ignorance to create a dialogue with the learners in order to activate higher-level thinking because students need to think, discuss, debate, evaluate, and analyse the topic at hand (Intel® Teach Program, 2007). This way the children will see the questioning as a normal process and can do it independently without always needing the teacher's assistance.

Teachers need to develop complex thinking in students and accurately assess the progress of learning. Higher-order thinking helps learners make connections between the past and new learning; new pathways are created, existing ones strengthened, and the probability of both retention and new learning rises (Sousa, 2006). Teaching and testing are intricately linked to each other because mastering one level of thinking does not ensure that students are also able to use this information and perform at higher levels. Factual knowledge does not guarantee that students can develop synthesis from it, therefore teachers must test critical thinking to see how students perform at higher-level tasks. (Aviles, 1999)

The process of teaching thinking skills requires preparation where it is clear if the learning process entails evaluating existing skills or developing higher skills, while at the same time being mindful of learners' abilities to think and provide answers. Children learn to think when teachers aim to improve the children's problem solving ability that can be achieved when they have to work on various problems systematically and methodically (Hamers, van Luit, & Csapo, 1999). Ritchart (2002) has emphasised for teachers developing thinking routines in the classroom that are thinking-

rich and mentally engaging for students, and will activate and help guide students' thinking towards larger purposes like understanding. This can be achieved through routine activities like brainstorming, argumentation, and asking open-ended questions. Snyder (2008) claimed after reviewing studies about questioning methodology that teachers should also be aware of students' initial resistance to answer and make them feel comfortable thinking through an answer rather than trying to respond as quickly as possible, and claimed that too often teachers did not wait long enough for a response and choosing to reword the question or asking a different student for a response.

Analysing textbooks and planning lessons well ahead of time is important since it is unlikely that teachers can come up with questions and tasks that would activate different levels of thinking. Careful question planning to utilize various cognitive taxonomies will help develop a wider range of questions that enable learners to recall information and use this in various activities like analysing, applying, and creating (Nappi, 2017). Teachers who have quickly created learning performance assessments, or are using premade tests without reviewing which thinking skills are required, are going to ask less higher-order thinking questions than they originally planned (Brookhart, 2010). Studies (Saeed, et al., 2012), (Tienken, Goldberg, & DiRocco, 2010) have shown teachers' tendency to focus towards using lower-order thinking questions and oftentimes are not giving enough response time for students to come up with answer that would be categorized into a higher-order thinking.

Developing and implementing thought-provoking, higher-order thinking programmes demand thorough reorganization in the way how the teacher teaches. A variety of didactic strategies must be mastered and used to encourage different forms of active learning which in turn lead to higher-order thinking (Hamers, De Koning, & Sijtsma, 1998). This puts an emphasis on the teacher's understanding of Bloom's Taxonomy and implementation of it because if the teacher teaches and assesses the students to make them learn the material or lesson, then remember for a certain period, it means that the teacher directly focuses on remembering as the only cognitive process category.

2.2 The Importance of Lower-Order Thinking Skills in Classroom

Promoting higher-order thinking among students is an important educational goal, especially since teachers have a tendency to leave higher-order thinking only to high-achieving students, therefore neglecting the possible progress in low-achieving students. Teachers usually ask lower-order

thinking tasks from low-achieving students. Zohar, Degani and Vaaknin (2001) find in their study that teachers think that higher-order thinking tasks are meant for high-achieving students because the same tasks would be impossible for those who have problems mastering the basic facts. Teachers are likely motivated to do it by good intentions because in this way they keep hard and frustrating tasks from low-achieving students, but this creates a vicious cycle where students, whose thinking skills need most development, get less attention (Zohar & Dori, 2003). Study conducted by Zohar and Dori (2003) also showed how high-order thinking was not exclusive to only high-achieving students.

The balance of task difficulty has been shown to be important where lower-level thinking cannot be completely disregarded even with low-achieving students. A study done by Agarwal (2019) shows how students achieved higher-level learning primarily through the mixed question type quizzes, followed by the usage of higher-level quizzes only, demonstrating that the lower-level learning may be less potent than engaging continuous higher-level practice. Although the fact quizzes were beneficial for the fact learning, they did not facilitate higher-level learning, contrary to popular intuition based on Bloom's Taxonomy where the mastery of one level enables student to graduate to the next level. Cognitive scientist Daniel Willingham (2009) notes that before fostering the higher-level learning, students' basic knowledge must be reinforced because the thinking skills cannot be effectively deployed without a factual knowledge. Educational professor and historian Diane Ravitch (2009) has argued that teachers have neglected the fact that in order to think critically, one needs quite a lot of knowledge to think about. Thinking critically involves comparing, contrasting, and synthesising what has been learned, and a great deal of knowledge is needed before a meaning and the alternative explanations can be reflected upon.

2.3 Thinking Skills in Language Immersion Setting

Task complexity also applies to language learning where effective language acquisition is partly dependent on the lower-level and higher-level thinking. Communicative language tasks where own ideas are created and expressed demand the use of critical thinking, however it is possible to teach a language without including the elements of critical thinking, one example is using 'listen-and-repeat' drills and focusing only on acquiring basic vocabulary (Hughes, 2014). Tasks that require learners to investigate, personalise, and solve problems, then higher-level thinking needs to take place. In the modern language methodology communicative tasks, that require critical thinking,

are commonly used because these tasks create authentic communication (Hughes, 2014). Language immersion is learner-centred and implements active learning methodology where social, communication, group work skills are emphasised (Kebbinau & Aja, 2011), this in turn creates additional lesson planning workload for a teacher and demands from a teacher in-depth knowledge of educational methodologies.

Preparation for the language immersion programme is more demanding from a teacher because the task levels must be used in accordance to the variety of language levels present in the classroom, amongst students can be low-achieving students with high language proficiency and high-achieving students with low language proficiency. In higher grades language development can hinder progress in subject learning. Teachers consider the main problems in language immersion settings as various levels of language proficiency, reading ability, support from parents, students' potential, and learning styles (Walker & Tedick, 2000). Upper-elementary immersion teachers, who teach in partial immersion programmes, have reported problems in teaching advanced-level subjects because students' cognitive development is higher than second language proficiency (Met & Lorenz, 1997).

2.4 The Evolution of Bloom's Taxonomy

Benjamin Bloom received a Ph.D. in Education from the University of Chicago in 1942 and is known as an education psychologist who researched and developed thinking behaviours in the learning process. Bloom developed a system which enables to meticulously plan and measure educational training and learning objectives (Eisner, 2000). Bloom published in 1956, 'Taxonomy of educational objectives: Handbook 1, the cognitive domain'. Taxonomy represents a hierarchy of processes from basic to complex ones, before mastering upper levels, lower levels must be mastered (Gershon, 2018). Bloom's Taxonomy has impacted teacher preparation programs, classroom pedagogy, and educational research, partly due to its simplicity.

Bloom's Taxonomy has been analysed and criticised by educators, and psychologists. Robert Marzano was developing his own taxonomy based on Bloom's version and found that while Bloom's Taxonomy provides a wide framework of necessary skills, more cohesive version of strict hierarchical model was necessary to activate each higher-level thinking skill through its lower-level thinking skills (Irvine, 2017). Bloom's six thinking processes assumed that the complicated tasks can require one process more than others, and a task was primarily either analysis or

evaluation. This was shown as untrue by Marzano (2000), who established that all complex learning activities require using several different thinking skills.

In 1999, Bloom's former student Lorin Anderson published a revised version of Bloom's Taxonomy to involve a wide range of elements that influence teaching process. According to Anderson and Krathwohl (2001) the original taxonomy still consists of a lot of important ideas that are useful for the modern teachers, who still face problems such as creating and implementing appropriate teaching and assessment materials. Anderson started differentiating between "knowing what it is" content and "knowing how to do" content, and the procedures involved in solving problems. Anderson reversed the two highest levels of Bloom's Taxonomy, and also revised it to highlight learning in a verb tense instead of using nouns as category markers, because the taxonomy reflects different forms of thinking and thinking is an active process (Anderson, 2001). The knowledge category was renamed because knowledge itself is an outcome or product of thinking, not a form of thinking, this was replaced with the word *remembering*; comprehension and synthesis were retitled to *understanding* and *creating* respectively, in order to better define the thinking that takes place in respective categories (Anderson, 2001).

Krathwohl (2002) states that Bloom's Taxonomy can be used as means for determining the congruence of educational objectives, activities, and assessments in a unit, course, or curriculum. Shabatura (2020) described the learning process through Blooms' Taxonomy: remembering must happen before understanding a concept, only then applying becomes possible, and only after analysing it is possible to evaluate and through complete evaluation it is possible to create.

2.5 Revised Bloom's Taxonomy Levels

Following are each levels of Revised Bloom's Taxonomy with keywords and questions applicable for their level.

Remembering is the lowest level of cognitive process in Revised Bloom's Taxonomy. Remembering process is retrieving knowledge that is needed from long-term memory (Anderson, 2001). It relies on previously learnt material and demonstrating remembering skills by students recalling facts, terminology, basic concepts, and answers.

Remembering is especially important for a meaningful learning and solving some problems that are similar to other problems. Remembering is the basis for all other thinking levels to take place.

According to Anderson and Krathwohl (2001), remembering process is divided into two categories: recognising, having an access to the information from long term memory and then comparing it to the new information; recalling, being able to retrieve correct information from long term memory to complete the assessment.

According to Anderson and Krathwohl (2001), *understanding* enables to form one's own meaning from informational materials, such activities include reading and teacher explanations. Students reconstruct the information they are exposed to into different forms such as oral or graphics (Anderson, 2001). Learners can demonstrate understanding of information by organising, comparing, translating, and expressing the main ideas from the material. For the language learner, this level will take longer time than *remembering*, and teacher may need to ask simplified questions (Hughes, 2014).

Krathwohl (2002) divided this category into several following sub-categories:

- Interpreting, changing the information from one form to another;
- Exemplifying, making source material easier to understand by giving examples;
- Classifying, forming categories from information and being able to allocate correct examples to respective categories;
- Summarising, producing an overview of information without eliminating the main ideas;
- Inferring, recognising similarities and patterns in the information;
- Comparing, distinguishing similarities and differences between two or more objects;
- Explaining, making models of a causal relationship into a system.

According to Anderson and Krathwohl (2001), *applying* refers to using learnt procedure either in a familiar or a new situation, and it is related to procedural knowledge. Problem is an assessment in which solving procedure is still unidentified by students, they must find the appropriate procedure to solve the problems.

Anderson and Krathwohl (2001) separate this category into following sub-categories: executing, procedure that is applied in a familiar task, commonly associated with skills and algorithms that contain some different steps, and must be executed by constant sequences; implementing, solving unfamiliar problems through appropriate choice of procedure. Usually one best answer is found on an application level (Brookhart, 2010). In the case of language learning this often represents

answering comprehension or filling in a table with the information gathered from text (Hughes, 2014).

The more specific cognitive process is *analysing*. Analysing involves breaking material into smaller parts and determining how these are related to each other and to an overall structure (Mayer R. E., 2002). The process of analysing involves differentiating between a specific part and a general concept. The general concept must be completely understood before analysing can take place.

There are three subcategories included into this category, according to Krathwohl (2002) these are: differentiating, important parts are separated from information; organising, understanding how parts of information build a coherent structure; attributing, establishing a point of view, opinions, values, or objectives behind the information. Learners examine the information and break down it into smaller parts, through identifying motives or causes they find evidence supporting generalisations and one task can produce numerous correct answers (Brookhart, 2010).

According to Krathwohl (2002), *evaluating* involves coming to a judgement based on criteria and standard which can be qualitative or quantitative. Evaluating also covers: checking, testing consistency or errors; criticising, evaluating a information on the basis of external criteria or standard (Krathwohl, 2002).

Learners can present and defend opinions by making judgements about the information, they can check the validity of ideas or quality of work based on an external set of criteria. Evaluating likely provides language learners the biggest challenge as it can require high levels of language proficiency (Hughes, 2014).

Creating process is the highest level among the other previous thinking levels. The process of creating usually happens through high creativity and is related to the previous five thinking processes. Through *creating* different elements are put together to form a coherent and functional system (Anderson, 2001). This is creating an original product, idea. It follows all previous learning experiences and never existed pattern or structure is formed.

Mayer (2002) divided this part into three sub-categories: generating, describing problems and making a choice or a hypothesis based on criteria or standard; planning, solution to problems is

created through practicing steps; (3) producing, solving problems through the execution of plans based on certain specification.

It is possible to devise different Bloom's Taxonomy levels from one task category and understanding of this process helps teachers prepare their lessons, come up with extra tasks, or questions during a lesson. Fastiggi (n.a) offers a simple stepped questioning activity where each following question becomes cognitively more demanding on students and this process can be individual, pair or group activity:

1. What can you remember about the story? (Remembering)
2. Summarise the story in your own words. (Understanding)
3. Suggest how the main lessons in this story could help other young people. (Applying)
4. Why did the different characters in the story behave the way that they did? (Analysing)
5. Evaluate the strength of the main character's decision to leave. (Evaluating)
6. Rewrite the ending of this story, to show a different outcome. (Creating)

Knowledge about Bloom's Taxonomy levels help plan effective learning objectives, as shown in the table below. Bloom's Taxonomy verbs that are associated with multiple thinking levels can apply to different activities, and when teachers compile their students' learning objectives, they need to keep in mind that skill, action or activity is taught using the verb that determines the Bloom's Taxonomy level (Shabatura, 2020).

Table 1. *Connection between Bloom's Taxonomy levels, active verbs and learning objectives*

Bloom's Level	Key Verbs (keywords)	Example Learning Objective
Create	design, formulate, build, invent, create, compose, generate, derive, modify, develop	By the end of this lesson, the student will be able to design an original homework problem dealing with the principle of conservation of energy.
Evaluate	choose, support, relate, determine, defend, judge, grade, compare, contrast, argue, justify, support, convince, select, evaluate	By the end of this lesson, the student will be able to determine whether using conservation of energy or conservation of momentum would be more appropriate for solving a dynamics problem.
Analyse	classify, break down, categorize, analyse, diagram, illustrate, criticize, simplify, associate	By the end of this lesson, the student will be able to differentiate between potential and kinetic energy.
Apply	calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, perform, present	By the end of this lesson, the student will be able to calculate the kinetic energy of a projectile.
Understand	describe, explain, paraphrase, restate, give original examples of, summarize, contrast, interpret, discuss	By the end of this lesson, the student will be able to describe Newton's three laws of motion to in her/his own words.
Remember	list, recite, outline, define, name, match, quote, recall, identify, label, recognize	By the end of this lesson, the student will be able to recite Newton's three laws of motion.

Source: Shabatura (2020).

3 ANALYSIS OF BLOOM'S TAXONOMY TASK DESIGN IN VANALINNA RIIGIKOOL'S TEXTBOOK

3.1 Methodology

Descriptive research examines the situation at its current state based on observations to identify characteristics of an existing phenomenon or the correlation between two or more phenomena (Williams, 2007). This approach was chosen to conduct a study on the 5th grade history textbook 'Eesti ajaloo õpik 5. klassile. Pääsukese lend läbi ajaloo' used in Narva Vanalinna Riigikool.

The content of every chapter in the textbook was carefully examined to confirm the base information provided for completing the tasks given in respective chapters. Tasks were evaluated according to the cognitive difficulties on the revised Bloom's Taxonomy spectrum. Each task was defined as *remembering*, *understanding*, *applying*, *analysing*, *evaluating*, or *creating*.

Although completing textbook tasks through a second language by its nature requires certain levels of understanding, the tasks were evaluated through the assumption that the language level of a learner is sufficient for someone who has been learning a second language already for four years in a language immersion programme, and is familiar with the language. The task level on Bloom's taxonomy specification was chosen as the most important factor, regardless of learner's language ability to solve the tasks.

All tasks that could be completed with minimal knowledge of language by the use of key phrases from questions to answers, and did not require understanding words not used in the tasks, were classified as *remembering*. The tasks that required some notion of content knowledge but could be correctly answered without necessarily providing the facts from content, were allocated to a higher level. The tasks which relied purely on facts, were kept on *remembering* level, but if the correct answer could be expressed in a way that demonstrated the student's second-language ability, then these tasks were regarded as *understanding* level because they incorporate the language element in the completion of these tasks. Tasks that required physical activity, including searching for information from the content, were considered as *applying*. Higher-order tasks demanded from language and content learning students to produce answers in their second language, and while this could also be considered as creating level, the nature of the tasks was seen as the most important part. While a student would produce language even in lower-level tasks, the necessary input from the tasks was considered more important, because some tasks demanded understanding

the meaning of text but allowed answers to be given in very basic forms without the use of higher-order skills. In cases, even when the answer could be given in one or two words and therefore would otherwise be categorized as a *remembering* task, it was still considered as *understanding*.

The data of task level occurrence within the textbook was collected and presented separately as a summary to get an overview of how the task levels progress within the textbook as well as which levels are the most prevalent in general and in each respective chapter.

When at least half of the tasks in a chapter required higher-order thinking to complete them, no additional tasks were designed. Additional tasks were developed from existing lower-level tasks in order to demonstrate how higher-level tasks can be designed on a foundation of lower ones. Levels of existing tasks and additional tasks were defined. Some of the open-ended questions were considered as lower-order thinking tasks if they carried ambiguous purpose in the answering process. The question 'When and why did World War II start?', for example, is ambiguous because at first glance it appears to be a higher-order task, yet it can be answered briefly, lacking a component that would demand higher-order thinking. There were numerous question-tasks such as this, where the complexity level depended on whether the student answered with deep analysis and evaluation or merely with a factual understanding. Only questions that unambiguously required higher-order thinking tasks were classified as such.

The textbook was divided into six major sections based on the chapters in order to present detailed information about each chapter that is easier to understand. The information was then used to create additional higher-order tasks that were not represented in a chapter, if there were no analysing task, then analysing task was created. At the end of the analysis, an additional figure was created to demonstrate the task level occurrence that includes additional tasks developed for respective chapters in the textbook.

Each chapter of the textbook started with introductory questions that showed how the content would be presented. These questions could be answered with prior knowledge, but more often than not they were only possible to answer after reading through the content. Although these questions could be used to spark higher levels of learning, they serve as a guide for content being learnt and were not presented as tasks; therefore, they were excluded from being thus categorised in this study. There were also occurrences where they duplicated the same task.

3.2 Textbook Analysis and Results

Each chapter of the textbook is followed by exactly six tasks about the topic being learnt. The majority of tasks consist of simple questioning methodology. The book's 28 chapters create 168 different tasks that vary in their degree of difficulty, but the analysis shows a tendency to test lower-level thinking. Eight textbook chapters out of 28 included 50% higher-order thinking tasks; therefore, no additional tasks were created for those.

Lower-order thinking tasks accounted for the total of 114 tasks from which only seven tasks were at applying level. Occurrence of only seven tasks that needed applying learnt skills in practice gives room for further studies to see whether this is characteristic for this particular textbook, to the history subject in general, or neither.

Among the higher-order thinking tasks, the least prevalent was *creating*, accounting for ten tasks, followed by *evaluating* with 14 tasks. The most common higher-order thinking skill required was *analysing*, its 30 occurrences accounting for more than 50% of higher-order thinking tasks.

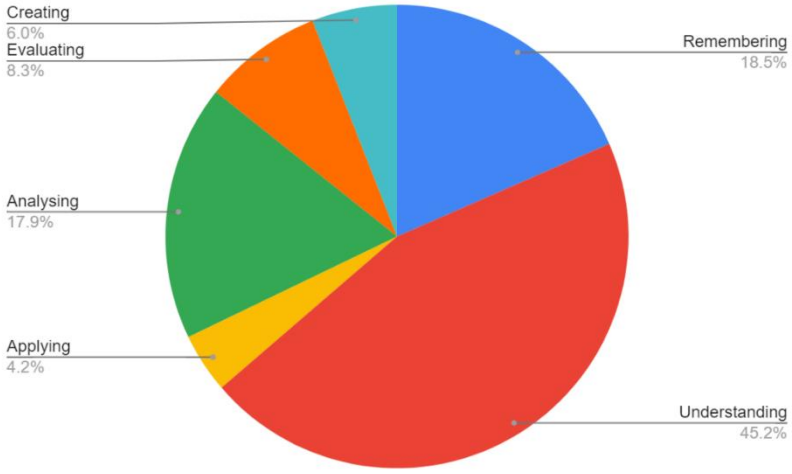

Figure 1. *Bloom's Taxonomy thinking-skill levels present in the textbook.*

The analysis did not show any evidence that the authors had considered or tried to create a system where tasks would gradually become more demanding throughout the curriculum. As the language skills and knowledge in general develop throughout the studies, it would make it possible to expect tasks to become more higher-level. In this textbook there was no recognisable pattern between the higher-order and lower-order task ratio or its development.

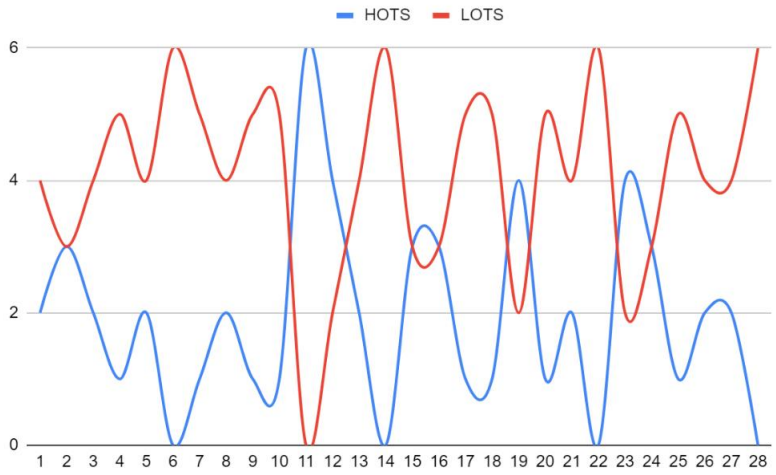

Figure 2. *Bloom's Taxonomy thinking-skill levels occurrence in the textbook chapters.*

3.3 Tasks to Complement the Textbook

The first five chapters introduce the history as a subject, as this is one of their new courses when entering the 5th grade. The second chapter is noteworthy for providing equal amounts of higher- and lower-order thinking tasks.

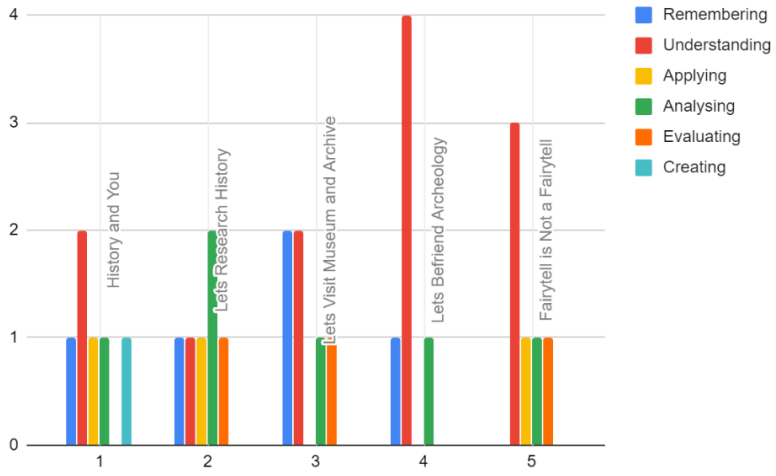

Figure 3. *Bloom's Taxonomy thinking-skill levels present in the chapters 1-5.*

The lower-order thinking tasks from which additional tasks were developed:

- What historical books do you know, or have read? (Remembering)
- Which historical movies have you seen? (Remembering)
- What history speaks about? (Understanding)

- What is a museum? (Understanding)
- Which Estonian museums have you visited? Where else would you want to go? (Remembering)
- What is an archive? (Understanding)
- Which archeological experiments have been conducted in Estonia? (Remembering)
- What are the purposes for conducting archeological excavations? (Understanding)
- Describe the different tasks of an archeologist from finding an antiquity to putting it to a museum. (Understanding)
- What was the purpose for creating the National Heritage Fund? (Understanding)
- Why is it important to conserve national heritage? (Understanding)
- Give examples of national heritage. (Understanding)

The higher-order thinking tasks to be used during these textbook chapters:

- Think back on the historical books you have read, which elements supported its historic aspect and why they were important. (Analysing)
- Take a historical movie you have seen, now write in new historical elements that you know, and change the story. (Creating)
- Create a story and a timeline about your own history. (Creating)
- Write a story about a museum that you would own. What would be there? Where and how would you get new attractions? How would you bring in more visitors? (Creating)
- Compare the museums you have visited. What strengths and weaknesses they had. How would you improve each museum? (Evaluating)
- How is an archive similar to a museum? (Analysing)
- What are the good and bad sides of archeological experiments in Estonia? (Evaluating)
- Create a story about your own archeological excavation; where will you dig, what you will find? (Creating)
- Give a reasoning about the different tasks of an archeologist has to do from finding an antiquity to putting it in a museum. (Analysing)
- Give arguments for and against having National Heritage Fund. (Analysing)
- What would be the long term implications of not saving national heritage? (Evaluating)
- Create and describe your own national heritage. (Creating)

The following chapters focus on the definition of time and evolution of the human race from the beginning of time until the early middle-ages. This section is dominated by lower-order thinking tasks.

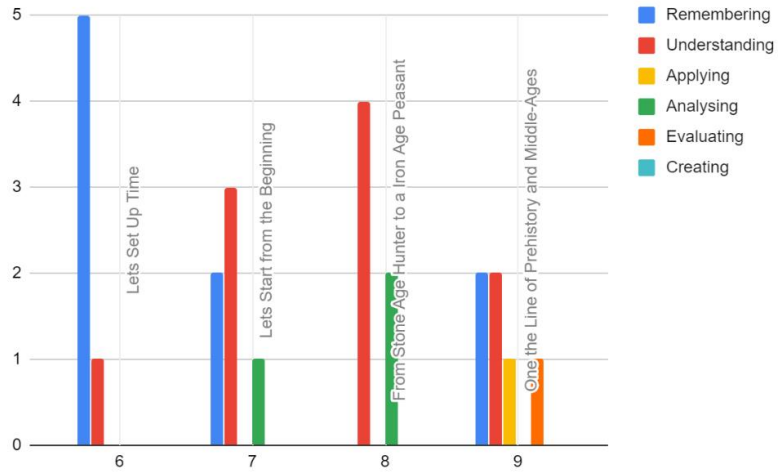

Figure 4. *Bloom's Taxonomy thinking-skill levels present in the chapters 6-9.*

The lower-order thinking tasks from which additional tasks were developed:

- What is a century? (Remembering)
- Prehistoric time is divided into stone, bronze, and iron age. Why? (Understanding)
- Which stages is historic time divided into? (Remembering)
- Why did people arrived in the Estonian territory later than in other places in Europe? (Understanding)
- Where were the beginnings of the modern human race? (Remembering)
- Describe the hunter's life from Pulli village. (Understanding)
- What did the clay items look like? (Understanding)
- Why were the fortresses built? (Understanding)
- How did people's lives change from starting to use clay items? (Understanding)
- What needed to be considered when building a fortress? (Understanding)
- What is a parish? What is a county? (Remembering)
- Why did Estonians use their living space to dry crops and threshing? (Remembering)

The higher-order thinking tasks to be used during these textbook chapters:

- Describe the centuries in the human life context, which stages are the most important? (Evaluating)
- How and why the human life is divided, similar to stone, bronze, and iron age? (Analysing)
- Why is it important to divide historic time into stages? (Analysing)
- Write about different possibilities that would have happened if the Estonian territory would have been populated before other places in Europe. (Creating)
- What benefited the beginning of the human race in particular places and what were the disadvantages that humans had to overcome? (Evaluating)
- Write a story about being a hunter in Pulli village. (Creating)
- Why did clay items look like they did and what were the benefits of it? (Analysing)
- Create and describe your own fortress and how would the life be there. (Creating)
- What items have recently changed people's life like clay items did before, how? (Analysing)
- Which parts of fortresses benefited particular elements of that era and how would you improve it? (Analysing)
- What advantages are having a parish over a county and vice versa? (Evaluating)
- What were the benefits and downturns of Estonians using their living space to dry crops and threshing? (Analysing)

The third section, which consists of an ancient conflict and survival of Estonian peoples, is also the most balanced one, offering three chapters that have at least half of the tasks requiring higher-order thinking skills.

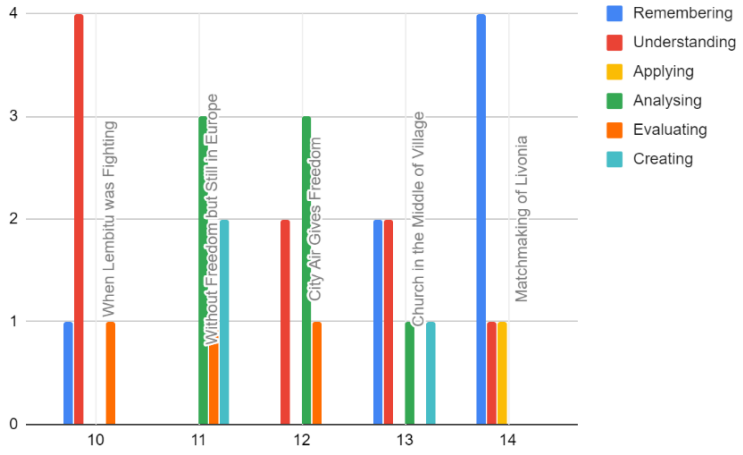

Figure 5. *Bloom's Taxonomy thinking-skill levels present in the chapters 10-14.*

The lower-order thinking tasks from which additional tasks were developed:

- Why did there exist a want to conquer Estonian lands? (Understanding)
- When and how our fight with the intruders concluded? (Understanding)
- What is the difference between a war and a battle? (Understanding)
- Why were many churches built exactly to Estonians' old holy places? (Remembering)
- What were the changes in Estonians' religious life due to conquest of Estonia? (Understanding)
- What events are held in churches nowadays besides sermons? (Understanding)
- What countries were fighting for the control of Livonia? (Remembering)
- What result came from the conclusion of the Russian-Livonian war? (Remembering)
- What country controlled Estonian territory by the mid 17th century? (Remembering)

The higher-order thinking tasks to be used during these textbook chapters:

- What aspects made Estonian lands special for others to want to conquer it, and who benefited the most from what? (Analysing)
- How the conclusion of the fight against intruders changed Estonians, what changed, what would have been different with a different result? (Evaluating)
- Write a story about how a series of battles lead to a war. (Creating)
- What were the positive and negative implications of building churches on Estonians' old holy places? (Evaluating)
- How Estonians benefited from the change in their religious life and how it was negatively affected? Weigh the pros against the cons and what conclusion will you have? (Evaluating)
- Which of the current events in churches could have been held also during that era, and how it would have benefited the people? (Analysing)
- What were the agendas for each country that was fighting for the control of Livonia? (Analysing)
- Who benefited the most and the least by the conclusion of Russian-Livonian war, how? (Analysing)
- Create a story of an Estonian living under foreign power until the mid 17th century. (Creating)

The fourth section covers peasants' life conditions.

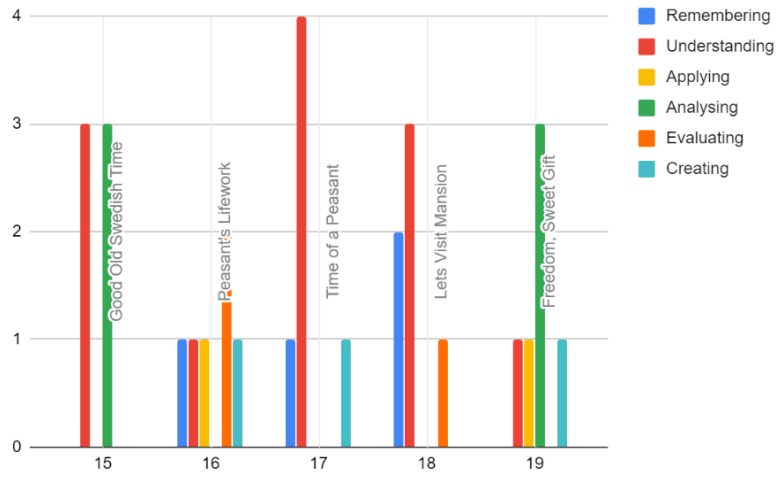

Figure 6. *Bloom's Taxonomy thinking-skill levels present in the chapters 15-19.*

- Which holidays were the most important for Estonians? (Remembering)
- What is the meaning of so-called storyweek reading? Give some examples. (Understanding)
- To which seasons was a year divided for our forebears? Why so? (Understanding)
- Where did the mansion owners get money from to develop their mansions? (Understanding)
- Which mansions and for what reasons have you visited? (Remembering)
- When and who founded the first mansions in Estonia? (Understanding)

The higher-order thinking tasks to be used during these textbook chapters:

- What holidays were the most important for Estonians back then and now, which in your opinion are better? (Evaluating)
- Create your own storyweek reading. (Creating)
- Why and how seasons of a year have changed compared to our forebears? (Analysing)
- Create your own mansion and what would its economy look like? (Creating)
- Create your own mansion based on the old mansions you have visited, and how it would be built based on the old standards? (Creating)
- What were the benefits of having first mansions in Estonia? (Analysing)

The fifth section of this textbook covers the birth of Estonian nation and its independence.

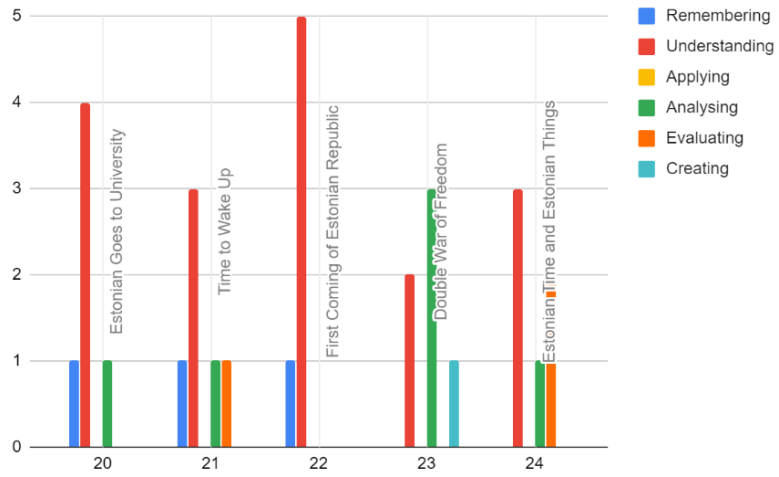

Figure 7. *Bloom's Taxonomy thinking-skill levels present in the chapters 20-24.*

The lower-order thinking tasks from which additional tasks were developed:

- Why were Estonians able to attend the reopened university? (Understanding)
- What was spectacular about Kristjan Jaak Peterson? (Understanding)
- Retell how Friedrich Robert Faehlmann and Friedrich Reinhold Kreutzwald are intertwined to the birth of our epos. (Understanding)
- What was the russification and what consequences did it have? (Understanding)
- What is called national awakening? (Understanding)
- How have Lydia Koidula, Jakob Hurt and Carl Robert Jakobson impacted Estonian peoples' history? (Understanding)
- When was Estonian independence announced in Pärnu and when in Tallinn? (Remembering)
- What country's army consisted of Estonians during the first world war? Why? (Understanding)
- Why was declaration of Estonian independence still important although one day later foreign powers conquered our young country? (Understanding)

The higher-order thinking tasks to be used during these textbook chapters:

- Who and how benefited from Estonians starting to attend the reopened university, what possible changes it created to the social order? (Analysing)
- Read one of Kristjan Jaak Peterson's original poems and write its message in a story as you understand it. (Creating)

- How the creation of Estonian national epos changed everyday life for better and in what ways it had a positive/negative effect? (Evaluating)
- How the russification impacted Estonia and what would be different without it? (Evaluating)
- What influenced and caused national awakening? (Analysing)
- Who and why between Lydia Koidula, Jakob Hurt and Carl Robert Jakobson has impacted Estonian history the most? (Analysing)
- Where was it more important to declare Estonian independence, in Pärnu or in Tallinn? Why? (Evaluating)
- How Estonians contributed to the first world war and what impact they had? (Analysing)
- How would history be different and life now without the first declaration of independence? (Analysing)

The last section of this textbook consists of the times during Soviet Union and covers mostly lower-order thinking skills.

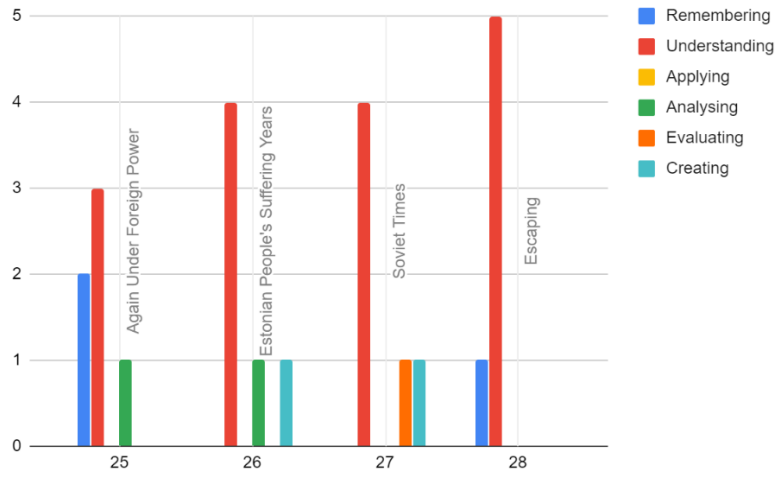

Figure 8. *Bloom's Taxonomy thinking-skill levels present in the chapters 25-28.*

The lower-order thinking tasks from which additional tasks were developed:

- When and why did the second world war start? (Understanding)
- What results did the ending of second world war have for Estonia? (Remembering)
- What was agreed between Hitler and Stalin on August 23th, 1939? (Remembering)
- What fates did the Estonian leading high position people have in the second world war? (Understanding)

- What crimes were committed against Estonians under Soviet Union's occupation? German occupations? (Understanding)
- When and why the first mass deportation took place in Estonia? (Understanding)
- Describe the shop during Soviet Union times? (Understanding)
- What changes did the Soviet times bring for people living in the countryside? (Understanding)
- Why were people not allowed to go abroad during Soviet times? (Understanding)
- What holiday is held every year on August 20th? (Remembering)
- When and what purpose did the Baltic Way have? (Understanding)
- Which plan by Moscow woke Estonians from the occupation sleep? (Understanding)

The higher-order thinking tasks to be used during these textbook chapters:

- What were the positives or negatives about the second world war for Estonia? (Analysing)
- What would be different now in Estonia with different results in the second world war? (Evaluating)
- Why did Hitler and Stalin need to find an agreement on August 23th, 1939? (Analysing)
- Create a story about an Estonian leading high position person and their fate during the seond world war? (Creating)
- Compare the crimes committed against Estonians under Soviet Union's and German occupations. (Evaluating)
- Create a story about a deported person during the Soviet era. (Creating)
- Create a story about owning a shop during in the Soviet Union and compare it to today. (Creating)
- How did people in the countryside benefit from the Soviet era? (Evaluating)
- How would have the Soviet Union benefited from its citizens visiting other countries? (Evaluating)
- Why and which day of independence is more important for Estonians? (Evaluating)
- Create a story about a family joining the Baltic Way. (Creating)
- Why Estonians had fallen to occupation sleep and how the Moscow's plan changed it? (Analysing)

As a result of creating additional higher-level tasks, the balanced version of the textbook includes exactly 50% of higher-level tasks and lower-level tasks, where the most dominant is still

understanding but evaluating and creating have increased. Lowest of all remains applying, which is lower-level task.

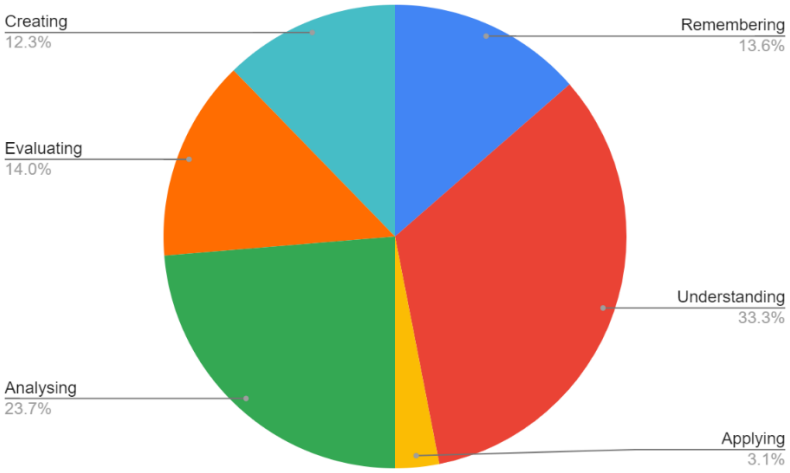

Figure 9. *Bloom's Taxonomy thinking-skill levels present in the textbook after including additional higher-level tasks.*

CONCLUSION

This analysis of the 5th grade history book showed a preponderance of tasks requiring only lower-order thinking. Considering that this textbook is used in language immersion school in Narva, the prevalence of lower-order thinking tasks helps to assure that students are able to answer most questions, but in terms of language skills improvement, which demands the development of thinking skills, this textbook is not sufficient without additional materials. Teachers need to supplement this material with activities and higher-order thinking tasks which would instigate thoughtful content and language learning, especially since many tasks required less active use of language by allowing short, one to three word answers — this confirmed the hypothesis of the paper: the textbook is not cognitively demanding due to its principal reliance on lower-order thinking questions.

Producing language is in itself a higher-order task, but in this study the nature of a task was considered, including the language skills needed to complete a task. Tasks that require minimal input or knowledge of language were considered as lower-order thinking tasks. This study was limited to a learner who has learned this language for four years because the task level can vary between students depending on their language skills.

This study's applicability is limited to the use of this textbook in a particular language immersion context and therefore the results in a study where a native speaker's perspective is researched, can be different. Findings are therefore not generalisable to other contexts, though the deficiency of higher-order tasks found might reasonably be considered a compelling reason for further research on the topic sampling a broader range of books, schools, student populations, and other contextual factors. This study focuses strictly on the nature of thinking skills needed to complete the book's tasks through the medium of the second language; further research could be conducted to reveal the textbook's usability for and impact on language acquisition per se.

SUMMARY IN ESTONIAN

Antud bakalaureusetöö põhineb mõtlemisoskuste arendamise vajadusel Bloomi taksonoomia mudeli järgi. Õppeprotsessis on oluline kaasata erinevaid mõtlemistasaneid, kuid suur rõhk peaks olema kõrgema mõtlemistasandiga ülesannetel, mis aitavad arendada õpilase kriitilist mõtlemist ja seeläbi edendada nii õpitava sisu kui keele omandamist.

Bakalaureusetöö on jaotatud sissejuhatuseks, kaheks peatükiks ja kokkuvõtteks. Eesmärgiks oli uurida seda, kuidas on Bloomi taksonoomia mõtlemistasandid esindatud õpikus, mida kasutatakse Narva Vanalinna Riigikoolis 5. klassi ajalootundide õpetamisel. Koos õpikust ülevaate saamisega seati sihiks pakkuda lisaülesandeid, mis tuginevad kõrgema mõtlemistasandi protsessidele.

Sissejuhatuses on välja toodud keelekümbluse mõiste ja selle teke Eestis, õpiku tähtsusest keelekümblusprogrammis, materjalide leiduvusest ning põhiprobleemidest. Arutletud on Bloomi taksonoomia vajadust õpiku koostamiseks ning eelnevad uuringud, mida on samas kontekstis läbi viidud.

Esimene peatükk käsitleb kõrgema mõtlemistasandi oskuse õppe tähtsust. Põhjendatud on kõrgemate mõtlemistasandi oskuste õpetamine klassiruumis ja seos õpitava omandamisega. Seda kõrvutatakse madalamate mõtlemisoskuste protsessidega ning tuuakse välja nende vajalikkus, et kõrgem mõtlemisprotsess saaks aset leida.

Teine peatükk koosneb uuritud õpiku analüüsi tulemustele, milles selgus, et 5. klassi õpik sisaldab peamiselt madalama tasandi mõtlemisprotsessidega ülesandeid. Õpikuga töötamise täiendamiseks on välja pakutud peatükkide kaupa erinevaid ülesandeid, mis on tuletatud madalama mõtlemisprotsessi ülesannetest, et luua kõrgema mõtlemisprotsessiga ülesanded.

Töös on läbivalt käsitletud kõrgema mõtlemistasandi arendamise vajadust eestkätt läbi Bloomi taksonoomia, seostatud seda keele- ja õpitava sisu omandamisega. Tulemustest saab järeldada, et antud õpik ei taga piisavalt kõrgema mõtlemisprotsessiga ülesandeid ja seab aluse edasisteks uuringuteks, et kinnitada, kas tegu on vaid antud õpikuga või on probleem laiemalt levinud üle kogu õppevara.

Antud uuring on piiratud konkreetse õpiku kasutamisele keelekümbluse 5. klassi ajalootundides, mistõttu võivad tulemused erineda uuringust, kus vaadeldakse õpikut emakeeles kõneleja kontekstist.

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APPENDICES

Appendix 1. The Textbook Chapters in Estonian

1. Ajalugu ja Sina
2. Uurime ajalugu
3. Lähme muuseumi ja arhiivi
4. Saame arheoloogiaga sõbraks
5. Muinasjutt ei ole muinasjutt
6. Paneme aja paika
7. Alustame algusest
8. Kiviaja kütist rauaaja põllumeheks
9. Muinas- ja keskaja piiril
10. Kui Lembitu võitles
11. Vabaduseta, aga ikkagi Euroopas!
12. Linnaõhk teeb vabaks
13. Kirik keset küla
14. Liivimaale tullakse kosja
15. Vana hea Rootsi aeg
16. Talupoja elutöö
17. Talupoja aeg
18. Lähme mõisnikule külla
19. Priius, kallis anne
20. Eestlane astub ülikooli
21. Aeg ärgata
22. Eesti Vabariigi esimene tulemine
23. Kahekordne Vabadussõda
24. Eesti aeg ja Eesti asjad
25. Jälle võõra võimu alla
26. Eesti rahva kannatuste aastad
27. Nõukogude aeg
28. Pääsemine

Appendix 2. The Textbook Task Classification Table

Chapter Number	Task Number	Task Type
1	1	Understanding
	2	Analysing
	3	Applying
	4	Remembering
	5	Remembering
	6	Creating
2	1	Understanding
	2	Remembering
	3	Analysing
	4	Evaluating
	5	Applying
	6	Analysing
3	1	Understanding
	2	Understanding
	3	Remembering
	4	Analysing
	5	Remembering
	6	Evaluating
4	1	Understanding
	2	Understanding
	3	Understanding
	4	Understanding
	5	Remembering
	6	Analysing
5	1	Understanding
	2	Understanding
	3	Understanding
	4	Analysing
	5	Evaluating
	6	Applying
6	1	Remembering
	2	Remembering
	3	Remembering
	4	Understanding
	5	Remembering
	6	Remembering
7	1	Remembering
	2	Understanding
	3	Analysing
	4	Remembering
	5	Understanding
	6	Understanding

8	1	Understanding
	2	Understanding
	3	Understanding
	4	Analysing
	5	Understanding
	6	Analysing
9	1	Understanding
	2	Remembering
	3	Applying
	4	Understanding
	5	Remembering
	6	Evaluating
10	1	Understanding
	2	Remembering
	3	Evaluating
	4	Understanding
	5	Understanding
	6	Understanding
11	1	Evaluating
	2	Creating
	3	Analysing
	4	Analysing
	5	Analysing
	6	Creating
12	1	Analysing
	2	Understanding
	3	Evaluating
	4	Understanding
	5	Analysing
	6	Analysing
13	1	Understanding
	2	Analysing
	3	Remembering
	4	Creating
	5	Remembering
	6	Understanding
14	1	Applying
	2	Remembering
	3	Remembering
	4	Remembering
	5	Remembering
	6	Understanding
15	1	Analysing
	2	Analysing
	3	Understanding

	4	Analysing
	5	Understanding
	6	Understanding
16	1	Remembering
	2	Applying
	3	Understanding
	4	Evaluating
	5	Evaluating
	6	Creating
17	1	Understanding
	2	Understanding
	3	Understanding
	4	Understanding
	5	Remembering
	6	Creating
18	1	Understanding
	2	Understanding
	3	Understanding
	4	Evaluating
	5	Remembering
	6	Remembering
19	1	Applying
	2	Analysing
	3	Creating
	4	Analysing
	5	Understanding
	6	Analysing
20	1	Understanding
	2	Analysing
	3	Remembering
	4	Understanding
	5	Understanding
	6	Understanding
21	1	Remembering
	2	Understanding
	3	Evaluating
	4	Understanding
	5	Analysing
	6	Understanding
22	1	Understanding
	2	Understanding
	3	Understanding
	4	Understanding
	5	Remembering
	6	Understanding

23	1	Analysing
	2	Understanding
	3	Analysing
	4	Analysing
	5	Creating
	6	Understanding
24	1	Analysing
	2	Understanding
	3	Evaluating
	4	Understanding
	5	Understanding
	6	Evaluating
25	1	Remembering
	2	Understanding
	3	Understanding
	4	Analysing
	5	Remembering
	6	Understanding
26	1	Understanding
	2	Understanding
	3	Understanding
	4	Understanding
	5	Analysing
	6	Creating
27	1	Understanding
	2	Understanding
	3	Understanding
	4	Understanding
	5	Evaluating
	6	Creating
28	1	Understanding
	2	Understanding
	3	Understanding
	4	Understanding
	5	Understanding
	6	Remembering

Appendix 3. Additional Higher-Order Thinking Tasks in Estonian

1. Mõtle ajaloolistele raamatutele, mida oled lugenud. Mis tegid neist ajaloolised raamatud ja kuidas olid need olulised?
2. Vali ajalooline film, mida oled näinud ja muuda selle lugu nii, et lisad uued ajaloolised hetked.
3. Tee enda ajaloost lugu ja ajajoon.
4. Kirjuta lugu muuseumist, mis oleks sinu oma. Mis seal oleks? Kust ja kuidas sa saaksid uusi eksponaate? Kuidas sa meelitaksid külastajaid oma muuseumisse?
5. Võrdle muuseume, mida oled külastanud. Millised olid nende tugevused ja nõrkused. Kuidas sa iga muuseumi paremaks muudaksid?
6. Kuidas on arhiiv sarnane muuseumile?
7. Missugused on arheoloogiliste eksperimentide head ja halvad küljed Eestis?
8. Loo oma lugu arheoloogilisest väljakaevamisest; kus sa kaevad, mida sa leiad?
9. Põhjenda arheoloogi erinevaid ülesandeid antiikeseme leidmisest kuni selle muuseumisse paigutamiseni.
10. Esita poolt- ja vastuargumente Muinsuskaitseameti jaoks.
11. Millised oleksid pikaajalised mõjud kultuuripärandi mitte säilitamise puhul?
12. Loo ja kirjelda oma kultuuripärandit.
13. Kirjelda sajandeid inimelu kontekstis, mis perioodid on kõige tähtsamad?
14. Miks ja kuidas inimelu on jaotatud sarnaselt kivi-, pronksi- ja rauaajale?
15. Miks on oluline jaotada ajaloolist aega perioodideks?
16. Kirjuta erinevatest võimalustest, mis oleks juhtunud siis, kui Eesti territooriumile oleksid püsima jäänud inimesed enne kui mujal Euroopas.
17. Mis aitas inimkonna algusele kaasa teatud kohtades ja millised olid probleemid, mis tuli ületada?
18. Kirjuta lugu sellest, et oled kütt Pulli külas.
19. Miks savinõud sellised välja nägid ja missugused olid selle eelised?
20. Loo ja kirjelda enda linnust ja missugune oleks seal elu.
21. Mis esemed on hiljuti muutnud inimeste elu nagu savinõud seda tegid, kuidas?
22. Missugused linnuse osad andsid tol ajal eelise ja kuidas sa neid paremaks muudaksid?
23. Mis on kihelkonna eelised maakonna ees ja vastupidi?

24. Mis olid eelised ja probleemid, et eestlased kasutasid oma elamist rehepeksuks ja vilja kuivatamiseks?
25. Mis muutis eestlaste maa teiste silmis eriliseks, et seda vallutada ja kes millest kõige rohkem kasu said?
26. Kuidas muutis võitlus sissetungijate vastu eestlasi, mis muutus, mis oleks teistsuguse tulemusega teistsugune olnud?
27. Kirjuta lugu sellest, kuidas mitmed lahingud viivad sõjani.
28. Mis olid positiivsed ja negatiivsed küljed selle puhul, et kirikud ehitati eestlaste vanade pühapaikade asemele?
29. Kuidas eestlased said kasu sellest, et nende usuelu muutus ja kuidas see oli negatiivselt mõjutatud? Kaalu plusse ja miinuseid ning mis järelduseni sa jõuad?
30. Milliseid kiriku tänapäevaseid sündmusi oleks saanud korraldada ka tol ajal ning kuidas see oleks inimestele kasulik olnud?
31. Mis olid iga riigi tagamõtted, kes võitlesid Liivimaa kontrollimise pärast?
32. Kes said kõige rohkem ja kõige vähem kasu Vene-Liivi sõja lõpust, kuidas?
33. Kirjuta jutt eestlasest, kes elab 17- sajandi keskpaigani võõra võimu all.
34. Mis pühad olid eestlaste jaoks kõige tähtsamad siis ja praegu, mis on sinu arvates paremad?
35. Kirjuta oma niinimetatud lugunädala lugu.
36. Miks ja kuidas on aasta hooajad muutunud meie esivanematega võrreldes?
37. Loo oma mõis ja kuidas näeks välja selle majandandus?
38. Loo oma mõis nende vanade mõisade abil, mida oled külastanud, kuidas sinu mõis ehitataks vanade standardite põhjal?
39. Mis olid selle eelised, et tekkisid Eesti esimesed mõisad?
40. Kes ja kuidas sai kasu sellest, et eestlased hakkasid käima taasavatud ülikoolis, missuguseid võimalikke muutusi see tõi sotsiaalsesse korda?
41. Loe ühte Kristjan Jaak Petersoni luuletuse algset vormi ja kirjuta selle sõnum jutukesena nii nagu sellest aru saad.
42. Kuidas eesti rahvuslik eepos muutis igapäevaelu paremaks ja mil moel olid sellel positiivsed ja negatiivsed tagajärjed?
43. Kuidas venestamine mõjutas Eestit ja mis ilma selleta oleks teistmoodi olnud?
44. Mis mõjutas ja põhjustas rahvuslikku ärkamist?

45. Kes ja miks on Lydia Koidula, Jakob Hurt ja Carl Robert Jakobsonist mõjutanud eesti ajalugu kõige rohkem?
46. Kus oli rohkem tähtis välja kuulutada iseseisvumist, kas Pärnus või Tallinnas? Miks?
47. Kuidas eestlased panustasid Esimesse maailmasõtta ja mil määral?
48. Kuidas oleks ajalugu ja elu praegu erinev, kui poleks iseseisvust välja kuulutatud?
49. Mis olid Teise maailmasõja positiivsed ja negatiivsed küljed Eesti jaoks?
50. Mis oleks praegu Eestis teistmoodi, kui Teine maailmasõda lõppenuks teisiti?
51. Miks Hitler ja Stalin pidid leidma kokkuleppe 1939. aasta 23. augustil?
52. Kirjuta lugu eesti juhtivast tegelasest ja tema saatusest Teises maailmasõjas.
53. Võrdle Nõukogude Liidu ja Saksamaa okupatsioonide kuritegusid eestlaste vastu.
54. Kirjuta lugu küüditatud inimesest Nõukogude Liidu perioodil.
55. Kirjuta lugu sellest, kuidas Nõukogude Liidus kuulub sulle pood ja võrdle seda tänasega.
56. Kuidas said maakohtades elavad inimesed kasu Nõukogude ajast?
57. Kuidas oleks Nõukogude Liit saanud kasu sellest, et elanikud oleksid külastanud teisi riike?
58. Miks ja milline iseseisvumise päev on eestlaste jaoks rohkem tähtis?
59. Kirjuta jutt sellest, kuidas pere ühineb Balti Ketiga.
60. Miks olid eestlased vajunud okupatsiooniunne ja kuidas Moskva plaan seda muutis?