

UNIVERSITY OF TARTU  
DEPARTMENT OF ENGLISH STUDIES

DIFFERENCES BETWEEN INDIVIDUALLY AND  
COLLABORATIVELY WRITTEN TEXTS IN CASE OF ESTONIAN  
UPPER SECONDARY SCHOOL EFL STUDENTS

MA thesis

INGVAR VEIDENBERG

SUPERVISOR: *Asst. Lect.* NATALJA ZAGURA, MA

TARTU

2017

## ABSTRACT

This thesis explores collaborative writing and the differences between collaboratively and individually written texts in terms of sentence complexity and linguistic accuracy. Collaboratively and individually written texts have been extensively compared in previous studies all over the world, but in Estonia, collaborative writing has been out of research focus altogether. In addition, there have been few studies concentrating on comparing and analysing individually and collaboratively written texts that have been written by the same students.

The main aims of this thesis are to find out if there are any significant differences between students' collaboratively and individually written texts, and if there are any significant differences between the texts written before and after a collaborative writing task in terms of sentence complexity and linguistic accuracy.

The literature review discusses what skills and competences foreign language learners might need to excel in writing tasks. The section also provides an overview of collaborative writing as such, and discusses previous studies on collaborative writing in terms of the differences between collaboratively and individually written texts as well as what effects collaborative writing might have on students' writing skills. Previous studies have shown that collaborative writing has a positive effect on foreign language learners' writing skills. In addition, collaboratively written texts have been shown to be considerably more accurate and complex. However, the studies comparing collaboratively and individually written texts have analysed the texts written by different students at the same time, not the ones written by the same students at different times. This thesis aims to fill that gap.

The empirical part compares individually and collaboratively written texts as well as individually written texts with one another. Thirteen upper secondary level English as a foreign language students wrote one text collaboratively in groups and two texts individually – one before the collaborative writing task and the other after collaborative writing task. The results were compared using paired samples T-test, and the statistical significances in differences were calculated.

## TABLE OF CONTENTS

<b>ABSTRACT</b> .....	2
<b>1 INTRODUCTION</b> .....	4
<b>2 LITERATURE REVIEW</b> .....	8
<b>2.1 Writing in English language learning context</b> .....	8
<b>2.3 Collaborative writing</b> .....	11
<b>2.4 Previous research on collaborative writing</b> .....	14
<b>2.4.1 The effects of collaborative writing on students' writing skills</b> .....	14
<b>2.4.2 Collaboratively and individually written texts</b> .....	16
<b>3 THE EMIPRICAL STUDY</b> .....	19
<b>3.1 The sample</b> .....	19
<b>3.2 Procedure</b> .....	19
<b>3.3 The results</b> .....	24
<b>3.3.1 Complexity</b> .....	25
<b>3.3.2 Accuracy</b> .....	28
<b>3.4 Discussion</b> .....	33
<b>4 CONCLUSION</b> .....	37
<b>REFERENCES</b> .....	39
<b>RESÜMEE</b> .....	44

## 1 INTRODUCTION

National curriculum for upper secondary schools of Estonia (NC) aims for the students to acquire several competences by the time of graduation. For one, the students should be able to “clearly, relevantly and politely express oneself in both one’s mother tongue and in at least two foreign languages” (NC 2014). For most Estonian students English is the first foreign language, which they have also learned for the longest period of time. Therefore, by the end of their upper secondary level, the students should be able to express themselves clearly and politely in English while maintaining the ability to stay on the topic at hand. This aim holds true not only on individual level (e.g. when making a presentation or giving a speech), but also on group level, as the students should be able to “engage in cooperation with other people in different situations” (ibid). In addition, the national curriculum aims for the students to “participate in creating digital content; including creation and use of texts” and “communicate and cooperate in different digital environments” (ibid). In other words, the students should be able to not only write texts in English by digital means, but also do that in different digital environments in cooperation with other people and be clear, polite, and on topic at the same time.

For English, the NC (2014) aims for the students to reach language proficiency level of B2 by the end of upper secondary school, which in case of writing skills means that the students

- 1) can write coherent texts on specific and general themes, while train of thought is logical;
- 2) can explain their viewpoints;
- 3) can use varied expressions in order to avoid repetitions;
- 4) use punctuation marks in sentences mostly according to the rules;
- 5) have mastered grammar fairly well and do not make mistakes that cause misunderstanding;
- 6) in most cases can correct occasional slips, accidental mistakes and lapses in syntax themselves.

This implies that the students should be able to write clear, logical and relatively error-free texts that the reader could understand while maintaining variety in expressions. They should also be able to successfully proofread, analyse, and, when necessary, correct their written

produce themselves. Some misconceptions of grammar are allowed, but only to the degree that does not cause misunderstanding.

The analysis of the 2016 national examination in English reveals that the lowest-scoring, and therefore the most difficult, part of the examination for students was writing (Kriisa 2016). Therefore, it is important to pay more attention to developing students' English writing skills in the classroom. This, on the other hand, might prove challenging especially because usually there is only one teacher in the classroom, and hence, each student might not receive sufficient assistance and feedback for their writing tasks.

This is where collaborative learning techniques, and collaborative writing in particular, might become beneficial. Collaborative learning, as the name suggests, is a learning technique in which students learn together to acquire new knowledge (Dillenbourg 1999). During collaboration, students may be involved in multiple communication processes that may be beneficial to learning by triggering necessary internal cognitive processes. For example, by presenting their ideas to fellow collaborators, students may also explain the material, and thus help their group mates' understanding of the material or the task. This way, both listeners and speakers can learn (Chi 2000). To be effective, the technique assumes that students actively participate in listening (e.g. by paraphrasing what they have heard) and speaking (Barron 2000). If the necessary assumptions are met, peer collaboration may be more effective for students than listening to adults' (e.g. teachers') explanations because students can express themselves in their own language. Therefore, explanations of difficult vocabulary, for example, may be more understandable for students when they come from their peers, rather than a teacher (Noddings 1985). In other words, when the teacher shares some of his or her teaching responsibilities with the students, the latter might learn more than by listening to the teacher's explanations.

This suggests that learning in collaboration might also be effective for developing students' writing skills. In fact, Dale (1994) points out that while collaborating, students can observe their peers, and model their thinking strategies and writing styles. A novice writer can learn from his or her more competent teammates how to address the writing task and its problems, and how to write in good English (Dale 1994). This implies that writing in collaboration might be beneficial for students' writing skills. Indeed, according to Jones (1995), collaborative writing, which is co-authoring of a text by two or more writers (Storch 2013), distributes responsibility for learning process more equally between students and their teacher. This way, students have an opportunity to learn from and offer support to each other (Jones 1995). Hence, teachers do not need to assess and correct each student's work individually in learning process, but can let students address many linguistic problems themselves, and students can write in a less stressful environment.

Previous studies (see e.g. Dobao 2012, Storch 2005, Aydin and Yildiz 2014) have shown that collaborative writing improves students' writing skills in terms of complexity (i.e. the scope of vocabulary) and grammatical accuracy. In terms of fluency (i.e. the length of a text), individual writers tended to produce as long or even longer texts than collaborative writers. Dobao (2012) concluded in her study that there was no significant improvement in mechanical accuracy (i.e. the use of punctuation marks) of individually and collaboratively written texts. She adds that even though students were discussing punctuation and spelling while writing, such Language Related Episodes, i.e. discussions about the language, were infrequent compared to the ones concerning vocabulary and grammar (Dobao 2012).

To date, collaborative writing in English language learning context has not been thoroughly studied in Estonia. This thesis aims to fill that gap. The main aims of this thesis are to find out if there are any significant differences between students' collaboratively and individually written texts, and if there are any significant differences between the texts

written before and after a collaborative writing task. The research questions of this thesis are as follows:

- Are there any significant differences between individually and collaboratively written texts in terms of complexity of sentences and linguistic accuracy?
- Are there any significant differences between the texts written before and after collaborative writing task in terms of complexity of sentences and linguistic accuracy?

## **2 LITERATURE REVIEW**

### **2.1 Writing in the English language learning context**

Writing skills are important to develop in the English language lesson.

Rao (2007) points out that writing in English as a foreign language classroom is important for the following reasons: firstly, it encourages students to think and organise their ideas; secondly, it improves their ability to summarise, analyse and criticise; and finally, it directs them to think in and reflect on the English language (Rao 2007). Hyland (2003) adds that the ability to write well is seen increasingly essential for becoming successful in the twenty-first century. He suggests that it is because more and more ideas and information are transferred through digital networks in written form (Hyland 2003). Therefore, writing has more benefits than development of the language, and it is, as Hyland suggests, increasingly a more important skill especially in technologically developing world.

For English language students, however, writing seems to be more difficult than speaking. Wray and Lewis (2011) state that talking usually takes place in the form of a dialogue, which provides speakers some prompts about how to proceed. Writers do not receive these prompts and support, which leaves them on their own. In the classroom, a teacher could provide assistance to the students, but it is challenging, because usually there are overwhelmingly more students than teachers in the classroom, and thus it is not always possible to assist all the students sufficiently (Wray and Lewis 2011). In addition, Byrne (1988) brings out that when writing, students have to overcome psychological, cognitive and language-related problems. Firstly, writers do not have the luxury to correct any misinterpretations of thought immediately as speakers have. They have to set themselves into a reader's position and anticipate how a reader (e.g. a teacher) interprets their text. Secondly, in addition to clarity of expression, the writers have to think about how their text is built up in terms of the order of sentences and logic of the text. Finally, writers need to

master a set of sub-skills. These include, but are not limited to, use of correct style, grammar and punctuation skills, also knowledge about the functions of a text, how to form paragraphs, and how to connect paragraphs into a coherent text. All these sub-skills need practice and weaknesses in any of them may undermine a reader's ability to understand the text (Byrne 1988). Therefore, writers need to overcome several challenges in order to be successful. They need the knowledge about the intended reader and require several competences in which they may not be, or in which they may not feel themselves, proficient.

The understanding of what language competences a writer needs in order to be a good writer in English has changed over time. Extensive discussions about language proficiency began in the 1970's when Hymes (1972) opposed Chomsky's (1965) claim that in order to be linguistically competent, one needs to master only grammar, and presented the notion of *communicative competence*, which, in addition to grammatical competence, took the rules of language use into account (Hymes 1972). Later, Canale and Swain (1980) developed their model of communicative competence, which states that in order to succeed in communication in the target language, one needs at least the following competences:

1. Grammatical competence – grammar, vocabulary, language system.
2. Sociolinguistic competence – understanding readers, appropriate use of language in context.
3. Discourse competence - genre and rhetorical patterns for that.
4. Strategic competence – use of various communicative strategies.

Canale and Swain brought out two types of strategy: the strategy that leans primarily towards grammatical competence (e.g. how to paraphrase forgotten grammatical forms in more familiar grammatical structures), and the strategy that is more related to sociolinguistic competence (e.g. how to address a stranger if his or her social status is unknown) (Canale and Swain 1980). This model was especially important, because it was a base, which was

developed further in the following years. Bachman (1990), who developed Canale and Swain's model further, observed language proficiency on a broader scale and suggested his model, which includes language competence (i.e. knowledge about language necessary for communication), strategic competence (i.e. the ability to use language in context), and psychophysiological mechanism (i.e. production of language as physical phenomena). Moreover, the model sets language proficiency into relationship with knowledge of the world and the context in which the language is used (Bachman 1990).

Bachman's model was used and developed further in *Common European Framework of Reference for Languages: Learning, teaching, assessment* (CEFR 2001), in which language proficiency is divided into two broader categories: general competences and communicative language competences. The first set of competences do not constitute language proficiency, but they are necessary for language use, including knowledge about the culture, customs, and norms of the society in which the language is used, and knowledge of differences between interlocutors' cultures. The communicative language competences take the skills of language under closer observation and include three sub-sets of competences: linguistic competence (lexical, grammatical, semantic, phonological, orthographic, and orthoepic competence), sociolinguistic competence (rules of politeness, norms, different registers, dialects, and accents), and pragmatic competence (functional use of language and discourse competence) (CEFR 2001).

Considering all the necessary competences, becoming a proficient writer in English could be challenging for students, especially when, in addition to acquiring the above competences, they have to generate and express their own ideas (Hyland 2003).

However, it is natural that some students in the classroom are more proficient writers in English than the other students are. Students have different learning backgrounds and personalities. They also have different writing experience, aptitudes and motivation. All this

has an effect on how quickly students learn to write well in English. Their mother tongue and experience in using it, particularly in writing, can also play an important role here. For example, there may be occasions when students write in English using some rhetorical and linguistic conventions of their mother tongue that are not transferrable across languages (Hyland 2003). As students have different abilities, aptitudes, and experience in writing, it might be beneficial for all students to have those at high proficiency in English writing together with their less proficient classmates. This suggests the use of collaborative writing techniques.

### **2.3 Collaborative writing**

Collaborative writing is co-authoring of a text by two or more writers (Storch 2013). It has emerged from Vygotsky's (1978) sociocultural theory, which states that as learners are social beings, cognitive development takes place in social interaction (Vygotsky 1978). Allen et al (1987: 70) define collaborative writing as "collaborators producing a shared document, engaging in substantive interaction and shared decision-making power and responsibility for it". Young (2006: 214) expands the definition by stating that collaborative writing is "two or more people interacting socially, sharing skills, making decisions, resolving conflicts, and utilising strategies throughout the writing process to produce a shared document". Therefore, collaborative writing takes place when writers interact with each other constantly and create a single written document in the process. Furthermore, Thorne and Payne (2005) state that when students are writing collaboratively, they are effectively both authors and readers.

Although all writing is collaborative to some extent (e.g. Bruffe 1984), Ede and Lunsford (1990) offer three features of collaborative writing, that distinguish this type from other forms of writing. Firstly, collaborative writers interact with each other in all stages of

writing. This includes generation of ideas and proofreading. Secondly, the writers share responsibility and power over making decisions, and finally, they produce a single written document (Ede and Lunsford 1990). Hence, even though students work collaboratively also during peer review, for instance, it cannot be considered collaborative writing in Ede and Lunsford's terms.

There are also differences between collaborative writing and cooperative writing. Dillenbourg et al (1996) explain that in cooperative writing, authors of a text can also work on a single text, as in collaborative writing, but roles are usually divided, so that each writer is responsible for certain stages. In collaborative writing, such division of roles does not take place, and the writers have shared responsibility for all stages of writing. Some division of labour, however, may take place in collaborative writing as well, but in cooperative writing, the entire writing task is split into sub-tasks, which are later assembled together (Dillenbourg et al 1996). Furthermore, the end result of collaborative writing is produced in shared cognition and cannot be traced back to one individual's contribution (Stahl 2006). Nevertheless, writers may still assign roles for themselves even when they are not directed to do so (Young 2006).

In language learning context, in addition to ideas, collaborative writers share knowledge of vocabulary, grammar and ways of expressing ideas with each other. Hence, students are likely to improve each other's language skills (Storch 2013). For example, Weissberg (2006) points out that collaborative writing, where speaking and writing go hand-in-hand, may be more conducive to language learning than writing alone (Weissberg 2006). Writers engage in the so-called *collaborative dialogue* (Swain 2000), during which they *language*, i.e. they use language to make meaning and discuss the best way to articulate their thoughts or intended meaning. Although *languageing* can also be done with oneself, such language is sub-vocal, not vocalised, and therefore thoughts are not transformed into

artefacts, which could be *language*d even further (Swain 2000). In other words, collaborative writing entails more in it than just writing. When students collaborate during writing, they reflect on the English language and might make its nuances more understandable for themselves with the help from other pupils. This might not happen when writing alone.

Although collaborative writing has been advocated as beneficial for language learners, there are some challenges that both, teachers and students, may face. For example, while collaborating, some students might not agree upon what and how to write in terms of ideas and style. While some researchers have found cognitive conflicts in collaboration beneficial (Allen et al 1987; Ede and Lundsford 1990), it might hinder group collaboration for some groups. For some students, arguing over different viewpoints and styles is a waste of time (Young 2006). Another drawback of collaborative writing might be that some students might take up a role of a “leader” in a group and be unable to work in a team. This might lead to the situation where the “leader” advocates his or her ideas while rejecting others’ contribution. This, in turn, might discourage other members of the group from participating. Some students, in contrast, may contribute too little. There might be students in groups that, for some reason, do not wish to participate, and consequently create a situation in which the responsibility for the text is not equally distributed, as some students work harder than the others (Allen et al 1987; Ede and Lundsford 1990; Young 2006). In addition, if their language proficiency level is not high enough, students might struggle with structuring sentences, which may lead to students’ frustration and poor quality texts (Young 2006).

## **2.4 Previous research on collaborative writing**

An abundance of research has been published about collaborative writing, especially recently when collaborative writing tasks have been done easy to implement with Google Drive and other web-based writing environments. The section below presents and discusses some of the studies conducted on collaborative writing, in particular, the effects that collaborative writing might have on students and the differences between collaboratively and individually written texts.

### **2.4.1 The effects of collaborative writing on students' writing skills**

Although the aim of this thesis is not to gain information about the effects of collaborative writing on foreign language learners' writing skills, it is important to observe these effects in foreign language teaching and learning context. It is necessary to know whether collaborative writing has its merits, and is worth using in the lesson, or not. Studies addressing the effects of collaborative writing have generally used pre-test and post-test setting, where the results of pre-test have been compared to the results of post-tests. Studies conclude that collaborative writing might indeed have a positive effect on foreign language learners' writing skills. For example, Kim (2008) compared students' second language vocabulary acquisition of individual and collaborative tasks using dictogloss and found that pairs scored significantly better than individually working students in vocabulary post-test, which suggests improving effect of collaboration on students' language skills (Kim 2008). In addition, Amniloo (2013), who tested whether or not collaborative writing has positive effect on students' writing skills compared to individual writing, noted a similar effect. She tested null hypothesis via Pearson's correlation analyses between the writings' results of treatment group and control group, which concluded that the writing ability of the treatment group was significantly better than that of the control group (Amniloo 2013). These results

were further supported by Khatib and Meihami (2014), who conducted a research project in which some students of English as a foreign language were assigned to write short essays in small groups (experimental group), and other students had to do the same individually (control group). The first and the last essay were written individually by all students and served as a pre-test and a post-test respectively. The results of the study showed that although the participants were on the same proficiency level at the pre-test essay, the experimental group was significantly better in the post-test (Khatib and Meihami 2014). Jafari and Ansari (2012) conducted a similar study and drew similar conclusions in the study where they compared texts written individually and collaboratively by Iranian EFL students.

Although collaborative writing tends to have positive effects on foreign language learners' writing skills, they may not be evident in writing in mother tongue. For example, Louth et al (1993) used two collaborative writing techniques (interactive and group writing) with college freshman students and compared the results of pre-test and post-test written by students individually. The students wrote in their mother tongue. They did not find collaborative writing techniques to have significant positive effects on students' writing skills (Louth et al 1993).

Another factor that might hinder the effectiveness of collaborative writing on students' writing skills, is time. Tai (2016) concluded in his study that only some dimensions of writing improve through collaborative writing. He conducted a research project using pre-test and post-test design for a single group. The results showed that the students had significantly improved in content and holistic dimensions of writing, but not the others (e.g. grammar and punctuation). Tai suggested that this could be due to short research period, during which the students could not develop all the dimensions sufficiently (Tai 2016). Therefore, in order for collaborative writing to be effective, it may need more time than some scholars (or teachers) could provide.

Studies have also shown that success and effects of collaborative writing tasks might depend on quality of students' discussions. There are numerous studies investigating frequency and nature of student interaction during collaborative writing tasks. Dobao (2012) conducted a study in which the participants were divided into individual writers, pairs and small groups. The latter two were recorded during the entire writing task and Language Related Episodes (LREs) were later identified. LREs are "any part of the dialogue where learners talk about the language they are producing, question their language use, or correct themselves or others" (Swain and Lapkin 2002: 292). In other words, every time the students in Dobao's study talked about the language use, there was a LRE. Dobao noted that groups had more LREs than pairs, and they were more often positively (i.e. correctly) resolved (Dobao 2013). In Kim's (2008) research LREs were also documented, for which the individually working students had to think aloud. The study found that the number of LREs was almost identical in both samples, but he, like Dobao, noticed a higher number of positively resolved LREs in collaborative sample (Kim 2008). Thus, when discussing the language with each other, students get over language-related problems more easily than trying to do it alone.

#### **2.4.2 Collaboratively and individually written texts**

The following section discusses studies that focused on how collaboratively and individually written text differ from each other. Studies comparing collaboratively and individually written texts are somewhat inconclusive. When analysing texts, the scholars presented here have taken three measurable aspects of written texts into account – fluency (i.e. the length of a text), complexity of grammar and vocabulary, and accuracy (i.e. how error-free a text is). Some studies suggest that collaboratively written texts are of better quality than individually written texts in all three aspects of writing, while other studies have shown significant improvement in only one or two aspects.

Overall, comparisons of collaboratively and individually written texts show that collaboratively written texts are significantly more accurate and complex. Storch (2005) conducted a study where he taught two groups of students: the one where students wrote in pairs and the one where students worked individually. He aimed to compare collaboratively and individually written texts in measures of fluency (i.e. the number of clauses per text), accuracy (i.e. the number of error-free clauses) and complexity (i.e. ratio of different type-tokens). To his surprise, the lowest scoring pair work received more points than the highest scoring individually composed text. Moreover, collaboratively written texts were more complex and accurate (Storch 2005). Later, in 2009, Wigglesworth and Storch compared 48 pair-written texts with the same number of individually written texts. The results here, too, showed that the texts written by pairs were significantly more accurate, but, in contrast, this research did not find them being more complex (Wigglesworth and Storch 2009). Dobao (2012) drew similar conclusions in her study about comparison of groups and pairs in collaborative writing tasks.

While the studies above show that collaboratively written texts tend to be more complex and accurate than their individually written counterparts, they also point out that individually written texts are more fluent. This claim, however, is not solid. Yen (2014) conducted a study where he divided the sample into three groups, each with different level of collaboration. All groups had to compile essays in a web-based environment, where writing and conversation was done synchronically. He also drew a conclusion from his study that collaborative writing improves accuracy of a text, but his study contradicts Storch and Wigglesworth by showing that the more collaborative the group is, the more fluent the texts are (Yen 2014).

Although previous studies have not reached full agreement on whether collaboratively written texts are more or less fluent than individually written texts,

collaboratively written texts have been shown to be more accurate and complex. However, although research comparing individually and collaboratively written texts has been done extensively, most of them have observed texts written by different students (e.g. individual writers *vs* groups and pairs *vs* groups). There are fewer studies comparing individually written texts by the same students before and after collaborative writing tasks in terms of fluency, accuracy, and complexity. Also, as Hyland (2000) brought out, different students have different experiences in as well as aptitudes and motivation for writing, which suggests that although the students in the previous studies were at the same proficiency level in English, the results might still have been influenced by the factors that Hyland mentioned. Hence, this thesis aims to fill this void, and compare texts written by the same students before and after a collaborative writing task.

### **3 THE EMIPRICAL STUDY**

#### **3.1 The sample**

The sample for this research was drawn using convenience sampling. Convenience sampling is a sampling method in which the participants of a study are conveniently available. In other words, a researcher draws a sample where and when it is convenient for him or her (Saunders et al 2009). The sample for this study was drawn from a school that is conveniently accessible for the author.

The sample consisted of 13 upper-secondary level students studying in one school in Harjumaa. There were 4 girls and 9 boys in the sample. The age of the students ranged from 16 to 17. The students had been learning English since the third grade, which is for 8 years. At the time of the study, the students learned English at the level of B2.2 by the *Common European Framework of Reference for Languages* (2000). The students agreed to participate in the study and they were aware that they could leave the study any time.

#### **3.2 Procedure**

The data for the study was collected during March and April 2017 in three phases: pre-test, collaborative writing test, and post-test over the course of three weeks. Students did not get feedback on their work until after the end of the post-test. This was necessary to make sure that the students would not perform better in the next task because of the feedback, and thus put the validity of the study at risk. Neither were the students warned about the dates of the tasks beforehand, so that they could not prepare specifically for the tests.

Before the research period, the students were familiarised with collaborative learning. During March, the students engaged in several collaborative learning tasks, like group discussions and brainstorming. They were also taught how to write an argumentative

text. Grammar review lessons necessary for the topic, accompanied by punctuation rules, also took place.

In the pre-test, the students wrote a text on a computer individually using Microsoft Word. The program's built-in automatic spelling and grammar checking mechanism was turned off beforehand. The students were also prohibited from using the Internet or discuss anything with their classmates. The topic of the essay was "Some people say that the newer generation is less intelligent than the older generation." The students were provided with two prompts: "Why do you think they say that?" and "Give reasons." The students were directed to write as much and in as good English as possible in 40 minutes.

Between the first and the second phase, the pre-tests were analysed for measures of sentence complexity and linguistic accuracy. The results were used for group formation in the next phase.

In the second phase, the students were divided into groups of three or four and were instructed to write a text in groups on a topic or situation similar to the pre-test. The groups were mixed-ability groups, i.e. there were students in different proficiency in English in each group according to the results of the pre-tests. Each group contained students who scored high and low in the pre-test. This gave students with a lower score an opportunity to learn from their stronger classmates. It might have also prevented the situation where some groups would be at a significantly higher proficiency in English than the other groups. The students were instructed to write a text on the topic of "Some people say that Estonian school system is old fashioned" in groups with the same prompts as in the pre-test. Each group had one computer at their disposal, which meant that one student in each group had to type in the text, in addition to taking part in discussions with his/her groupmates. Like in case of the pre-test, automatic spelling and grammar checking mechanism was turned off before the

students began writing. Once again, the students had 40 minutes to write as much and in as good English as possible.

In the third phase, the students wrote a text in the same amount of time on the topic of “Some people say that Estonian schools do not prepare their students for independent life” but individually in the same manner and with the same prompts as in the pre-test.

All the texts were analysed after each phase for sentence complexity and linguistic accuracy using the paired samples T-test. The paired samples T-test is used to compare two matched samples. In other words, with this method, the same participants are observed or tested twice, and in this manner two samples at different times are drawn (Urdan 2010).

The quantitative aspects and measures of the analysis were similar to the ones used in the study by Storch (2005), except for fluency, as this aspect was strongly dependent on students’ grasp of the topic at hand and the flow of ideas. The qualitative measures were also not analysed, as they would have gone out of the scope and aims of this thesis.

For measures of sentence complexity, the number of clauses, the number of T-units (Hunt 1965) and the number of words per T-unit were counted. A T-unit in the study is a sentence, i.e. “one main clause with all the subordinate clauses attached to it” (Hunt 1965: 20). Hence, a T-unit can be a simple, a complex, a compound, or a compound-complex sentence. Independent and dependent clauses, also known as subordinate clauses, were also identified and counted, and the ratio of dependent clauses to total number of clauses was calculated. The higher the ratio of dependent clauses to independent clauses, the more complex the texts were.

An independent clause is a type of a clause that can stand on its own. Dependent clause, on the other hand, needs “another clause to form a complete grammatical construction.” (Richards and Schmidt 2010:162). Following the studies by Storch (2005) and Foster et al. (2000), a dependent clause contained a finite or non-finite verb and at least

one subject. Hence, parts of sentences not containing a subject and a verb were not considered as clauses, but phrases.

Linguistic accuracy of the texts was measured by calculating proportions of errors to total number of words, error-free T-units to total T-units, and error-free clauses to total clauses. Errors of grammar, vocabulary, and spelling were calculated separately from errors in punctuation. Errors of grammar included incorrect use of tenses, prepositions, adverbials, conjunctions, articles, quantifiers; missing verbs or objects; and errors in word order and subject-verb agreement. Errors of vocabulary included incorrect choice of words in the context of the text or a sentence.

For all ratios, the results of the all texts were administered into Microsoft Excel spreadsheet, in which the ratios were calculated. The ratios were later inserted into the program SPSS Statistics version 23, where paired samples T-tests were performed to compare the results of the all texts to determine whether sentence complexity and linguistic accuracy of the tasks were significantly different. The comparisons were made between the pre-tests and the collaboratively written texts; the collaboratively written texts and the post-tests; and the pre-tests and the post-tests. The difference in mean values of the texts in comparison was calculated, and the direction of the difference was identified. The value of significance of differences between the two tasks in comparison was calculated and used together with the direction of differences in means to determine whether or not the differences were significant, and which of the two tasks were linguistically more accurate and/or had more complex sentences.

For comparisons between individually and collaboratively written texts, the results of all members of each group were added and subtracted with the number of members in the groups to calculate the averages. This procedure served the purpose of eliminating the

differences in the number of elements when comparing individually and collaboratively written texts.

### 3.3 The results

The following section presents the results of the paired samples T-tests. The comparisons were performed between the pre-tests and the collaborative writing tests, the pre-tests and the post-tests, and the collaborative writing tests and the post-tests. The results are presented in two broader categories – complexity and accuracy. In this chapter the terms *collaboratively written texts*, *collaborative writing tasks*, and *collaborative writing test* are used synonymously.

The results below are presented at Confidence Interval of the Difference of 95%, which means that for statistically significant differences the p-value of the comparisons needs to be 0,05 or less. The results are illustrated by the tables provided by the program, and the following data are provided:

*Mean* – The tables show the difference value of the mean, i.e. how much the mean value of one variable differed from the mean value of another variable.

*Std. Deviation* – Standard Deviation, showing the average value of differences from the mean value, i.e. how far away the values in a variable to the mean value are.

*t-value* – This value compares the means of the sample to the null hypothesis. The bigger the t-value, the less likely the null hypothesis is, and hence, the greater the likelihood of significant differences.

*df* – Degree of Freedom equals  $n - 1$  and shows the possible number of observations while maintaining the possibility of variation. The *n*-value is the number of elements in the sample. In this thesis, the Degree of Freedom is not used in the analysis, as it does not have any significant effect on the results of the thesis.

### 3.3.1 Complexity

Two ratios were compared in terms of complexity: the ratio of words to T-units and the ratio of dependent clauses to total number of clauses. The mean of average number of words per T-unit in the pre-test across the members of each group was approximately 18 words. The same measure for collaboratively written text was approximately 16 words, which is slightly lower than that of the pre-tests. The paired sample T-test gave the significance number of difference  $p= 0.189$ , and hence, as it is greater than  $p= 0.05$ , there is no significant difference in the number of words per T-unit between the pre-test and the collaboratively written text.

On the other hand, there was a significant difference in the ratios of dependent to total number of clauses. The mean of average ratio of dependent clauses to total number of clauses in the pre-test was approximately 0.54. The same measure for the collaborative writing task was approximately 0.37, which in the T-test gave a significant difference ( $t=5.18$ ;  $p= 0.007$ ) between the ratios, but, surprisingly, the students composed significantly more dependent clauses in the pre-test than in the collaborative writing task.

*Table 1.* Differences in mean values between the collaboratively written texts and the averages of the pre-tests.

Paired Differences	Mean	Std. Deviation
Pair 1 Pre-test Groups Words To T-Units Ratio AVG - Coll.test Words To T-Unit Ratio	1,95095	2,75702
Pair 2 Pre-test Groups Dependent To Total Clauses Ratio AVG - Coll.test Dependent To Total Clauses Ratio	,16733	,07226

Table 2. Comparison of the pre-tests and the collaboratively written texts in terms of sentence complexity.

Paired Samples Test		t	df	Sig. (2-tailed)
Pair 1	Pre-test Groups Words To T-Units Ratio AVG - Coll.test Words To T-Unit Ratio	1,582	4	,189
Pair 2	Pre-test Groups Dependent To Total Clauses Ratio AVG - Coll.test Dependent To Total Clauses Ratio	5,178	4	,007

The collaboratively written texts were not significantly more complex than individually written pre-test in terms of the length of sentences. In fact, they were even less complex in terms of the proportion of dependent clauses than the pre-tests.

The comparison of collaboratively written texts and the averages of the post-tests gave similar results. The mean of average of number of words per T-unit in the post-test across the members of each group was 19 words, which is three words per T-unit more than that of the collaborative writing task, but is not significantly different from it ( $t= 2.19$ ;  $p= 0.094$ ). The mean of the ratio of dependent clauses to total number of clauses was approximately 0.44 in the averages of the post-tests, which is significantly greater from the ones of collaboratively written texts ( $t= 2.95$ ;  $p=0.042$ ).

Table 3. Differences in mean values between the collaboratively written texts and the post-tests in terms of sentence complexity.

Paired Differences	Mean	Std. Deviation
Pair 1 Coll.test Words To T-Units Ratio – Post-test Groups Words To T-Units Ratio AVG	-2,62508	2,68645
Pair 2 Coll.test Dependent To Total Clauses Ratio – Post-test Groups Dependent To Total Clauses Ratio AVG	-,07209	,05470

*Table 4.* Comparison of the collaboratively written texts and the posttests in terms of sentence complexity.

Paired Samples Test		t	df	Sig. (2-tailed)
Pair 1	Coll.test Words To T-Units Ratio – Post-test Groups Words To T-Units Ratio AVG	-2,185	4	,094
Pair 2	Coll.test Dependent To Total Clauses Ratio – Post-test Groups Dependent To Total Clauses Ratio AVG	-2,947	4	,042

In conclusion, collaboratively written texts were not significantly more complex than individually written post-test in terms of the length of sentences and were significantly less complex in terms of dependent clauses.

The differences in complexity measures between the pre-tests and the post-tests were also similar. The difference in the number of words per T-unit was not significant ( $t=0.148$ ;  $p=0.884$ ) with the difference in mean of 0,198, but the pre-tests had significantly greater ratio of dependent clauses ( $t=3.759$ ;  $p=0.003$ ) with the difference in means of 0.079.

*Table 5.* Differences in mean values between the pre-test and the post-test in terms of sentence complexity.

Paired Differences		Mean	Std. Deviation
Pair 1	Pre-test Words To T-Units Ratio – Post-test Words To T-Units Ratio	-,19820	4,81231
Pair 2	Pre-test Dependent To Total Clauses Ratio – Post-test Dependent To Total Clauses Ratio	,07930	,07607

Table 6. Comparison of the pre-tests and the post-tests in terms of sentence complexity.

Paired Samples Test		t	df	Sig. (2-tailed)
Pair 1	Pre-test Words To T-Units Ratio – Post-test Words To T-Units Ratio	-,148	12	,884
Pair 2	Pre-test Dependent To Total Clauses Ratio – Post-test Dependent To Total Clauses Ratio	3,759	12	,003

All texts were at the same level of complexity in terms of the number of words in T-units, but the pre-tests and the post-tests were significantly more complex than the collaboratively written texts in terms of the proportion of dependent clauses, and the pre-tests, in turn, had a significantly greater proportion of dependent clauses than the post-tests had.

### 3.3.2 Accuracy

In terms of accuracy of the texts, the ratios of error-free clauses to total number of clauses, error-free T-units to total number of T-units, and errors to the total number of words were compared across all the texts. Accuracy measures of collaboratively written texts were generally not significantly different from those of the pre-tests. The mean of average ratio of error-free clauses to total number of clauses across the members of each group in the pre-test was 0.746, which is slightly lower from the collaborative writing tasks' 0.780 (mean difference 0.040). The difference here, however, is not significantly different ( $t=0.706$ ;  $p=0.519$ ), and hence, the collaboratively written texts did not produce significantly less error-free clauses than the pre-tests.

The differences between the averages of the pre-tests and the results of the collaborative writing task in terms of the ratios of error-free T-units to total number of T-units were also not significant. The differences in means between the ratio of error-free T-units to total number of T-units of the pre-tests and those of the collaboratively written texts

was 0.090 in favour of collaborative tests, i.e. the students produced slightly more error-free T-units in their collaborative writing tasks, but the difference is not significant ( $t= 1.668$ ;  $p=0.171$ ). The difference between the ratios of error-free words to total number of words in the pre-tests and the post-tests is greater ( $t=2.535$ ;  $p=0.064$ ), although the difference is only marginal. In other words, the students produced slightly smaller number of errors in the collaborative writing task than in the pre-tests.

*Table 7.* Differences in mean values between the collaboratively written texts and the averages of the pre-tests in terms of linguistic accuracy.

Paired Differences	Mean	Std. Deviation
Pair 1 Pre-test Groups Error-Free Clause Ratio AVG – Coll.test Error-Free Clause Ratio	-,03398	,10759
Pair 2 Pre-test Groups Error-Free T-Units Ratio AVG – Coll.test Error-Free T-Units Ratio	-,08943	,11991
Pair 3 Pre-test Groups Errors To Words Ratio AVG – Coll.test Errors To Words Ratio	,01323	,01167

*Table 8.* Comparison of the collaboratively written texts and the averages of the pre-tests in terms of linguistic accuracy.

Paired Samples Test	t	df	Sig. (2-tailed)
Pair 1 Pre-test Groups Error-Free Clause Ratio AVG – Coll.test Error-Free Clause Ratio	-,706	4	,519
Pair 2 Pre-test Groups Error-Free T-Units Ratio AVG – Coll.test Error-Free T-Units Ratio	-1,668	4	,171
Pair 3 Pre-test Groups Errors To Words Ratio AVG – Coll.test Errors To Words Ratio	2,535	4	,064

The results show that collaboratively written texts were not significantly different from individually written pre-tests in any of the accuracy measures. Although there were slight differences in favour of collaboratively written texts, they were small.

Comparison of the collaborative writing task and the averages of the post-tests revealed that the latter were slightly, although not significantly, less accurate. The means of

ratios of error-free clauses to total number of clauses in the collaboratively written texts and the averages of individually written post-tests were 0.780 and 0.694 respectively. In other words, 78% of clauses were error-free in the collaborative writing tests, and 69% of clauses were error-free in the post-tests. The paired samples T-test, however, showed that the difference between the two was not significant ( $t= 2.370$ ;  $p=0.077$ ). Similarly, the comparison of the ratios of error-free T-units of the collaborative writing test and those of the post-tests did not yield any significant differences ( $t= 2.533$ ;  $p=0.064$ ), but the collaboratively written texts had marginally more error-free T-units than the post-tests. When comparing the ratios of errors to total number of words of the collaborative writing tasks and the post-tests, the paired samples T-test revealed even less significant differences ( $t= 1.955$ ;  $p=0.122$ ), which means that both collaborative writing test and the post-tests had similar proportion of errors.

*Table 9.* Differences in mean values between the collaboratively written texts and the averages of the post-test in terms of linguistic accuracy.

Paired Differences	Mean	Std. Deviation
Pair 1 Coll.test Error-Free Clause Ratio – Post-test Groups Error-Free Clause Ratio AVG	,08606	,08121
Pair 2 Coll.test Error-Free T-Units Ratio – Post-test Groups Error-Free T-Units Ratio AVG	,15318	,13522
Pair 3 Coll.test Errors To Words Ratio – Post-test Groups Errors To Words Ratio AVG	-,01743	,01994

*Table 10.* Comparison of the collaboratively written texts and the averages of the post-tests in terms of linguistic accuracy.

Paired Samples Test	t	df	Sig. (2-tailed)
Pair 1 Coll.test Error-Free Clause Ratio – Post-test Groups Error-Free Clause Ratio AVG	2,370	4	,077
Pair 2 Coll.test Error-Free T-Units Ratio – Post-test Groups Error-Free T-Units Ratio AVG	2,533	4	,064
Pair 3 Coll.test Errors To Words Ratio – Post-test Grops Errors To Words Ratio AVG	-1,955	4	,122

As shown above, the collaboratively written texts were not significantly different from individually written post-tests in any of the accuracy measures. The post-tests were almost as error-free as the collaboratively written texts.

The comparison of the pre-tests and the post-tests did not yield any significant differences either. The mean value of the ratio of error-free clauses to total number of clauses was 0.714 for the pre-tests and 0.685 for the post-tests with the difference in means of 0.030. The paired samples T-test gave the significance value of differences between the tests of  $p=0.290$ . Therefore, the pre-tests and the post-tests did not significantly differ from each other in terms of the proportion of error-free clauses in the texts.

The differences between the pre-tests and the post-tests were even smaller in terms of the ratios of error-free T-units to total number of T-units. The difference in means of the tests was 0,100 in favour of the pre-tests, but the paired samples T-test did not show any significant differences between the two tests ( $t= 0.271$ ;  $p= 0.791$ ). Therefore, in terms of the proportion of error-free T-units, the pre-tests and the post-tests did not differ from each other.

The greatest difference between the pre-tests and the post-tests in terms of accuracy were the ratios of errors to the total number of words, although, again, not significant. The mean ratio of errors in the pre-tests was 0.521, which was slightly greater than that of the post-tests (0.468). The difference, however, is not significant ( $t= 1.216$ ;  $p=0.247$ ). In other words, the post-tests were not significantly different from the pre-tests in terms of the ratio of the number of errors to the total number of words.

*Table 11.* Differences in mean values between the pre-tests and the post-test in terms of linguistic accuracy.

Paired Differences		Mean	Std. Deviation
Pair 1	Pre-test Error-Free Clause Ratio – Post-test Error-Free Clause Ratio	,02986	,09714
Pair 2	Pre-test Error-Free T-Units Ratio – Post-test Error-Free T-Units Ratio	,01002	,13332
Pair 3	Pre-test Errors To Words Ratio – Post-test Errors To Words Ratio	,00531	,01575

*Table 12.* Comparison of the pre-tests and the post-tests in terms of linguistic accuracy.

Paired Samples Test		t	df	Sig. (2-tailed)
Pair 1	Pre-test Error-Free Clause Ratio – Post-test Error-Free Clause Ratio	1,108	12	,290
Pair 2	Pre-test Error-Free T-Units Ratio – Post-test Error-Free T-Units Ratio	,271	12	,791
Pair 3	Pre-test Errors To Words Ratio – Post-test Errors To Words Ratio	1,216	12	,247

In conclusion, the pre-tests, the post-tests and the collaboratively written texts were not significantly different from each other in terms of accuracy. The greatest, although marginal, differences were between the collaborative writing tasks and the post-tests. In other words, the collaboratively written texts were slightly more accurate than the post-tests.

### 3.4 Discussion

The results of this thesis generally did not show significant differences between the texts produced by the students in terms of accuracy and complexity. There were significant differences in terms of the ratio of dependent clauses to total number of clauses, in which individually written texts had significantly higher proportion of dependent clauses than their collaboratively written counterparts, but the differences were not significant in terms of the total number of words per T-units. The results here contradict the ones of other researchers. This might support the suggestion by Tai (2006) that collaborative writing tasks should be implemented for an extensive period of time to be successful. In this thesis, the students wrote collaboratively only once, which might have caused the insignificance in the differences between individually and collaboratively written texts, as the students might have not got used to collaborative writing as such.

The results also indicate that collaboratively written texts are not always significantly more complex or linguistically accurate than individually written texts. For example, the students in Dobao's (2013) study also wrote collaboratively only once, but her research found significant differences between collaboratively and individually written texts in both, accuracy and complexity. Therefore, the differences must be constituted by something other than collaborative writing itself.

In Dobao's (2013) project, unlike in the research for this thesis, Language Related Episodes were also recorded and analysed. Her study shows that the quality of student interactions might influence the quality, and hence effectiveness, of collaborative writing tasks. Therefore, although students in this study were talking to each other during collaborative writing task, the quality of their discussions might have been poor, which might have resulted in a smaller number of correctly resolved language-related discussions than one might expect. This, in turn, might have had a negative impact on the results of the

collaboratively written texts. That, in fact, might be true, because as Barron (2000) states, it is essential that listening and speaking during collaboration is active. In other words, listeners need to reflect on what they have learned, ask questions, and make new information their own while speakers need to find ways to make their explanations as understandable as possible for other members of the group, including rephrase as necessary (Barron 2000). Therefore, if student interactions included only what to write without any further elaboration, then the complexity and accuracy of collaboratively written texts might have depended on the students who were either the most active or the most proficient in English in the groups. In addition, in this case it may have been unlikely that the less proficient students learned from their more proficient groupmates, which might have constituted insignificance in differences between the pre-test and the post-tests.

The fact that the pre-tests were not significantly different from the post-tests might have also resulted from the short period of implementation of collaborative learning and collaborative writing in the classroom. The students might have needed more time to get used to working and learning together, and, as Johnson and Johnson point out, the teacher might need to teach interpersonal and small-group skills before any collaborative learning task (Johnson and Johnson 1991). All this, however, might take time and consistency, but might have had a great impact on the results of the post-tests, and therefore on the lack of differences between the pre-tests and the post-tests.

As mentioned, the results also showed that the students wrote significantly more complex sentences alone in terms of the proportion of dependent clauses. This might suggest that as the students were used to write alone, they had more time and opportunity to properly formulate their ideas. In case of collaborative writing, the students might have concentrated more on the content, rather than complexity of sentences. This, once more, draws attention to the fact that it might be necessary for the teacher to teach how to collaborate effectively

during collaborative tasks. Working together, however, is an important skill for students' independent life. Moreover, cooperation is a skill that the national curriculum for upper secondary schools considers as schools' responsibility to develop in their students (NC 2014). Therefore, future studies might also concentrate on how much attention schools consciously draw to developing cooperation skills in students in the classroom.

The results of this thesis include only a few measurable elements of a written text. The scope of this study was not as wide as that of the previous studies presented in the thesis. For example, in addition to the measures compared in this thesis, Storch (2005) investigated fluency of texts in his study. He also took qualitative aspects of grammar into account when measuring the values of complexity. None of these were investigated in this thesis. Future research, however, might find significant differences between individually and collaboratively written texts because of the greater number of measurable elements of a text taken into account. In addition, future studies might observe the differences between individually and collaboratively written texts when collaborative writing tasks would be implemented several times, and to determine whether the quality of collaboratively written texts would increase over time. It might also be important to include the quality of student interactions during collaboration into research to determine whether or not this could be the key element in the effectiveness of collaborative writing tasks.

During this study, there were also some visible notions that reach out of the scope of this thesis, and thus were not analysed, but are important to point out for further studies. For example, the most common error in punctuation, besides commas and apostrophes, was *comma splice*, in which two independent clauses are separated by only a comma (Oshima and Hogue 1999). This might indicate that students often do not distinguish, or are not aware of, grammatical differences between English and their mother tongue, because separation of dependent clauses by a comma is a common practice in Estonian. Therefore, it might be

interesting to investigate how much attention the teachers of English draw on those differences.

In addition, the topic of writing did not seem to affect the results of the study in any way. Therefore, it might be that Estonian upper secondary students are able to write equally coherent texts in English on any topic. This phenomenon, however, should also be investigated in future studies.

## 4 CONCLUSION

The main aims of this thesis were to find out if there are any significant differences between students' collaboratively and individually written texts, and if there were any significant differences between the texts written before and after a collaborative writing task in terms of sentence complexity and linguistic accuracy.

The literature review of this thesis argues that the English language learners require several competences to excel in writing, and they also have to overcome multiple challenges that speakers might not need to. In addition, the students have different proficiency in English. They also have different motivation and aptitudes. All of these factors might have an impact on the students' writing skills. Therefore, collaborative writing might be beneficial. When writing collaboratively, students at different proficiency in English may learn from one another about how to formulate and write good texts in English.

Previous studies (see e.g. Amniloo 2013; Dobao 2012) have shown that collaborative writing has a positive effect on foreign language learners' writing skills. The students had considerably better results in the post-tests than in the pre-tests. Moreover, analysis of language-related episodes in students' interactions (see e.g. Dobao 2012) have concluded that while writing collaboratively, students are able to resolve significantly greater number of language-related issues than trying to do it alone.

Collaboratively written texts have also been shown (see e.g. Storch 2005; Wigglesworth and Storch 2009) to be significantly more complex and accurate, although not longer. However, comparisons of collaboratively and individually written texts have been done using texts written by different students. Therefore, as Hyland suggests that students have different motivation, experience and aptitudes, which may affect their writing, this thesis investigated texts written by the same students at different times.

The empirical part of the thesis compared collaboratively and individually written texts written by students, and individually written texts before and after a collaborative writing task with each other using paired samples T-tests.

The results showed no significant differences between collaboratively and individually written texts in terms of sentence complexity or linguistic accuracy. Neither were there significant differences between individually written texts before and after the collaborative writing task. The results imply that in order to be successful, collaborative writing techniques might require a longer time of practice than that of the research period of this thesis allowed. The results might also suggest that the key factor in the effectiveness of collaborative writing might be the quality of students' interaction, rather than collaborative writing itself.

The results also showed that students wrote significantly more dependent clauses alone than in groups. This might suggest that the students were concentrating on formulation of sentences more when writing alone, and on content when writing collaboratively. In addition, the students might have not got used to working together and, consequently, might have not known how to collaborate effectively.

The results of this study could be used for future studies on collaborative writing in Estonian schools. The future studies might determine if the quality of student interactions is what might significantly affect the differences between individually and collaboratively written texts. In addition, future studies could concentrate on the effects of repeated collaborative tasks on the differences between individually and collaboratively written texts.

## REFERENCES

- Allen, Nancy, Dianne Atkinson, Meg Morgan, Teresa Moore and Craig Snow. 1987. What experienced collaborators say about collaborative writing. *Journal of Business and Technical Communication*. 1:2, 70-90.
- Aminloo, Masoumeh Shiri. 2013. The Effect of Collaborative Writing on EFL Learners Writing Ability at Elementary Level. *Journal of Language Teaching and Research*. 4:4, 801-806.
- Aydin, Zeliha and Senem Yildiz. 2014. Using wikis to promote collaborative EFL writing. *Language Learning & Technology*, 18:1, 160-180.
- Bachman, Lyle F. 1990. *Fundamental Considerations in Language Testing*. Oxford: Oxford University Press.
- Barron, Brigid. 2000. Achieving coordination in collaborative problem-solving groups. *Journal of the Learning Sciences*. 9:4, 403-436.
- Bruffe, Kenneth A. 1984. Collaborative Learning and the "Conversation of Mankind". *College English*. 46:7, 635-652.
- Byrne, Donne. 1986. *Teaching Writing Skills*. London: Longman.
- Canale, Michael and Merrill Swain. 1980. Theoretical bases of communicative approaches and to second language teaching and testing. *Applied Linguistics*. 1, 1-47.
- CEFR 2001 = *Common European Framework of Reference for Languages: Learning, teaching, assessment*. 2001. Council of Europe. Available at [http://www.coe.int/t/dg4/linguistic/Source/Framework\\_EN.pdf](http://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf), accessed 13 May 2017.
- Chi, Michelene T. H. 2000. Self-explaining expository texts: The dual processes of general interferences and repairing mental models. In R. Glasier (Ed.), *Advances in*

- instructional psychology: Educational design and cognitive science*, 161-238. Hillsdale, NJ: Erlbaum.
- Chomsky, Noam. 1965. *Aspects of the theory of syntax*. Cambridge, Mass.: MIT Press.
- Dale, Helen. 1994. Collaborative writing interactions in one ninth-grade classroom. *Journal of Educational Research*, 87:6, 334-344.
- Dillenbourg, Pierre, Michael Baker, Agnès Blaye and Claire O'Malley. 1996. The evolution of research on collaborative learning. In E. Spada and P. Reiman (Eds.) *Learning in Humans and Machine: Towards an interdisciplinary learning science*, 189-211. Oxford: Elsevier.
- Dillenbourg, Pierre. 1999. *Collaborative Learning: Cognitive and Computational Approaches. Advances in Learning and Instruction Series*. New York: Elsevier.
- Dobao, Ana Fernández. 2012. Collaborative writing tasks in the L2 classroom: Comparing group, pair, and individual work. *Journal of Second Language Writing*. 21:1, 40-58.
- Ede, Lisa S. and Andrea A. Lunsford. 1990. *Singular texts/plural authors*. Carbondale: Southern Illinois University Press.
- Foster, Pauline, Alan Tonkyn and Gillian Wigglesworth. 2000. Measuring Spoken Language: A Unit for All Reasons. *Applied Linguistics*. 21:3, 354-357.
- Hunt, Kellogg W. 1965. Grammatical structures written at three grade levels. *NCTE Research report No. 3*. Champaign, IL, USA: NCTE.
- Hyland, Ken. 2003. *Second Language Writing*. UK: Cambridge University Press.
- Hymes, Dell H. 1972. On communicative competence. In J.B. Pride and J. Holmes (eds.) *Sociolinguistics*. Harmondworth: Penguin.
- Jafari, Narges and Dariush Nejad Ansari. 2012. The effect of collaboration on Iranian EFL learners' writing accuracy. *International Education Studies*. 5:2, 125-131.

- Johnson, David W. and Roger T Johnson. 1991. *Learning together and alone: Cooperative, competitive and individualistic learning*. Englewood Cliffs, NJ: Prentice Hall.
- Jones, Nathan B. 1995. Using Collaborative Writing Creatively To Teach Reader-Based Prose. Conference speech. Available at <http://eric.ed.gov/?id=ED389206>, accessed March 27, 2017.
- Khatib, Mohammad and Husseid Meihami. 2014. Languaging and Writing Skills: The Effect of Collaborative Writing on EFL Students' Writing Performance. *Advances in Language and Literary Studies*. 6:1, 203-211.
- Kim, Youjin. 2008. The Contribution of Collaborative and Individual Tasks to the Acquisition of L2 Vocabulary. *Modern Language Journal*. 92, 114-130.
- Kriisa, Kristel. 2016. *2016. aasta inglise keele riigieksamist*. Innove. Available at <http://www.innove.ee/et/riigieksamid/riigieksamite-materjalid/riigieksamite-materjalid-2016>, accessed May 15 2017.
- Louth, Richard, Carole McAllister and Hunter A. McAllister. 1993. The Effects of Collaborative Writing Techniques on Freshman Writing and Attitudes. *The Journal of Experimental Education*. 61:3, 215-224.
- NC = *National Curriculum for Upper Secondary Schools*. 2014. Tallinn: Government of the Republic of Estonia. Available at <https://oppekava.innove.ee/gumnaasiumiharidus/>, accessed May 15, 2017
- Noddings, Nel. 1985. Small groups as a setting for research on mathematical problem solving. In E. A. Silver (Ed.), *Teaching and learning mathematical problem solving*, 345-360. Hillsdale, NJ: Erlbaum.
- Oshima, Alice and Ann Hogue. 1999. *Writing Academic English*. New York: Pearson Education

- Rao, Zhenui. 2007. Training in brainstorming and developing writing skills. *English Language Teaching Journal*. 61:2, 100-106.
- Richards, Jack. C and Richard Schmidt. 2010. *Longman Dictionary of Language Teaching and Applied Linguistics*. UK: Pearson Education Limited.
- Saunders, Mark, Adrian Thornhill and Philip Lewis. 2009. *Research methods for Business Students*. UK: Pearson Education Limited
- Stahl, Gerry. 2006. *Group cognition: Computer support for building collaborative knowledge*. Cambridge, MA: MIT Press
- Storch, Neomy. 2005. Collaborative writing: Product, process and students' reflections. *Journal of Second Language Writing*. 14:3, 153-173.
- Storch, Neomy. 2013. *Collaborative Writing in L2 Classrooms*. Multilingual Matters.
- Swain, Merrill. 2000. The output hypothesis and beyond: Mediating acquisition through collaborative dialogue. In J. Lantolf (Ed.), *Sociocultural theory and second language learning*, 97-114. Oxford, UK: Oxford University Press.
- Swain, Merrill and Sharon Lapkin. 2002. Talking it through: two French immersion learners' response to reformulation. *International Journal of Educational Research*. 37:3-4, 285-304.
- Tai, Hung-Cheng. Effects of collaborative online learning on EFL learners' writing performance and self-efficacy. *English Language Teaching*. 9:5, 119-133.
- Thorne, Steven L. and J. Scott Payne. 2005. Evolutionary Trajectories, Intermediated Expression, and Language Education. *CALICO Journal*. 22:3, 371-397.
- Urdan, Timothy C. 2010. *Statistics in Plain English* (Third Edition). New York, London: Routledge
- Vygotsky, Lev Semyonovich. 1978. *Mind in society. The development of higher psychological processes*. Cambridge, Mass: Harvard University Press.

- Weissberg, Robert. 2006. *Connecting speaking & writing in second language writing instruction*. University of Michigan Press.
- Wigglesworth, Gillian and Neomy Storch. 2009. Pairs versus individual writing: Effects on fluency, complexity and accuracy. *Language Testing*, 26, 445-466.
- Wray, David and Maureen Lewis. 2011. The problems and possibilities of non-fiction writing. In Pure Goodwin (ed.). *The Literate Classroom*, 127-135. London, New York: Routledge.
- Yen, Hui-Chin. 2014. Exploring How Collaborative Dialogues Facilitate Synchronous Collaborative Writing. *Language Learning & Technology*. 18:1, 23-37.
- Yong, Mei Fung. 2006. *The nature and dynamics of collaborative writing in a Malaysian tertiary ESL setting*. Unpublished PhD thesis. Massey University, Palmerston North, New Zealand.

## RESÜMEE

TARTU ÜLIKOOL  
ANGLISTIKA OSAKOND

**Ingvar Veidenberg**

**The differences between individually and collaboratively written texts in case of Estonian upper secondary school EFL students.**

**Individuaalselt ja koos kirjutatud tekstide erinevused Eesti gümnaasiumiastme inglise keele õpilaste näitel. (Magistritöö)**

Aasta: 2017

Lehekülgede arv: 42

Käesolev magistritöö vaatlleb kooskirjutamist ning koos ja individuaalselt kirjutatud tekstide erinevusi lausete kompleksuse ja keelelise täpsuse võtmes. Koos ja individuaalselt kirjutatud tekste on omavahel võrreldud palju üle kogu maailma, kuid Eestis on kooskirjutamise alaseid uurimusi vähe tehtud. Samuti on ka üleilmses mastaabis tehtud vähe uurimusi selliselt, kus võrdluse all oleks samade õpilaste poolt kirjutatud tekstid.

Käesoleva uurimuse eesmärk on teada saada, kas koos kirjutatud tekstid on lause ülesehituselt komplekssemad ning keeleliselt täpsemad või mitte.

Töö teoreetiline lähtepunkt arutleb selle üle, et missuguseid oskusi ja pädevusi võib võõrkeeleõppijal kirjutamise juures tarvis minna. Samuti antakse ülevaade kooskirjutamisest üldiselt ning käsitletakse varasemaid kooskirjutamise alaseid uurimusi, mis puudutavad koos ja individuaalselt kirjutatud tekste ning seda, et missugust mõju võib kooskirjutamine õpilaste võõrkeeles kirjutamise oskusele avaldada. Samas on varasemates individuaalselt ja koos kirjutatud tekstide võrdlemise alastes uurimustes võrreldud tekste, mis on kirjutatud erinevate õpilaste poolt samal ajal, mitte samade õpilaste kirjutatud erinevatel aegadel. Käesolev uurimus proovib selle tühimiku täita.

Töö empiiriline osa võrdleb individuaalselt kirjutatud ning koos kirjutatud tekste omavahel.

Uurimuses osales 13 gümnaasiumiastme inglise keele õpilast, kes kirjutasiid ühe teksti koos gruppides ning kaks teksti individuaalselt – ühe enne ning teise pärast kooskirjutamist. Tulemusi võrreldi kasutades sõltuvate valimitega T-testi, mille jooksul määratleti tekstide erinevuste statistiline olulisus.

Tulemustest nähtus, et koos ja individuaalselt kirjutatud tekstid üldiselt ei erinenud oluliselt üksteisest ei lausete kompleksuse ega keelelise täpsuse osas. Ainus oluline erinevus seisnes selles, et individuaalselt kirjutatud tekstid olid lausete ülesehituselt komplekssemad kõrvallausete ja pealausete suhtarvu poolest. Tulemustest järeldub, et erinevalt varasemates uurimustes ilmnenust ei pruugi koos kirjutatud tekstid olla ei komplekssemad ega keeleliselt täpsemad. Seega võisid varasemates uurimustes ilmnenud olulised erinevused koos ja individuaalselt kirjutatud tekstide vahel tuleneda millestki muust kui kooskirjutamisest endast. Käesolev uurimus jätab aga selle väite edasiste uurimuste jaoks.

Märksõnad: inglise keel, võõrkeeleõpe, kooskirjutamine, EFL, collaborative writing

**Lihtlitsents lõputöö reprodutseerimiseks ja lõputöö üldsusele kättesaadavaks tegemiseks**

Mina, \_\_\_\_\_ **Ingvar Veidenberg** \_\_\_\_\_,  
(*autori nimi*)

1. annan Tartu Ülikoolile tasuta loa (lihtlitsentsi) enda loodud teose  
\_\_\_\_\_ **The differences between individually and collaboratively written texts in case of  
Estonian upper secondary school EFL students / Individuaalselt ja koos kirjutatud  
tekstide erinevus Eesti gümnaasiumiastme inglise keele õpilaste näitel** \_\_\_\_\_,  
(*lõputöö pealkiri*)

mille juhendaja on \_\_\_\_\_ **Natalja Zagura** \_\_\_\_\_,  
(*juhendaja nimi*)

- 1.1.reprodutseerimiseks säilitamise ja üldsusele kättesaadavaks tegemise eesmärgil, sealhulgas digitaalarhiivi DSpace-is lisamise eesmärgil kuni autoriõiguse kehtivuse tähtaja lõppemiseni;
- 1.2.üldsusele kättesaadavaks tegemiseks Tartu Ülikooli veebikeskkonna kaudu, sealhulgas digitaalarhiivi DSpace'i kaudu kuni autoriõiguse kehtivuse tähtaja lõppemiseni.
2. olen teadlik, et punktis 1 nimetatud õigused jäävad alles ka autorile.
3. kinnitan, et lihtlitsentsi andmisega ei rikuta teiste isikute intellektuaalomandi ega isikuandmete kaitse seadusest tulenevaid õigusi.

Tartus, **15.05.2017**