Stammering, Stuttering, and Slips of the Tongue:

The Impact of Foreign Language Anxiety on L2 Fluency of Dutch L2 English Learners

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Abstract

Foreign language anxiety is a type of anxiety that is tied to foreign language learning settings. In the literature, there are mixed findings about the debilitative effect of foreign language anxiety on L2 performance and L2 fluency. Moreover, it is unclear how foreign language anxiety affects L2 speech processing. The following study investigates the effect of foreign language anxiety on L1 Dutch L2 English learners' fluency. By means of an experiment, the L2 learners performed two speaking tasks in both a high and a low-anxiety condition. Their L2 utterance fluency was explored quantitatively by means of temporal measures, whereas their cognitive fluency was explored qualitatively with stimulated recalls. In the high-anxiety condition, the L2 learners reported that they felt more anxious and judged their performance as lower. However, there was no difference in L2 utterance fluency between the conditions. The stimulated recalls did reveal a difference in the number and quality of processing issues between the anxiety conditions. Therefore, the exact target of foreign language anxiety in L2 learners remains obscure and it is fruitful to further explore its effect in L2 performance and L2 learners and find successful implementations to reduce foreign language anxiety in the classroom.

Keywords: foreign language anxiety, L2 learner, L2 utterance fluency, L2 cognitive fluency, stimulated recall

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1. Introduction

When I was doing my internship to become a secondary school English teacher, I learned a lot about myself and my students. A student of mine, Emma[1], showed a very interesting and inconsistent pattern in her L2 performance. Emma used to participate very well in class during peer activities. She loved talking to her neighbours and doing English assignments but whenever I asked her to explain answers or recapitulate what conclusions she and her partner reached in her L2, she struggled to find the words to explain it. Of course, speaking in class is a stressful task that can put a lot of pressure on a teenager, so I did not think too much about it.

However, Emma showed more interesting behaviour regarding her L2 performance. I regularly checked students' written work in class and Emma consistently did well. Grammar and vocabulary exercises and written assignments went well. During class, I would check exercises orally with my group and Emma never hesitated giving answers. That being said, when Emma would do a written test, she would not perform well: she would not note down lexical items on vocabulary tests and forgot grammatical rules. As a result, even though I knew she could do well on tests, as I had seen her excelling in class exercises, she repeatedly failed them.

I decided to talk to my supervisor. He recognised the things I told him about Emma but he did not think Emma suffered from test anxiety: on listening tests she did well and during meetings, other colleagues did not notice this behaviour. Her maths teacher, who was also her tutor, was surprised to hear this about Emma. There were other students in the group that were more anxious and more likely to show this behaviour. Eventually, I carefully

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[1]The case study of my student Emma is based on a real student, yet I have used a pseudonym to ensure her privacy. Moreover, some characteristics are based on my personal experiences with other students during my internship and teaching.

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engaged Emma in a little conversation. I asked her how she experienced the English classes and the way they were taught. I also asked her what happened during her last test. Emma answered that she liked the English classes but during tests she often completely blanks. She was quite agitated, as she explained that she studied extra hard and was even familiar with the test material during class.

Emma is not anxious, does not suffer from test anxiety in other subjects and is very extrovert and socially engaged with peers. Yet, in a foreign language learning setting, such as her English class, she ´blacks out´ when she tries to produce in her L2 English, especially towards her teacher. Emma is not a unique case. In fact, psycholinguistic and second language learning literature have studied this type of anxious behaviour for several decades now. Scovel (1978) was the first to point out that there is a type of anxiety directly related to language learning and the language learning setting that can be distinguished from other types of anxiety, such as test anxiety or trait anxiety.

Subsequently, the literature reached a consensus about the multicomponentiality of anxiety and researchers became preoccupied with disentangling the facets of the construct. In second language learning literature, the situation-specific foreign language learning anxiety was labelled foreign language anxiety (henceforth FLA) by Horwitz, Horwitz and Cope (1986). Although the field has adopted FLA and its broad definition, important debates about the effects of FLA on L2 learners and their L2 performance remain. In practice, it is complicated to disentangle FLA from other types of anxiety, as they are and their interrelations with each other are obscure (Huang, 2018).

However, recent developments in the field of psycholinguistics and neurolinguistics with regards to experimental methods have proven promising for studying FLA and the impact on L2 performance. Models and theories have been explored and updated and the facets of L2 proficiency have been further operationalised in the literature (Segalowitz, 2010).

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Since a significant body of literature has contributed to the operationlisation of L2 proficiency and to the measuring of L2 proficiency, we could potentially explore the underlying cognitive processes of L2 proficiency better. Psycholinguistic models can be tested more adequately and we can gain more insights about underlying processes of L2 performance.

Tapping into underlying processes and the effect of anxiety on L2 performance have implications for didactics as well as pedagogy. There are many factors that impact the classroom setting and teaching methods and teaching styles have changed dramatically over the years. Teaching consists of explicit instruction, inductive and interactive teaching methods. Moreover, the traditional teacher is an outdated concept: teachers are now both mentors, coaches and educators. As a result, the classroom climate has changed, as the teacher's practice now focuses on reducing stress and pressure on the students. A study by Jiang and Dewaele (2019) exemplifies this, as they found that foreign language enjoyment in Chinese EFL learners could be attributed to teacher-related variables, whereas foreign language classroom anxiety was more strongly predicted by learner-internal variables. In other words, if we have changed our teaching methods and our teaching styles but we do not see a significant reduction of FLA, we should shift our focus to the foreign language and the L2 learners. To date, we know that FLA is a type of anxiety that differs from test anxiety or trait anxiety. It is specific to the foreign classroom learning situation and hinders performance in the L2 or foreign language. There are a lot of 'Emmas' in the wider worlds who experience this. Yet, there is a gap in the literature in regard to how FLA is pronounced in L2 performance and what underlying cognitive processes are affected.

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2. Theoretical Framework

2.1 L2 Performance and L2 Fluency

Before delving into how foreign language anxiety (FLA) impacts L2 performance, it is imperative to first review the literature on L2 performance, L2 proficiency, L2 processing, and FLA first. It should also be noted that only recently has more consensus about the operationalisation of L2 proficiency and its relationship with L2 fluency been generated. Lennon (1990) distinguishes two definitions for fluency, namely the broad and the narrow sense. The broad sense of fluency refers to general oral proficiency, whereas the narrow sense treats fluency as a component of oral proficiency. In the current study, I will adopt Lennon's narrow definition as well as Segalowitz's (2010) operationalisation. Among other things, fluency is often the most prominent aspect that we can directly perceive as hearers in L2 oral performance. In fact, from a cognitive point of view, fluency is a display of ease of production and efficient, automatic language processing (Kormos, 2006; Segalowitz, 2010). Moreover, Kormos (2006) states that "understanding how one produces speech in an L2 is highly important in order to aid the teaching of this skill" (xvii). Thus, L2 fluency is closely connected to L2 proficiency and many studies have argued that L2 fluency reflects L2 learners' proficiency (De Jong, Steinel, Florijn, Schoonen, & Hulstijn, 2012, 2013; Mak, 2011).

Based on a review of the literature, Segalowitz breaks up fluency into three subdomains: cognitive fluency, utterance fluency, and perceived fluency. He explains that cognitive fluency involves the speaker's ability to efficiently carry out underlying cognitive processes that enable producing speech (2010: 48). First, cognitive fluency represents a speaker's L2 knowledge and processing abilities. Second, we can measure utterance fluency in an utterance. This fluency dimension has been addressed often in the literature when operationalising and quantitatively exploring speech characteristics, such as speech rate,

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pausing, and dysfluencies (Segalowitz, 2010: 48) (for an overview of measures of fluency, see Kormos, 2006: 163). Third, perceived fluency encompasses inferences made by listeners based on their perceptions of a speaker or speech sample (Segalowitz, 2010: 48-9).

Many studies have measured fluency based on subjectivity by hearers (i.e. perceived fluency), whereas fluency has proven to be operationalised effectively quantitatively (i.e. utterance fluency) (De Jong et al, 2012, 2013; Kormos, 2006; Segalowitz, 2010). This and the fact that fluency can be divided up in three domains, makes it a clearly defined and measurable construct in second language learning research. Combining all three dimensions can potentially put different perspectives on L2 speech and L2 learners' performance. Taking De Jong et al. (2012) as an example, investigating the relation between cognitive fluency and utterance fluency can help gain insights about how a speaker plans and executes their speech effectively. Fluency as a part of L2 proficiency reflects L2 learners' ability to mobilise their linguistic knowledge quickly and thus the cognitive processes involved in L2 speech production.

A study by Kahng (2014) explored and found a relation between L2 proficiency and L2 fluency. A quantitative analysis of L2 utterance fluency measures illustrated that dysfluencies, such as pausing within clauses reflect processing difficulties in speech production. These processing difficulties became evident through a qualitative study of stimulated recalls with a subset of the L2 speakers in his study. This qualitative aspect of her study is crucial to gain insights regarding the underlying processes in the participants' L2 speaking production. Kahng has established a comprehensive study of L2 fluency based on utterance fluency and cognitive fluency that is both quantitative and qualitative in nature. Moreover, she found that higher proficiency learners were more automatized in speaking and reported on different cognitive processes during their performance than lower proficiency learners. Kahng concludes that it is not clear which processing stages in L2 speech production

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were involved at different proficiency levels. However, she pioneered in exploring utterance fluency and cognitive fluency with both quantitative and qualitative analyses and showed their explanatory power in L2 fluency research.

2.2 Explicit L2 Knowledge

When learning a second language, learners typically receive formal instruction and compile a body of knowledge specifically on their L2. How this works exactly and what kind of knowledge learners acquire is relatively unclear. In the field of second language learning, there is a lot of division regarding language learning theories. Generativists and connectionists are often opposites. However, most theories include explicit and implicit L2 knowledge and there is a consensus about the distinction between the two (Ellis, 2005: 143). Ellis (2005) states that explicit L2 knowledge is generally the conscious knowledge of L2 learners about their L2. It includes metalinguistic knowledge and results in the ability to analyse one's own L2. In addition, Williams (2009) explains that implicit L2 knowledge can result in explicit L2 knowledge and vice versa, as learners can automatize explicit L2 knowledge but they are not able to also become conscious about automatized implicit L2 knowledge.

Ellis (2005) lists the characteristics of both implicit and explicit L2 knowledge in his article and concludes the following: explicit L2 knowledge is stored as declarative knowledge and consists of rules, fragments, formulaic language, and examples. It is available to conscious awareness and it is learned intentionally. It is accessible through controlled processing and can be verbalized by learners. Also, explicit L2 knowledge can be acquired at any age. Moreover, it is often imprecise, inaccurate, and inconsistent, as access to it varies in different linguistic tasks. Implicit L2 knowledge, on the other hand, is stored as procedural knowledge, fully automatized, non-verbalizable, and mostly intuitive. It is more reliable than explicit L2 knowledge, as it is more stable and consistent, and less prone to decay or change

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over time.

In his study, Ellis (2005) investigated both knowledge constructs and measured them based on the characteristics mentioned above. Twenty native speakers and 91 L2 English learners completed a battery of tests that measured their knowledge of 17 English grammatical structures. These tests drew differentially on various L2 knowledge systems. Ellis (2005) found that tests of explicit L2 knowledge were strongly related to the participants' use of metalinguistic knowledge in an untimed grammatical judgement task. Moreover, time-pressured tasks were more strongly related to implicit L2 knowledge, as learners presumably drew on their automatized intuitive implicit L2 knowledge system. Yet, it must be noted that the time pressure induced "random behavior" (Ellis, 2005: 164) that might not be solely related to the tapping into knowledge systems but also other factors, such as stress and confidence. Moreover, Ellis's (2005) study concluded that virtually all tasks elicited both kinds of knowledge systems to some extent. Therefore, a full dissociation between the explicit and implicit L2 knowledge is not yet possible.

In a later section, I will outline the effect of FLA on L2 processing. To date, it is unclear what knowledge system or which processing stage during L2 speech processing FLA targets and affects. Therefore, I will first review Ullman's neurocognitive language processing model in light of second language learning theories.

2.3 Neurocognitive Models and L2 Processing

Ullman's declarative/procedural model (2001b, 2004) (henceforth DP model) is the most recent and most used model for language processing. This model postulates that "the declarative and procedural memory systems underlie the learning, representation, and use of aspects of lexical and grammatical knowledge, respectively" (2001b: 106). Moreover, Ullman's model incorporates research about L2 learning and suggests that adult L2 learners rely more on declarative memory for both lexical and grammatical knowledge. Unlike L1

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speakers, adult or sequential L2 learners have difficulty learning grammatical computations that build on procedural memory. Ullman concludes that the declarative and procedural memory systems obtain different roles in language learning over time. Practice in the L2 enables learners' grammatical knowledge to become proceduralized (2004: 256).

Kormos (2006) states that in the course of second language learning, linguistic knowledge, such as syntactic knowledge is first stored as declarative knowledge and can become automatized and stored differently through the process of proceduralization (p. 157). If L2 learners have automatized syntactic encoding processes, have created a database of formulaic language, and have deduced roles from these chunks, their speech becomes fluent. Thus, development of fluency hinges on automatization and learning of these processes.

Segalowitz (2010) adds another dimension to cognitive processing related to L2 learning and L2 fluency: attention. The L2 processes underlying cognitive fluency mostly depend on attention-based processing, stability and flexibility of processing. Thus, general cognitive control skills are important for language-related processing that make up cognitive fluency and underlie L2 utterance fluency. Any disturbances and/or poor control of attention can result in lower L2 performance by L2 learners (Segalowitz, 2010: 103). As FLA directs attention and awareness, it may impede access to explicit L2 knowledge, since this is controlled and consciously tapped into (Ellis, 2005; MacIntyre & Gardner, 1994).

2.4 Foreign Language Anxiety

The first researcher who distinguished a type of anxiety that is directly related to (second) language learning was Thomas Scovel (1978). He tried to untangle the multifaceted construct of anxiety and established that this type of anxiety was situation-specific and tied to a foreign language learning setting. SLA research has adopted his characterization ever since (Horwitz, 2010; MacIntyre, 2017; MacIntyre & Gardner, 1994; Mak, 2011; Pérez Castillejo, 2019; Tóth, 2012, 2015). The current study will also use this definition. Moreover, a

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questionnaire was developed to target this phenomenon among L2 learners: the Foreign

Language Classroom Anxiety Scale (FLCAS) (Horwitz et al., 1986; Horwitz, 1986).

Nevertheless, FLA is still under a lot of debate. Though FLA is generally negatively

associated with L2 performance (see review by Teimouri, Goetze, & Plonsky, 2018), the

nature of the impact of FLA on L2 performance, as well as its connection to other types of

anxiety and learners' individual traits remain obscure. Huang (2018) has modelled the

relationships between test, trait, language, and state anxiety and L2 performance. He found

that language anxiety and trait anxiety have a direct effect on state anxiety, which in turn

affects L2 performance. Additionally, Huang concludes the following:

> [...] trait anxiety significantly and substantially affected the other three anxiety variables,
> suggesting that higher levels of trait anxiety would predispose test-takers to the tendency
> of experiencing stronger levels of situation-specific anxieties such as test anxiety and
> language anxiety and heightened degrees of state anxiety. (p. 50)

Thus, Huang's study illustrates the influence of trait anxiety on all other anxieties, and

therefore the complexity of the interrelations between different types of anxiety involved in

L2 performance.

However, FLA remains a situation-specific anxiety that can be targeted with the

FLCAS, for instance. The exact target and manifestation of FLA during L2 performance

remains obscured: "The potential effects of language anxiety on cognitive processing in the

second language appear pervasive and may be quite subtle" (MacIntyre & Gardner, 1994). In

their study, MacIntyre and Gardner (1994) further conclude that language anxiety influences

the input, processing and output stages of cognitive processing for L2 performance. The

participants in their study performed tasks that tapped into comprehension, linguistic

knowledge, and speaking skills. They found that anxious students had attentional problems

with the input they received and that these students needed more time to perform better in their L2. Lastly, they concluded that language anxiety interferes with explicit L2 item retrieval from memory (MacIntryre & Garnder, 1994: 298-299). Thus, it is interesting to manipulate anxiety and study the target and effect of FLA on L2 performance in a different way than earlier studies that distinguished between anxious and non-anxious participants.

2.5 FLA and L2 Speaking Performance

L2 oral performance has been a central topic that has been investigated alongside language anxiety. A study by Tóth (2012) showed that the degree of FLA correlates negatively with L2 speaking performance both through subjective ratings and speech sample analyses. Tóth states that fluency was the most discernible measure for L2 performance in relation to FLA (p. 1175). In her 2015 paper, Tóth investigated the relationship between FLA and L2 performance further, also taking into account the effect of linguistic aptitude differences in L2 learners. The negative relationship between FLA and L2 performance was replicated, whereas no significant correlations were found between FLA and language aptitude scores. Therefore, FLA is neither a simple manifestation of linguistic aptitude differences, nor a confound in "the anxiety-achievement relationship" (Tóth, 2015: 161).

Moreover, Perez Castillejo (2019) reported that FLA measured through the FLCAS serves as a better predictor for L2 speaking fluency measures than learners' overall oral proficiency (p. 337). Her correlational and regression analyses of FLCAS data indicated that anxiety predicted the utterance measures, whereas proficiency did not. Thus, many studies investigating the relationship between FLA and L2 oral performance found a negative relationship and a predicative power of FLA on utterance fluency measures. However, the effect of FLA has not been investigated on all three fluency dimensions, as cognitive fluency was not explored in the studies mentioned above.

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2.6 FLA and L2 Learners

Huang's (2018) study illustrates that L2 learners' individual traits play a significant role in L2 performance. Moreover, Segalowitz (2010) highlights that sociolinguistic factors that come into play in an L2 learner's learning ability and fluency: "L2 users have felt experiences related to their sense of self; languages possess affordances (resources) that make possible the promotion of the interests of the self; and fluency development requires exposure to psycholinguistically appropriate learning conditions" (2010: 128). Hence, individual factors, such as the construct Willingness to Communicate (henceforth WTC), which Segalowitz includes in the L2 learner's sense of self and motivation (2010), should be incorporated and investigated as well. This individual trait is linked to self-confidence and is susceptible to situational contexts (MacIntyre et al., 1998). Moreover WTC is in part a personal and stable trait, at least in the L1, as it can vary in different situations in a second language (MacIntyre et al., 1998). This is illustrated by Van Batenburg et al. (2019), who investigated affective factors, such as WTC, self-confidence, and enjoyment of EFL oral interaction in different instructional approaches. They concluded that information gap tasks are useful in foreign language classroom contexts, since learners' self-confidence increased.

Wood (2016) examined the relation between L2 speech fluency and WTC, as WTC is still under-investigated in the literature. Participants performed picture description tasks and immediately rated their WTC when viewing their recording. Lastly, each participant did a stimulated recall to comment on their recordings. The study concluded that WTC and fluency are in a dynamic relationship that can change in different directions over time even during speech tasks (p. 25). What is more, Wood (2016) draws attention to the fact that the development of WTC hinged on the native speaker interlocutor. Wood (2016) states that "[…] they [the participants] interpreted the silence of an interlocutor to mean that they were performing worse than they had expected, and they were relieved when the speech experience

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drew to a close" (p. 27). As such, he emphasises the complexity of factors involved in L2 speaking that are inherent to a speaker but also revolve around external factors.

In sum, there are many affective factors that influence an L2 speaker's oral performance. FLA has been discussed as a situation-specific type of anxiety that impacts L2 oral performance negatively. However, MacIntyre (2017) emphasises the need for more experimental research to see how anxiety and L2 proficiency interact and to further scrutinise the measurement of FLA and L2 proficiency. L2 oral proficiency is apt for quantitative measurement and susceptible to affective factors such as WTC and FLA. Moreover, stimulated recall could qualitatively capture underlying cognitive processes during L2 production but also pick up on individual traits. By means of this method, we could gather more information about the target of FLA based on L2 speakers' responses and derive through these at the knowledge systems that were accessed.

2.7 Current study

The current study sets out to gain more insights about the impact of FLA on the underlying cognitive processes during L2 oral performance. Teimouri et al. (2018) have shown in their meta-analysis that FLA and L2 performance are negatively associated. However, little is known about its impact on cognitive processes during L2 speech production. This paper will explore what the effect of FLA is on L2 fluency in Dutch L2 learners of English both quantitatively and qualitatively.

In a within-subjects configuration, I will study L2 fluency in a high-anxiety condition and a low-anxiety condition. Utterance fluency will be studied quantitatively by means of temporal measures, whereas cognitive fluency will be measured qualitatively with stimulated recalls. Furthermore, participants will do self-assessments on their L2 performances, which will result in (self-)perceived fluency measures in both conditions as well.

The stimulated recalls will elicit L2 learners' responses and reflections about their

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experiences and processing difficulties during speaking. Therefore, this paper looks at both the consequences of processing difficulties and the underlying cognitive processes. In addition, the within-subjects configuration will reduce subject variability and confounding factors such as trait anxiety and WTC. As the high-anxiety condition with a near-native speaking interlocutor will be constant for all participants, the effect of WTC will be neutralized in the analysis. Additionally, since every participant will be compared to themselves in each condition, personal traits will be neutralized as well. By means of a questionnaire, participants will reflect upon the difference between the high-anxiety and the low-anxiety condition. As such, this study will evaluate whether this anxiety manipulation will appear and whether FLA becomes apparent.

This study assumes that in the low-anxiety condition, participants will be more fluent and run into fewer processing difficulties than in a high-anxiety condition. FLA interferes with attentional resources and therefore interferes with cognitive processes during L2 performance (Ellis, 2005; MacIntyre & Gardner, 1994; Segalowitz, 2010; Ullman, 2001b, 2004). Furthermore, based on the DP model, I predict that the sample of this study, Dutch subsequent L2 learners of English, have higher levels of explicit L2 knowledge and rely more on their declarative memory for their L2. Moreover, they have received explicit instruction about their L2 during their L2 classes. FLA will therefore impede L2 learners to access their explicit L2 knowledge in their declarative memory. However, another possibility is that FLA causes L2 learners to tap into their implicit L2 knowledge. Ellis (2005) argued that L2 learners that lack implicit L2 knowledge underperform in time-pressured tests, as this pressure will prevent them from tapping into their explicit L2 knowledge (p. 168). FLA may therefore block accessibility of explicit L2 knowledge as a result of hindering attention and cause L2 learners to use their underdeveloped implicit L2 knowledge. Qualitative examination of stimulated recall responses might help distinguish between the type of

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knowledge that was used during L2 oral performance. Explicit L2 knowledge is verbalizable, form focused and consciously attended to, whereas implicit L2 knowledge is automatic and message focused.

The remainder of this thesis will be as follows: the next section will discuss the methodology with the procedures for both the quantitative and qualitative analyses and the temporal measures used for operationalising utterance fluency. Then the results of both analyses will be presented. In the discussion, both analyses will be discussed and related to one another. Lastly, I will conclude this paper, underline some limitations, and make suggestions for future research.

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3. Methodology

3.1 Participants

Seventeen Dutch L2 learners of English took part in this study (males = 10, females = 7). Their mean age was 15.65 years (SD=0.79). They were in their fourth year of secondary school at pre-university level. One student reported an L1 Polish and one student reported an L1 English, but both learned Dutch before the age of 4 and spoke Dutch at a near-native level. Therefore, all these students were considered native speakers of Dutch and thus included in the data sample. The students started learning English at a mean age of 7.97 years (SD = 3.61) with on average 7.12 years of exposure (SD = 3.44). From the standard deviations, it can be assumed that there is quite some variation within the current sample, and that probably the acquisition of their L2 happened both explicitly in the foreign language classroom and implicitly through (social) media platforms, such as YouTube, Netflix, Instagram, etc.

All participants are students at the same school and have the same English teacher. Her teaching method is mostly explicit instruction and the spoken language in class is English only. Their English teacher interacts a lot with her students and engages all of the students during her classes in English. The coursebook Talent is mostly for the English classes in this grade (Cambridge University Press, 2019).

The students' general English proficiency was at CEFR B2 level (Council of Europe, 2004) according to their teacher.

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3.2 Materials

Altogether, the participants were asked to do two speaking tasks, fill out reflection questions for both of these tasks and a background questionnaire in order to complete the entire experiment.

3.2.1 Speaking tasks

The two speaking tasks used in this study were derived from the ones used for building the Leiden Learner Corpus. The tasks were interactive in nature and distributed through Qualtrics (Qualtrics, Provo, 2018). The first speaking task asked participants to compare three strategies for studying. The second speaking task was a scene building exercise. Participants both saw an outcome picture (i.e. coffee being spilled) and each had different pictures that they should use to tell a story that led to the same outcome. The speaking tasks are attached in appendix C.

Since the speaking tasks worked with pictures, there was little chance of lexical priming. The interactive tasks made use of everyday situations and topics, i.e. involving coffee being spilled and studying styles that could be done as simply or elaborately as the participants wanted. Therefore, the speaking tasks were level independent and task complexity would not pose a confound in speaking performance. Lastly, the order of the speaking tasks were counterbalanced across participants for the anxiety conditions.

3.2.2 Background questionnaire

The background questionnaire is a shortened LEAP-Q questionnaire (Blumenfeld & Kaushanskaya, 2007) (Appendix E).

3.2.3 Consent form

Since the participants in this study were underage students, parental consent was obtained through the secondary school. The participants and their parents were all informed

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about the current research in two letters (appendices A and B). In that manner, parents were able to pose questions and object to their children taking part. Moreover, a consent form was embedded in the Qualtrics survey for the speaking tasks. It explained that the students participated in a study on a voluntary basis, that their privacy was taken seriously, that all procedures were also communicated about with the school, and that they could choose to cease participation at any given time during the experiment.

3.2.4 Adjusted FLCAS

The Qualtrics survey contained an adjusted FLCAS (Horwitz et al., 1986; Horwitz, 1986) that would obtain information about perceived anxiety levels by all participants in both experimental conditions. Participants needed to indicate on a five-point Likert scale whether they *completely disagreed, disagreed, were neutral, agreed,* or *strongly agreed* with the statements, such as "I felt insecure when I was speaking in English" and "I felt at ease during the speaking task". In addition, the questionnaire included a question about their own perceived performance. To minimise the effect of participants becoming aware of the research topic, the questions were called reflection questions. Moreover, all questions asked about the speaker's experience while speaking in English and not generally about the English classroom setting or teacher interaction. The reason for this is that participants had to fill out the reflection questions twice based on the just performed tasks. Too many questions during the experiment might be too laborious and might give away the topic of interest: FLA. As a result, I included a fraction of the 33-item FLCAS survey, namely 9 questions. For the sake of comprehensibility, the reflection questions were asked in Dutch. The reflection questions can be found in appendix D.

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3.3 Procedure

3.3.1 Speaking tasks in Qualtrics

Before commencing with the experiment, the experimenter and two students joined a videocall in Microsoft Teams and carried out sound checks in the Qualtrics survey. As the experimenter, I supervised and guided the students through the entire procedure via Microsoft Teams. In that manner, unclarities could be solved immediately and we all walked through the survey at the same pace. When a participant did not conduct any speaking task, i.e. when their peer was doing a speaking task with the experimenter, they were asked to hang up and were later invited to join the videocall again.

Firstly, participants performed a speaking task either with a peer or with the researcher. After the speaking task, participants filled out the adjusted FLCAS. Then, the other speaking task was performed with the other interlocutor followed by the questionnaire.

Students were told that the speaking task with the experimenter would be graded, whereas the one with the peer was for practice and did not count as much for their overall grade. That is, the speaking task with the experimenter would impact the grade, the practice task could only influence the grade minimally: a worse performance would lead to a slight deduction and a better performance to a slight bonus. The experimenter interacted minimally with the student and used little to none supportive fillers or hedges.

Students were asked to speak for a couple of minutes. Within the Qualtrics survey, there was a time constraint of five minutes for both speaking tasks. In total, the whole procedure took approximately 45 minutes per duo. In addition, all students were reassured about their performance immediately after both speaking tasks.

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3.3.2 Stimulated Recalls

Stimulated recall is an introspective method that can be conducted in a retrospective manner. Subjects can be presented with their recorded speech sample and reflect on it. Potentially, stimulated recall can shed light on underlying cognitive processes during L2 production. For instance, studies by Kahng (2014) and Wood (2016) confirmed the validity and fruitfulness of the methodology that provides valuable information that quantitative data cannot reveal.

Following Kahng (2014) and Wood (2016), the stimulated recalls were obtained by playing back recorded speaking tasks to the participants. They were asked to describe what they were thinking while pausing or hesitating during their own speech. Kahng (2014) mentions the susceptibility to recall confounds in this method (p. 819). Therefore, she emphasised that participants performed the recalls immediately after their speaking task, so that they would utilise recent memory. Wood (2016) also let his participants do the stimulated recalls based on recordings directly after their speaking tasks.

Since the participants in the current study performed interactive speaking tasks, it was not possible to do stimulated recalls immediately after for every participant. However, stimulated recalls were conducted with participants within 24 hours after the experiment who also had to verbally reiterate what the speaking tasks entailed in order to maximally stimulate the recalling process. A subset of the sample (n = 7, males = 4, females = 3) performed stimulated recall on their speaking performance recordings in both anxiety conditions within 24 hours after conducting the experiment. The participants were asked on a voluntary basis if they were willing to further participate in this research and received a 5€ bol.com gift cards as a reward afterwards.

To ensure that the participants could fully explain themselves, the stimulated recalls were conducted in their L1, Dutch. In order to reduce bias or disclose the subject of interest of

the study, I, the experimenter, explained that the study investigated conversation and speaking skills among secondary school L2 learners of English. Firstly, students were asked if they could recapitulate what they did on the speaking tasks, what the subjects were and in what order they performed the speaking tasks. After that, I explained that the students were going to comment on their thinking processes during speaking, in particular on what they were thinking while pausing or hesitating. Each participant first listened to their speaking performance during one task. Then I played the recording and paused when there was a silent pause, a filled pause, or a hesitation on which students could comment. This procedure was identical for the recording of the second speaking task. Students could also give directions to pause the recording. The experimenter's interference was reduced to only pointing out pauses and asking about them but not asking any other questions that might influence the participants' responses.

The stimulated recalls between participant and experimenter took place by means of the screen sharing function in Microsoft Teams. The participants could see the sound waves of their recordings in the phonetics computer program PRAAT (Boersma & Weenink, 2016) and they could clearly see when the recording was put on pause. The participants' responses were recorded with a cell phone by the participant, who distributed the recording through Microsoft Teams. The stimulated recalls in both conditions were again counterbalanced for the subset of participants, so that the order of the conditions in which the speaking tasks were performed was balanced as well. Four participants had started with the high-anxiety condition and three participants had started with the low-anxiety condition. The stimulated recall procedure took about 25 minutes. Participants were asked not to disclose information about the speaking tasks, the experiment, and/or the stimulated recalls with their peers before the end of data collection. They were informed about the experiment directly afterwards.

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3.4 Analysis

3.4.1 Comparing and Exploring Utterance Fluency

   Kahng (2014) and De Jong et al. (2013) are taken as examples for the selection of temporal utterance fluency measures. The selected temporal measures and their operationalisations are listed in table 1 below.

Table 1. Overview of temporal utterance fluency measures and their definitions.

Fluency measures		Definition and Operationalisation
Speed	Mean syllable duration	Inverse of articulation rate. Total spoken time / total number of syllables.
Repair	Number of corrections	Number of corrections / minute
	Number of repetitions	Number of repetitions / minute
Pausing	Number of filled pauses	Number of filled pauses / minute
	Number of silent pauses	Number of silent pauses / minute
	Mean duration of filled pauses	Total speaking time / number of filled pauses
	Mean duration of silent pauses	Total silent pausing time / number of silent pauses
Length	Mean length of run	Number of syllables / number of speech runs

   Participants have recorded their own voices in both speaking tasks by means of microphones on their headphones. These recordings were converted into WAV files in Qualtrics. The WAV files are cleaned in PRAAT (Boersma & Weenink, 2016) as follows: long silences in the low-anxiety condition audios due to turn-taking were manually cut out of the audio files in PRAAT. Likewise, the instructions from the researcher at the beginning and end of the audio files were cut out of the recordings. Moreover, when these long silences included hedges, such as "yeah", they were cut out as well. Responses such as "yeah" and "yes" were only left in if they introduced a turn taking. For example, hedges such as "hmmhmm" and "yeah" in isolation were deleted, whereas responses such as "yes, but don't

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you think…" where "yes" is followed by a student taking the floor, were left in.

After cleaning the audio files, an automatic analysis of fluency was conducted in PRAAT by means of two scripts by De Jong and Pacilly (2019) and De Jong, Wempe, and Pacilly (2019). These scripts counted the number of syllables and registers the number of filled and silent pauses automatically. In addition to this automatic analysis, the files were checked manually. The number and kind of hesitations or repairs present in the audio file have been marked and coded manually as well. The calculated data in PRAAT was used to obtain scores for the temporal fluency measures in table 1.

For both conditions, all temporal fluency data was checked for normality and outliers in R by plotting boxplots, QQ plots, and conducting Shapiro-Wilk tests, so that parametric tests could be used.

To explore the differences between the experimental anxiety conditions in this within-subjects design, dependent samples t-tests were performed.

3.4.2 Comparing and Exploring Anxiety

For the analysis of the FLCAS, one statement was left out. The seventh statement 'I felt that my partner performed better than I did' was deemed irrelevant for measuring FLA, as the experimenter was always at a higher proficiency level than the student. To determine whether the means were significantly different between the conditions, Wilcoxon signed-rank tests were conducted. The difference in self-assessment grade in both conditions was examined by means of a dependent samples t-test.

During the follow-up experiment, the timing of participants' responses on pauses were written down, so that the moment of pausing could be related back to the recorded stimulated recalls. All stimulated recalls were transcribed, as well as the accompanying audio files. These audio files of the speaking tasks were transcribed including filled and silent pauses

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along with their timings. Therefore, the qualitative results section was able to contain

descriptions and interpretations about the most typical responses for every category and the

contexts of these responses. The stimulated recalls were categorized based on Kahng's (2014)

categories, which are *content of message, vocabulary, grammar, phonology* and *other issues*.

The categorized responses were counted per condition. After, the number and type of

responses were compared per condition through descriptive statistics and a Fischer's exact

test.

4. Results

Although the participants in the current sample all came from the same grade, have had the same English teacher, and received the same method of instruction in their English classes, there was already quite some variability in the mean age of onset of acquisition of English and the number of years they reported exposure to English. The individual variability would mostly be accounted for by the within-subjects design of the experiment. However, variability in L2 proficiency became apparent in the stimulated recalls, where the type of responses varied a great deal among the participants.

The effect of foreign language anxiety on L2 speech production was explored both quantitatively and qualitatively. This section presents the results of the experiment and the stimulated recalls in the following manner. Firstly, the quantitative analyses will be discussed. The results of the temporal fluency measures will be described and inferential statistics will be reported. Furthermore, the reported anxiety results from the adjusted FLCAS will be presented along with inferential statistics. Secondly, there will be a separate section on the stimulated recalls that discusses the number and types of responses first quantitatively and then qualitatively. In the qualitative analysis, typical examples of the types of responses will be discussed and compared to elucidate the L2 proficiency variability in the current sample. The qualitative analysis will disentangle the underlying cognitive fluency processes during the experiment in both anxiety conditions.

4.1 Impact of Anxiety: Temporal Utterance Fluency Measures

In table 2, the descriptive and inferential statistics of the temporal utterance fluency measures are presented per condition. Normality was tested by means of Shapiro-Wilk tests. For all but three measures, normality could be assumed (Ws > .9). The measures *silent pause duration, number of repetitions,* and *mean length of run* were not normally distributed and therefore, they were logarithmically transformed. Moreover, due to low quality of recordings,

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the audio recordings of two participants could not successfully be analysed for the number of

nuclei or syllables. Therefore, the measures that derived from the number of nuclei could not

be calculated. As a result, the measures *speed* and *length* had fifteen observations instead of

seventeen in each condition.

Since the participants performed the speaking tasks in both conditions, individual

variability can be accounted for in further inferential statistics. Moreover, outliers were

excluded in such a way that the paired data point was also deleted, so that dependent samples

t-tests could be executed. Outliers were defined as data points outside the inter-quartile range,

and thus more than three standard deviations away from the means. For the measures *speed*

(N = 1)*, number of repetitions* (N = 1)*, number of filled pauses* (N = 1)*, duration of filled*

pauses (N = 1)*, and *length* (N = 4)*, a total of eight outliers and their paired data points were

excluded.

In table 2, the descriptive statistics of the temporal measures show that overall,

participants tended to have less corrections, repetitions, and silent pauses in their speech in the

low-anxiety condition compared to the high-anxiety condition. The transformed mean

duration of silent pauses was shorter in the high-anxiety condition. Lastly, the mean length of

speech runs was longer in the high-anxiety condition as well.

Moreover, differences between the two anxiety conditions were further explored by

means of inferential statistics (table 2). No significant differences were found between the

means of the temporal utterance fluency measures. Only two measures approached

significance: first, in the high-anxiety condition, on average, participants had longer runs of

speech (M = .77, SD = .08) than in the low-anxiety condition (M = .71, SD = .09), t(10) =

2.01, p = .07, which had a large effect size, r = .54. Second, participants had more repetitions

in the high-anxiety condition (M = .20, SD = .22) than in the low-anxiety condition (M = .07,

SD = .25), t(15) = 1.95, p = .07, which had a large medium-sized effect, r = .45.

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Finally, the reported effect sizes in table 2 range from small (>.1), medium (>.3), to large (>.5). Although the dependent samples t-tests did not reveal significant differences, it is noteworthy that some temporal utterance fluency measures reported a significant effect size, such as *speed, number of repetitions, mean duration of silent pauses,* and *length.*

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Table 2. Descriptive and inferential statistics of the temporal utterance fluency measures across anxiety conditions and group differences.

Measure	High Anxiety		Low Anxiety		T-test			
	M (SD)	Range	M (SD)	Range	t-value	df	p-value	r
Speed	0.29 (0.03)	0.23 – 0.34	0.31 (0.04)	0.26 – 0.38	-1.29	13	0.22	0.34
Repair								
Number of corrections	1.28 (0.80)	0 – 2.73	1.20 (1.00)	0 – 3.30	0.26	16	0.80	0.06
Number of repetitions^L	0.20 (0.22)	-0.28 – 0.51	0.07 (0.25)	-0.48 – 0.36	1.95	15	0.07	0.45
Pausing								
Number of filled pauses	12.24 (5.95)	2.38 – 23.45	12.99 (6.36)	1.66 – 21.50	-0.58	15	0.57	0.15
Number of silent pauses	19.40 (2.65)	14.72 – 24.92	18.70 (2.60)	14.19 – 22.07	0.90	16	0.38	0.22
Mean duration of FPs	0.31 (0.15)	0.06 – 0.62	0.30 (0.14)	0.04 – 0.50	0.28	15	0.79	0.07
Mean duration of SPs^L	0.0057 (0.12)	-0.23 – 0.23	0.066 (0.09)	-0.13 – 0.25	-1.66	15	0.12	0.39
Length^L	0.77(0.08)	0.65 – 0.93	0.71 (0.09)	0.54 - 0.86	2.01	10	0.07	0.54

<.05*, <.01**

^{L}Logaritmically transformed measure (base = 10)

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4.2 Reported Anxiety: Adjusted FLCAS

In the adjusted FLCAS questionnaires, participants reported on their foreign language anxiety in both the low-anxiety condition with a peer and the high-anxiety condition with the experimenter on five-point Likert scales. In this section, the questionnaire statements will be referred to by their number in brackets, as can be deduced from table 3.

Table 3 illustrates that participants reported higher agreement with negative statements in the high-anxiety condition, compared to the low-anxiety condition, whereas they reported higher agreement with positive statements in the low-anxiety condition as opposed to the high-anxiety condition. For instance, on the one hand, participants felt more pressure (5) (Mdn = 3, SD = 1.13) in the high-anxiety condition than in the low-anxiety condition (Mdn = 2, SD = 1.02). On the other hand, participants felt more at ease (1) in the low-anxiety condition (Mdn = 4, SD = 0.80) than in the high-anxiety condition (Mdn = 3, SD = 1.05).

Wilcoxon signed-rank tests revealed significant differences between the means for three out of six questionnaire elements. Firstly, there was a significant difference in feeling at ease (1) between the high-anxiety condition (Mdn = 3) and the low-anxiety condition (M = 4), W = 4, p < .05, r = -.59. Secondly, the reported insecurity (2) was significantly higher in the high-anxiety condition (Mdn = 4) than the low-anxiety condition (Mdn = 3), W = 75, p < .01, r = -.70. Thirdly, participants stated that they panicked more (4) in the high-anxiety condition (Mdn = 3) than in the low-anxiety condition (Mdn = 2), W = 41, p <.05, r. = -.54. What is more, the calculated effect sizes of the significant comparisons exceed the .5 threshold and are therefore large (Cohen, 1988, 1992).

Lastly, a dependent t-test revealed that the self-assessment grade for the high-anxiety condition was significantly lower (M = 6.11, SD = 1.10) compared to the low-anxiety condition (M = 6.87, SD = 0.71), t(16) = -3.01, p < 0.01.

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Table 3. Means and standard deviations of the Likert values on the adjusted FLCAS statements of both anxiety conditions and group comparisons.

	High Anxiety		Low Anxiety		Wilcoxon signed-rank test		
Statement	**Median (SD)**	**Range**	**Median (SD)**	**Range**	W	p-value	Effect size r
1. **I felt at ease during the speaking task.**	3 (1.054)	1 – 4	4 (0.800)	2 - 5	4	0.015*	-0.59
2. **I felt insecure when I was speaking in English.**	4 (1.047)	2 – 5	3 (0.985)	1 – 5	75	0.004**	-0.70
3. **I did not care about making mistakes during the speaking task.**	3 (1.033)	1 – 5	3 (0.899)	1 – 4	25.5	0.291	-0.26
4. **I panicked when I had to speak without much preparation.**	3 (1.061)	1 – 5	2 (1.228)	1 – 5	41	0.025*	-0.54
5. **I felt pressured when I needed to prepare for the speaking task.**	3 (1.125)	1 – 5	2 (1.015)	1 – 4	38	0.289	-0.26
6. **When I was speaking, I forgot things I actually know.**	4 (1.047)	2 – 5	3 (1.061)	1 – 5	46	0.063	-0.45

<.05*, <.01**, <.001***

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4.3 Impact of Anxiety: Stimulated Recalls

This section will discuss the stimulated recall responses and compare them between the two anxiety conditions. Table 4 lists an overview of the number of responses and the corresponding categories. In addition, this section will be qualitatively analysed. For each category, typical responses will be elucidated by means of examples of both the stimulated recall responses.

Table 4. Overview of stimulated recall responses

	High Anxiety (N = 7)		**Low Anxiety** (N = 7)	
	Number of Issues	Percentage of Issues	Number of Issues	Percentage of Issues
Content of message	44	68.8	18	36
Vocabulary	12	18.7	17	34
Grammar	1	1.6	4	8
Phonology	2	3.1	0	0
Other	5	7.8	11	22
Total	64	100	50	100

A Fisher's exact test revealed a significant influence of anxiety condition across the five stimulated recall categories, p = .001.

4.3.1 Content of message

Typically, participants reported that during pauses or hesitations, they were trying to work out what to say next. This category was filled most frequently in both the high-anxiety and the low-anxiety condition. Remarkably, in the former condition 68.8% of the responses fell into this category versus only 36% of the latter.

The following translated example is prototypical for this category:

1. eh, eh, okay, I maybe eh there was a person who has to go to his work and he eh was in a hurry // because he eh overslept and the dog was still sleeping eh and he eh was eh

maybe eh he-he-he couldn't find his clothes // so he eh messed up his whole eh

bedroom and w-with the cat still laying there //

RMMH1275: "*The runs of speech in which I do not say 'uhm' are the runs I had made*

up while saying 'uhm'. So, during many of the 'uhms' that I say, I am thinking about

how I should continue. Because honestly, I did not know where my story was going."

Moreover, the responses marked with *content of message* often entailed detailed descriptions

of the content of the task. This suggests that the participants focused more on the content of

their speech and less on the formal aspects. Thus, the participants showed more or less

automatized L2 production. In particular the next participants elaborated extensively on the

content of their speech during pausing.

PWIB1179 commented at one point: *"At this point I had gotten myself in trouble,*

because I said that the dog had left but that could not be the case, as the dog was supposed to

bump the coffee out of his hand. So, I had to come up with something new." And EGJS071978

was even more extensive. When he commented on a pause, he reiterated the entire dialogue

with his peer to explain that "[…] *then I wanted to know if she was old or young, so that I*

could figure out if she could be a mother figure, so I could link that to the picture of the room.

Because maybe her mother told her to clean her room, if she was young. If she was old, I

would have to make up something new. So that is why I asked [peer]."

These stimulated recall responses edify the level at which the students were processing

during the speaking task. During pausing, they usually reported they were trying to anticipate

what to say next at the abstract level of content, rather than the formal level of language use.

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4.3.2 Vocabulary

Yet, participants did report on formal difficulties, such as word retrieval. However, some participants clearly drew upon translating from Dutch to English, as becomes evident from the following example:

2. and the third picture is oh eh a clock which makes a lot of noise / cause you see the ehm yeah the sound waves eh by it / so it means / yeah / that it's ringing // DRNZ0972: *"I had totally forgotten the word "wekker" in English and I was looking for a solution for this."*

Whereas, other participants explained that they were looking for a description in English:

3. eh / on the second picture / […] people are – people are studying together / which means that / which means that you can work out problems together and come to insights you normally wouldn't get alone // MMTG051489: *"At this point I had to think about in what way I could say that together, you can arrive at ideas that you would not think of yourself. I was not translating from Dutch or anything but I was trying to find the words for this in English."*

This qualitative difference in word retrieval reflects the different ways of language processing that are connected to differences in language proficiency levels even within this sample.

4.3.3 Grammar

Responses that fell into this category appeared the least times in both conditions and only once in the high-anxiety condition. In the high-anxiety condition, PWIB1174 reported on the use of tense:

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4. but ehm when eh the lady walked away / the the dog eh came back to the man and
    ehm the man ha- didn't see it coming the dog//
    PWIB1174 reflected: *"Yes, at this point I was not sure how I would say this. So I am*
    thinking about if it should be past tense or if it could stay present tense."

All other grammar comments had to do with translating from Dutch and word formation, for
instance:

5. yes but do you think you could eh you-you'll get eh better marks if you would eh put
    more ehm // if you start summarizing or marking / if you put more work in it //
    ABLJ0968: "*I tried to transform a Dutch sentence into an English sentence but that*
    did not go well."

Both of these examples illustrate that participants were drawing upon explicitly learnt
grammatical rules and thus their L2 declarative knowledge.

4.3.4 Phonology

Only two students reported on having trouble with pronunciation, and only in the
experimental, high-anxiety condition:

6. okay / I see eh pictures of a cat ehm that's laying and eh by a window and looking at
    the ca- at the camera / eh
    DRNZ0972: *"I forgot how to pronounce the word 'camera'. Where you are supposed*
    to put the stress."

7. eh in the first picture of mine you see eh someone's watching eh his watch //
    RMMH1275: "*Yeah, and then I said: 'Watching a watch' or something, and I already*
    thought: 'This is going to sound very silly, because of watching *and* watch*'. So yes,*
    but I had to say it anyway.

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4.3.5 Other

Responses that could not be categorized otherwise were put under this label. For instance, some participants answered that they could not remember why they paused or explained that they were looking at the pictures without anticipating their speech.

8. yeah / well I-I don't like eh study together bu-because I eh rather do it on my own //

PWIB1174: *"Yes, I do not know actually. I think about what I wanted to say. I do not think I struggled with a word, anyway."*

In example 8, the participant does try to come up with an explanation for her pausing. However, at the first instance she claims to have no memory, and therefore, it was categorized under *other*. Likewise, other responses that entailed responses with no memory at the first instance were treated similarly.

9. I see an eh sleeping cat and an eh and an eh alarm clock and eh a bed that's really messy and all the blankets are everywhere //

SMMS0172: *"Oh, yes, I was practising the images. Then I saw a clock."*

Often, participants' responses drew upon task-related issues, such as the one in example 9. In addition, sometimes the experimenter stopped the recording at a turn-taking. The responses that stemmed from these instances were marked as other and were thus peer-related (n = 3). Other responses in this category involved participants reporting about stress (n = 2), external noise (n = 1) and pausing due to wrapping up (n = 1). In sum, this last category reveals a variety of responses which can be related to personality, i.e. stress, and the nature of the task, i.e. task-related issues, wrapping up, but also includes responses that are deviant from all other categories and situation-specific, i.e. external noise.

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5. Discussion

This study set out to investigate the effect of foreign language anxiety on Dutch L2 English learners' L2 fluency in speech production. By means of both quantitative and qualitative analyses, this study found that although learners reported that they experienced anxiety, this did not have a significant effect on their L2 utterance fluency. Based on stimulated recalls, this study further explored the cognitive processing of L2 learners during speech production. The results show a variety of responses that also point to the variety within this study's sample.

This section will first discuss the quantitative results of both the temporal utterance fluency measures and the adjusted FLCAS. The results of the current study will be interpreted and compared to the literature. Secondly, the qualitative results of the stimulated recalls will be analysed in the context of cognitive fluency.

5.1 FLA and Utterance Fluency

L2 utterance fluency was measured based on temporal fluency measures from Kahng (2014) and De Jong et al. (2013). The current study looked at measures for speed, repair, pausing and length of run. Although there were no significant differences found in the L2 utterance fluency measures between the two anxiety conditions, a few findings stood out.

First, there was almost no difference in mean syllable duration (speed) between the two anxiety conditions. Kahng (2014) and De Jong et al. (2013) found that this measure correlated strongly with L2 cognitive fluency. Kahng (2014) found that L1 speakers with higher proficiencies spoke significantly faster than L2 speakers with lower proficiencies. Moreover, De Jong et al. (2013) already found that mean syllable duration explained 50% of the variance in the linguistic knowledge and skills measures, which underlie L2 cognitive fluency. Perhaps the findings of the current study show that the lack of difference between the two anxiety conditions is related to the fact that this study was a within-subjects design. FLA

did not affect their L2 performance as much and the students did not differ in their L2 proficiency as they are matched in both conditions.

Second, the repair phenomena did not differ between the anxiety conditions. Repair phenomena can be explained by monitoring and learners' attentional resources, as repairs reinforce the L2 learner's awareness of their L2 production and their explicit L2 knowledge (Kormos, 2006: 123). Although Kahng (2014) emphasised the difficulty of interpreting repair phenomena, as they are mostly linked to individual differences (p. 839), and De Jong et al. (2013) reported differential explanatory power of repair phenomena, it is premature to draw definite conclusions. However, theoretically, the high-anxiety condition might have caused participants to be more aware of their speech. The heightened awareness might have let participants draw upon their L2 explicit knowledge or declarative system (Ellis, 2005; Ullman, 2004). Conversely, participants could have had less repairs because they did not mind them when talking with their peer, as it would not hinder the semantic content or because there was less opportunity to repair. The low-anxiety condition could have allowed peers to interact more during the speaking task, which could have resulted in more turn-taking.

Third, there was no significant difference between the anxiety conditions for the pausing measures. In the literature, pausing phenomena pose differential findings. However, both De Jong et al. (2013) and Kahng (2014) found that frequency of either filled or silent pauses are predictors for L2 fluency, whereas mean length of durations have almost no predictive power. In addition, Kahng (2014) mentioned in her discussion that filled pauses might be used strategically by speakers, to break up silences in their runs of speech. Another plausible explanation for pausing phenomena is processing difficulty. If L2 learners draw upon their declarative knowledge for their explicit L2 knowledge, attention or pressure can interfere in language processing. Access to the declarative system is more difficult and can

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result in more pausing. The results of the current study are non-conclusive with regards to the

pausing measures, as the differences between the conditions do not even approach

significance. Furthermore, pausing phenomena and their relation with L2 fluency is still under

debate due to, among other things, mixed results and probable theories and explanations (De

Jong et al., 2013; Kahng, 2014; Kormos, 2006).

       Lastly, the mean lengths of speech runs were longer in the high-anxiety condition than

in the low-anxiety condition. The difference between the conditions was not significant, yet

approached significance and had a large reported effect size. In her study, Kahng (2014) states

that "[l]ength of run has a conceptual connection with automatic speech production

processing" (p. 838). However, to date it is unclear how length of run and automaticity relate

to one another. Longer mean lengths of run would indicate higher efficiency and fluency in

processing stages, although it is unclear which stages exactly (i.e. the lexical level,

grammatical encoding, etc.) (Kahng, 2014; Segalowitz, 2010). In sum, it is difficult to

interpret this last finding in the context of automatic processing and FLA inhibiting attentional

resources.

5.2 FLA and Self-perceived Oral Proficiency

       This study's findings about the negative impact of FLA on perceived fluency is in line

with previous findings. In the experiment, participants reflected on their speaking

performance in both anxiety conditions through an adjusted FLCAS (Horwitz et al., 1986;

Horwitz, 1986). Furthermore, this questionnaire included a self-assessment that revealed that

participants graded themselves significantly lower in the high-anxiety conditions compared to

the low-anxiety condition and the reported effect sizes were large. It became evident from the

FLCAS statements that participants experienced the high-anxiety conditions as less

comfortable. Three out of six statements showed a significant difference between the anxiety

conditions: participants reported feeling more insecure and panicked in the high-anxiety

condition whereas they felt more at ease in the low-anxiety condition. All in all, the results from this questionnaire reveal that in the high-anxiety condition, participants reported on higher FLA and lower perceived L2 performance. Ergo, this study's manipulation came across in the participants' perceived anxiety.

This debilitative effect of FLA on L2 fluency is found often in the literature (MacIntyre & Gardner, 1994; MacIntyre, 2017). Three things should be noted carefully when comparing FLA and L2 fluency studies. Firstly, many studies take L2 fluency or L2 oral performance as indicative for overall L2 proficiency (Lennon, 1990; MacIntyre & Gardner, 1994), and claim that FLA therefore impacts L2 performance negatively. However, there is a qualitative difference in the definition of fluency (i.e. broad vs. narrow sense) and studies cannot simply be compared. Secondly, L2 fluency or L2 performance is often constructed subjectively by human raters or self-assessments and taken as perceived fluency (MacIntyre, 2017; MacIntyre & Gardner, 1994; Tóth, 2012, 2015). For instance, Tóth (2012) found that students with higher levels of FLA received lower L2 oral performance scores from raters. Thirdly, to my knowledge, in the literature the effect of FLA on L2 performance is studied in between-subjects configurations, in which participants are divided up into groups that correspond to their level of FLA (i.e. Pérez Castillejo, 2019; Sparks & Ganschow, 2007; Tóth, 2012, 2015).

Besides the configuration of studies, the debilitative effect of FLA on L2 fluency is not conclusive. FLA affects different aspects of L2 performance, which can be read in the subsequent section on the stimulated recalls. Future research should study the effect of FLA on different aspects of L2 performance, as accuracy and complexity could be targets of FLA as well.

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5.3 FLA and Cognitive Fluency

The qualitative method of stimulated recall was used in this study to measure the impact of FLA on cognitive fluency, the third and last dimension of fluency as operationalised by Segalowitz (2010). Overall, participants had more responses about processing difficulties (i.e. pausing, hesitations, and corrections) in the high-anxiety condition than in the low-anxiety condition. A Fisher exact test revealed that this difference between the two anxiety conditions was significant across all categories. Overall, participants' responses were mostly categorized as *content of message*. This points to their more automatised L2 processing due to higher L2 proficiency, and thus their preoccupation with content, rather than form during L2 performance. Furthermore, in both conditions, these responses about anticipating what to say next were most recurrent, albeit more frequent in the high-anxiety condition. Perhaps this can be explained by the fact that the speaking tasks were interactive, however, the interaction with the experimenter in the high-anxiety condition was very limited. As a result, participants needed to anticipate more on the content of their message in this condition, whereas in the low-anxiety condition, there was more interaction and cooperation with peers.

Similar to Kahng (2014), this study found a qualitative division in the type of vocabulary responses. Students either looked for words or description by means of translating from their L1 or finding words in their L2. This finding reveals a difference in L2 proficiency in the sample, as lower proficient L2 speakers tend to rely on translation, whereas higher proficient L2 speakers tend to find better fitting words or description for contextual reasons. In general, Kormos states that self-corrections elucidate the level at which learners monitor their L2 production as well as their proficiency levels, as higher proficient learners shift their attention to errors at discourse levels (2006: 136).

Apart from proficiency differences within the current sample, the higher number of responses in the high-anxiety condition might be caused by students drawing upon their

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declarative system due to more focus or awareness. Furthermore, FLA could have interfered

with this focus and cognitive processes and might have led to more dysfluencies (Kormos,

2006; Segalowitz, 2010; Ullman, 2004). Stimulated recall responses that related to formal

aspects of language, such as the categories *grammar* and *phonology,* point to participants' use

of explicit L2 knowledge. However, there were more reports on grammar issues in the low-

anxiety conditions. An explanation for this could be that in these more interactive speaking

tasks, participants had less time to prepare their utterances which led to more rephrasing.

According to Kormos (2006) this type of repair mechanism is not necessarily an error repair.

Rather, "this type of repair involves the modification of the preverbal plan but leaves the

content of the message unaltered" and therefore Kormos argues that this type of repair falls

under the umbrella of communication strategies (p. 126). Thus, this type of repair is not

formal in nature and could, in turn, point to a more proceduralized or automatised type of

language processing of an L2 learner as opposed to phonological issues.

Lastly, in the low-anxiety condition the other category covers 22 percent of the total

number of issues. The fact that such a big part of the issues could not be described in terms of

the other language-related categories is striking. However, often the issues had to do with

their peer, which is unique to this condition as well. Remarkably, only in the peer condition

participants indicated a lack of memory. This suggests that in the low-anxiety condition,

participants were less concerned with formal language processing and drew more upon

automatized procedural knowledge. This is similar to Kahng (2014), who found that higher

proficient learners were more concerned with macroplanning or monitoring, as they were less

conscious about their language processing and speech production.

Yet, although this method allows researchers to look at cognitive processing during L2

speech production, a lot of variation in L2 fluency remains based on individual differences

(Kahng, 2014; Kormos, 2006; Segalowitz, 2010; Tóth, 2012, 2015). In addition, for this

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laborious qualitative research, small sample sizes make it difficult to draw conclusions. Be that as it may, without the qualitative analysis, this study's mixed findings would have resulted in many more question marks. The stimulated recalls clarified more about the current sample and their proficiency variability and addressed cognitive fluency in addition to the quantitative sections that addressed utterance and perceived fluency.

Finally, a few limitations of this study must be mentioned. Firstly, due to the COVID-19 pandemic, this study conducted the speaking tasks online. Therefore, there was no face-to-face contact either between the experimenter and the student or between the students. This removed some of the naturalistic learning setting factors, such as interaction and non-verbal communication, and might have reduced the difference between the high-anxiety condition and the low-anxiety condition. Additionally, the online experiment resulted in some data loss, as audio-recordings in Qualtrics often did not succeed, which led to smaller sample sizes in both the experiment and the stimulated recalls, for the study was a within-subject design to reduce subject variability and control for individual differences, such as personal speaking style and Willingness to Communicate (WTC). Lastly, the current sample of students were quite advanced in their L2 proficiency, so they were already quite automatized in their L2. Presumably, the learners did not hinge on their explicit declarative L2 knowledge of English. Ergo, the hypothesised effect of FLA impeding access to explicit L2 knowledge in the declarative system might not have come across due to the sample.

In the future, it might be interesting to conduct qualitative research with bigger samples, so that individual features can be distinguished from the effect of the experimental manipulation, for example. Moreover, more information can be gathered about the L2 learners and L2 proficiency levels can be taken into account during analysis. Future research could examine the effect of FLA on the L2 learner and should look at the effect of FLA on different aspects and dimensions of L2 performance. Both quantitative and qualitative methods in SLA

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research can gain more insights in the L2 learners, the underlying cognitive processes during

L2 production, and other (sociolinguistic) factors that might not be thought of beforehand but

appear during qualitative research.

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6. Conclusion

In summary, this study has found that L2 utterance fluency was not impacted by FLA. Although the L2 speakers in the current study reported on heightened anxiety levels in the high-anxiety condition and concluded that their self-perceived oral proficiency was lower in this condition as well, their L2 utterance fluency did not differ between anxiety conditions. Moreover, the exploration of L2 cognitive fluency posed interesting findings. The number of reported issues was higher in the high-anxiety condition and the quality of these issues differed from the low-anxiety condition, which suggests a difference in cognitive processing during L2 speaking performance in the anxiety conditions. Consequently, this study asserted the fruitfulness of operationalising and addressing all dimensions of L2 fluency (Segalowitz, 2010) and the use of qualitative methods.

Based on the literature and the current study, I conclude that FLA may affect different aspects of L2 performance. This is corroborated by the literature on the role of the L2 learner and individual factors, such as WTC and trait anxiety, which impact L2 performance and are associated with FLA (Huang, 2018; MacIntyre et al., 1998; Van Batenburg et al., 2019; Wood, 2016). Moreover, Segalowitz's (2010) psycholinguistic model explains how the L2 learner's motivation and social environment are an inherent part of L2 fluency development. Therefore, it is important to assess the impact of FLA on different aspects of L2 performance and the L2 learner.

Finally, I would like to conclude by outlining the implications for pedagogy and didactics. FLA's debilitative effect on L2 fluency is often mentioned, yet MacIntyre and Gardner assert that "[its effect] on cognitive processing in the second language appears pervasive and may be quite subtle" (1994: 301) and that, given enough time, highly anxious learners can obtain high achievements in their L2 (p. 299). Although we cannot always measure the direct effect in the L2 performance, FLA nevertheless lingers and hinders L2

learning. Therefore, we should be aware of the learning climate inside the foreign language classrooms and make sure students get the opportunity and time to take part in the foreign language class, and develop their sense of identity while remaining motivated.

Returning to the initial case study of Emma who struggled in her English class: what if her L2 performance was not affected by her FLA as much and therefore, teachers would never have picked up on her FLA? What if Emma lost motivation for learning her L2 and feel uncomfortable in communicating in her L2? This might result in a lagging behind in her L2 proficiency. Possibly, this might have implications for Emma's enjoyment of her English classes and her future studies, which are likely to be taught in English. More research into the effect of FLA will hopefully raise awareness for the phenomenon in foreign language classrooms and acknowledge its impact on the L2 learner. Potentially, teachers could adapt their teaching strategies (e.g. including longer wait-times and doing different classroom activities) to create safer and more efficient learning environments. These accommodations for L2 learners like Emma would yield enormous successes regarding their foreign language and personal development.

References

Boersma, P., & Weenink, D. (2016). PRAAT: Doing phonetics by computer [Computer program]. Version 6.0.23. Retrieved from http://www.PRAAT.org/.

Council of Europe. (2004). *Common European Framework of Reference for Languages: Learning, teaching, assessment Structured overview of all Common European Framework of Reference for Languages: Learning, teaching, assessment tructured overview of all CEFR scales Common European Fram*. Retrieved from http://ebcl.eu.com/wp-content/uploads/2011/11/CEFR-all-scales-and-all-skills.pdf

De Jong, N. H., Steinel, M. P., Florijn, A. F., Schoonen, R., & Hulstijn, J. H. (2012). Facets of speaking proficiency. *Studies in Second Language Acquisition*, *34*(1), 5–34. https://doi.org/10.1017/S0272263111000489

De Jong, N. H., Steinel, M. P., Florijn, A., Schoonen, R., & Hulstijn, J. H. (2013). Linguistic skills and speaking fluency in a second language. *Applied Psycholinguistics*, *34*(5), 893–916. https://doi.org/10.1017/S0142716412000069

De Jong, N., & Pacilly, J. J. A. (2019). Filled Pauses [PRAAT script]. Retrieved through personal correspondence with Dr. N. H. De Jong.

De Jong, N., Wempe, T., & Pacilly, J. J. A. (2019). Syllable Nuclei [PRAAT script]. Version 3. Retrieved through personal correspondence with Dr. N. H. De Jong.

Ellis, R. (2005). Measuring implicit and explicit knowledge of a second language. *Studies in Second Language Acquisition*, *27*, 141–172. https://doi.org/10.21832/9781847691767-004

Field, A., Miles, J., & Field, Z. (2012). *Discovering Statistics using R.* London: SAGE Publications Ltd.

Horwitz, E. K. (1986). *3 On the Misreading of Horwitz , Horwitz and Cope (1986) and the Need to Balance Anxiety Research and the Experiences of Anxious Language Learners*. 31–48.

The Impact of Foreign Language Anxiety on L2 Fluency

Horwitz, E.K., Horwitz, M.B., & Cope, J. (1986). Foreign Language Classroom Anxiety. *The Modern Language Journal*, *70*(2), 125-132. doi:10.1111/j.1540-4781.1986.tb05256.x

Huang, H. T. D. (2018). Modeling the relationships between anxieties and performance in second/foreign language speaking assessment. *Learning and Individual Differences, 63*(February), 44–56. https://doi.org/10.1016/j.lindif.2018.03.002

Jiang, Y., & Dewaele, J. M. (2019). How unique is the foreign language classroom enjoyment and anxiety of Chinese EFL learners? *System*, *82*(59), 13–25. https://doi.org/10.1016/j.system.2019.02.017

Kahng, J. (2014). Exploring Utterance and Cognitive Fluency of L1 and L2 English Speakers: Temporal Measures and Stimulated Recall. *Language Learning*, *64*(4), 809–854. https://doi.org/10.1111/lang.12084

Kormos, J. (2006). *Speech production and second language acquisition.* Mahwah, N.J., [etc.]: Erlbaum.

Lennon, P. (1990). Investigating Fluency in EFL: A Quantitative Approach. *Language Learning*, *40*(3), 387–417. https://doi.org/10.1111/j.1467-1770.1990.tb00669.x

Macintyre, P. D. (1978). *2 An Overview of Language Anxiety Research and Trends in its Development*. 11–30.

MacIntyre, P. D. (2017). An overview of language anxiety research and trends in its development. *New Insights into Language Anxiety: Theory, Research and Educational Implications*, 11–30. https://doi.org/10.21832/9781783097722-003

MacIntyre, P. D., & Gardner, R. C. (1994). The Subtle Effects of Language Anxiety on Cognitive Processing in the Second Language. *Language Learning*, *44*(2), 283–305. https://doi.org/10.1111/j.1467-1770.1994.tb01103.x

Macintyre, P. D., Dörnyei, Z., Clément, R., Noels, K. A., & Macintyre, P. D. (1998). *Conceptualizing Willingness to Communicate in a L2 : A Situational Model of L2 Confidence and Affiliation*. *82*(4), 545–562. Retrieved from http://www.jstor.org/stable/330224

The Impact of Foreign Language Anxiety on L2 Fluency

Mak, B. (2011). An exploration of speaking-in-class anxiety with Chinese ESL learners. *System*, *39*(2), 202–214. https://doi.org/10.1016/j.system.2011.04.002

Marian, Blumenfeld, & Kaushanskaya (2007). The Language Experience and Proficiency Questionnaire (LEAP-Q): Assessing language profiles in bilinguals and multilinguals. *Journal of Speech Language and Hearing Research, 50*(4), 940-967. https://doi-org.proxy.uba.uva.nl:2443/10.1044/1092-4388

Pérez Castillejo, S. (2019). The role of foreign language anxiety on L2 utterance fluency during a final exam. *Language Testing*, *36*(3), 327–345. https://doi.org/10.1177/0265532218777783

Qualtrics [Survey software]. (2005-2020). Qualtrics. Provo, Utah, United States of America. Retrieved from http://www.qualtrics.com

R Development Core Team (2019). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0. Retrieved from http://www.R-project.org.

Scovel, T. (1978). The effect of affect on foreign language learning: A review of the anxiety research. *Language learning, 28*(1), 129-142.

Segalowitz, N. (2010). *Cognitive bases of second language fluency.* New York, NY: Routledge.

Sparks, R. L., & Ganschow, L. (2007). Is the foreign language classroom anxiety scale measuring anxiety or language skills? *Foreign Language Annals, 40*(2), 260–287. https://doi.org/10.1111/j.1944-9720.2007.tb03201.x

Teimouri, Y., Goetze, J., & Plonsky, L. (2018). Second Language Anxiety and Achievement: a meta-analysis. *Studies in Second Language Acquisition*, *0*, 1-25, doi:10.1017/S0272263118000311

Tóth, Z. (2012). Foreign language anxiety and oral performance: Differences between high- vs. low-anxious EFL students. *US-China Foreign Language*, *10*(5), 1166–1178. Retrieved from

The Impact of Foreign Language Anxiety on L2 Fluency

http://www.davidpublishing.com/davidpublishing/Upfile/7/3/2012/2012070386230169.pdf

Tóth, Z. (2015). Foreign Language Anxiety: The Manifestation of Language Aptitude Differences? *Anglica Wratislaviensia*, (53), 151–165.

Ullman, M. T. (2001). The neural basis of lexicon and grammar in first and second language: the declarative/procedural model. *Bilingualism: Language and Cognition*, *4*(1), 105–122.

Ullman, M. T. (2004). Contributions of memory circuits to language: The declarative/procedural model. *Cognition*, *92*(1–2), 231–270. https://doi.org/10.1016/j.cognition.2003.10.008

Van Batenburg, E. S. L., Oostdam, R. J., Van Gelderen, A. J. S., Fukkink, R. G., & De Jong, N. H. (2019). Oral Interaction in the EFL Classroom: The Effects of Instructional Focus and Task Type on Learner Affect. *Modern Language Journal*, *103*(1), 308–326. https://doi.org/10.1111/modl.12545

Williams, J. N. (2009). Implicit Learning in Second Language Acquisition. *The Encyclopedia of Applied Linguistics*, 319–353. https://doi.org/10.1002/9781405198431.wbeal0529

Wood, D. (2016). Willingness to communicate and second language speech fl uency : An idiodynamic investigation. *System*, *60*, 11–28, https://doi.org/10.1016/j.system.2016.05.003

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Appendix A: Consent and informative letter parents

Beste ouder(s)/verzorger(s) en leerlingen uit klas 4,

Mijn naam is Myrthe Rood en op dit moment ben ik aan het afstuderen voor de master Taalwetenschappen aan de Universiteit Leiden. In mijn scriptie onderzoek ik tweedetaalverwerving en spreekvaardigheid in het Engels bij middelbare scholieren door middel van een experiment. Mijn interesse gaat daarbij uit naar studenten uit de 4e klas, die qua niveau tussen beginner en gevorderd vallen. In overleg met de docent Engels, mevrouw R. Cornelisse, voer ik dit onderzoek uit.

Omdat de huidige situatie ervoor zorgt dat de scholen dicht zijn en het niet mogelijk is om het experiment direct in een klassensituatie af te nemen, ben ik van plan dit via een videoverbinding in Microsoft Teams te doen. Het experiment bestaat uit spreektaken die worden opgenomen en bovendien zal de interactie tussen leerlingen via een videoverbinding worden vastgelegd.

De gegevens die dit experiment verzamelt, worden geanonimiseerd en zijn louter bedoeld voor educatieve onderzoeksdoeleinden. Ze worden opgeslagen op een non-profit online drive en de videobeelden worden na juli 2020 vernietigd.

Via deze mail wil ik u graag op de hoogte brengen van mijn onderzoek. Ik hoop u voldoende te hebben geïnformeerd. Mocht u bezwaar hebben tegen de deelname van uw kind aan dit experiment, wilt u mij dat dan laten weten vóór 21 april 2020 op het volgende emailadres: m.m.s.j.rood@umail.leidenuniv.nl.

Ik kijk ernaar uit om mijn onderzoek te kunnen voortzetten, juist in deze tijden. Verder hoop ik de leerlingen uit klas 4 een uitdaging te bieden binnen het vak Engels. Ik hoor graag van u vóór 21 april a.s.

Met vriendelijke groet,

Myrthe M. S. J. Rood BA

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Appendix B: Informative letter students

Beste leerling,

Mijn naam is Myrthe Rood en momenteel ben ik bezig met mijn afstudeeronderzoek voor mijn master Engelse Taal en Cultuur aan de universiteit van Leiden. Met behulp van mevrouw Cornelisse is het mogelijk om mijn experiment voor mijn onderzoek toch te laten doorgaan in de huidige omstandigheden. Jij en je ouders zijn al geïnformeerd over dit experiment, maar voordat we beginnen, wil ik nog een en ander uitleggen.

Je gaat deelnemen aan een experiment met betrekking tot spreekvaardigheid en gespreksvaardigheid in het Engels. Dit experiment doe je zowel via een online enquête als via een videoverbinding in Microsoft Teams. De enquête bevat onder andere twee spreektaken. Een daarvan voer je uit met een klasgenoot en de andere voer je uit met mij, de onderzoeker.

Je deelname aan dit experiment helpt mij bij mijn onderzoek. Daarnaast zal je op basis van je spreekvaardigheid in deze spreektaken worden beoordeeld voor het vak Engels in week 16/17. De spreektaak die je uitvoert met mij is daarbij leidend; de spreektaak met je klasgenoot kan de beoordeling licht beïnvloeden.

In overleg met mevrouw Cornelisse en via Microsoft Teams zal ik vergaderingen inplannen voor deze spreekvaardigheidsoefeningen. Het experiment zal in totaal ongeveer 30 minuten in beslag nemen per tweetal. De enquête bevat alle instructies en details en verder zal ik begeleiden.

Ik hoop jullie voor nu beter te hebben geïnformeerd. Ik kijk uit naar de experimenten. Mochten jullie voor nu met vragen zitten, mail deze dan naar m.m.s.j.rood@umail.leidenuniv.nl.

Met vriendelijke groet,

Myrthe M. S. J. Rood BA

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Appendix C: Speaking tasks

Interactive speaking Task 1: Comparisons

The following pictures show different strategies for studying. Along with your partner, compare these strategies. What are their advantages and disadvantages?

Make sure to support your opinion by giving relevant explanations, arguments, and comments.

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Interactive speaking Task 2: Building a scene

For the following task, you will see a series of images that form a scene. One of these images depicts the outcome of what happened. Both you and your partner can see the outcome image.
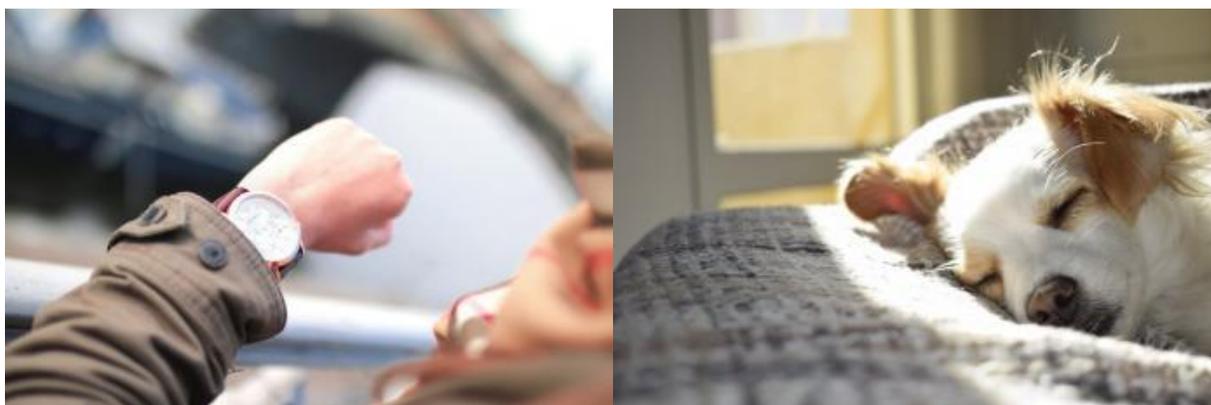
Take a minute to look the other images, and do not show them to your partner.

1. Taking turns, describe the images you see to your partner
2. Together with your partner, try to create a story where all of these images are involved. If you cannot use all of them, try to include as many as you can.

Outcome:

[SPEAKER #1] Your images:

Please take a minute to plan what you are going to say before starting.

You have ten minutes to finish this task. After that, the survey will automatically skip to the next task.

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[SPEAKER #2] Your images:

Please take a minute to plan what you are going to say before starting.

You have five minutes to finish this task. After that, the survey will automatically skip to the next task.

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Appendix D: Reflection questions

Ik voelde me op mijn gemak gedurende de spreektaak.

Helemaal mee oneens	Mee oneens	Neutraal	Mee eens	Helemaal mee eens
○	○	○	○	○

Ik voelde me onzeker toen ik aan het spreken was in het Engels.

Helemaal mee oneens	Mee oneens	Neutraal	Mee eens	Helemaal mee eens
○	○	○	○	○

Ik maakte me niet druk over het maken van fouten gedurende de spreektaak.

Helemaal mee oneens	Mee oneens	Neutraal	Mee eens	Helemaal mee eens
○	○	○	○	○

Ik raakte in paniek toen ik moest spreken zonder veel voorbereiding.

Helemaal mee oneens	Mee oneens	Neutraal	Mee eens	Helemaal mee eens
○	○	○	○	○

Ik voelde druk toen ik me moest voorbereiden op de opdracht.

Helemaal mee oneens	Mee oneens	Neutraal	Mee eens	Helemaal mee eens
○	○	○	○	○

Tijdens het spreken vergat ik dingen die ik eigenlijk wel wist.

Helemaal mee oneens	Mee oneens	Neutraal	Mee eens	Helemaal mee eens
○	○	○	○	○

Ik heb het gevoel dat mijn gesprekspartner het beter deed dan ik.

Helemaal mee oneens	Mee oneens	Neutraal	Mee eens	Helemaal mee eens
○	○	○	○	○

Hoe vond je de opdracht gaan? Wat voor een cijfer geef je jezelf?

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Appendix E: Background questionnaire

Wat is je leeftijd? Vul alleen een getal in (in jaren).

Wat is je moedertaal?

Wat is je geslacht?

◯ Man

◯ Vrouw

◯ Neutraal

Noteer alle talen die je spreekt in de volgorde van **hoe goed** je ze **beheerst**. Laat de velden open als je ze niet kan invullen. (Bijvoorbeeld: 1: Nederlands, 2: Engels, 3: Duits, 4: Frans).

1

2

3

4

5

Noteer alle talen die je spreekt in de volgorde van **aanleren**. Laat de velden open als je ze niet kan invullen. (Bijvoorbeeld: 1: Nederlands, 2: Engels, 3: Frans, 4: Duits).

1

2

3

4

5

Op welke datum ben je geïmmigreerd naar Nederland? Indien van toepassing. Laat anders het veld open.

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De volgende vragen gaan specifiek over je tweede taal.

Op welke leeftijd ben je begonnen met het leren van je tweede taal?

Geef aan hoeveel jaren je aan blootstelling of ervaring hebt gehad.