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Using Explicit Phonetic Instruction and Performative Output Training for Improving Speaking Ability in an EFL Classroom

Effects on self-efficacy, anxiety and production of mechanics

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25 ECTS MA Thesis English Language and Culture: Education and Communication

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Abstract

In the English as a foreign language (EFL) teaching classroom, many methods are used to improve learners' speaking abilities. This study assessed two form-based pronunciation training methods: explicit phonetic instruction (EPI) and performative output (PO). Specifically, it examined the effects of EPI training and PO training on Dutch high-school EFL learners' speaking abilities in three aspects: self-efficacy, language anxiety and the production of mechanics. It furthermore examined the correlation between self-efficacy and language anxiety in an EFL classroom setting. The experiment was set up using an interrupted time-series design with a control group and a training group. The PO training was found to have a significant effect on students' self-efficacy scores, affirming the usefulness of this method for improving affective factors influencing speaking ability. Neither of the training types had a significant effect on language anxiety or production of mechanics. Self-efficacy and language anxiety scores showed a strong, negative correlation after PO training, demonstrating that training programs based on performative output have a mediated effect on language anxiety. However, this study was restricted by several limitations due to the COVID-19 pandemic, which may have impacted its findings.

Key words: speaking ability, pronunciation training, explicit phonetic instruction, performative output, self-efficacy, language anxiety, segmental pronunciation, mechanics

Contents

1. Introduction

1.1. Teaching pronunciation

In the English as a foreign language teaching classroom, many methods are used to improve learners' speaking abilities. In their book on teaching EFL speaking, Nation and Newton (2008) provide an overview of different methods used to train and examine the speaking abilities of EFL learners. They devote a chapter to teaching pronunciation difficulties, a necessary element of foreign language teaching because the sound system of the learner's L1 differs from the sound system of the learner's L2 (2008, p. 33). They describe pronunciation as "the articulation of individual sounds and the distinctive features of sounds like voicing and aspiration, voice-setting features" (Esling and Wong, 1983, as cited in Nation and Newton, 2008, p. 76), stress and intonation (Nation and Newton, 2008, p. 76). A teaching method that addresses these aspects is form-focused pronunciation teaching, which helps learners to consciously perceive and produce a spoken form, minimizing the pronunciation errors caused by the learner's L1. According to Thomson and Derwing (2014), however, the effectiveness and practical use of pronunciation training has long been an unexplored field of research. One of its underlying reasons was the assumption that pronunciation would automatically improve through exposure (Derwing and Munro, 2005). Derwin and Munro (2005) refute the idea that pronunciation will automatically improve through exposure and therefore argue for more thoroughly designed teaching programs that match instructional content to the ESL speakers' needs. Those needs often concern intelligibility problems and these should be addressed through instruction, regardless of the teaching methods used. To contribute to the line of research into pronunciation teaching sparked by Derwin and Munro's publication, this study examines two training methods that focus on instructional input and performative output respectively.

1.2. Comparing methods

Among the less used, but widely researched methods is *explicit phonetic instruction* (EPI). In this method, students are being taught phonological form explicitly in order to help them notice the difference between their own oral productions and those of proficient or native speakers of the target language (Saito, 2013). Combining EPI with form-focused instruction has shown to significantly improve pronunciation, with learners being able to generalize the instructional input to new lexical contexts beyond the subject materials (Saito, 2013). Research by Smorenburg, Rodd and Chen (2015) and Pieper (2017) has shown that EPI as pronunciation training implemented in second language acquisition led to improved production skills of language learners. However, another study by Kissling (2013) indicated that language learners who received implicit rather than explicit instruction but with similar input, practice and feedback, improved pronunciation to a similar extent. Findings from these different studies suggest that both explicit and implicit input can benefit pronunciation development.

Moving away from explicit instruction then, Koster suggests a more dynamic, usage-based (DUB) approach for learning a foreign language (2015). In her method for German learners of Dutch, Koster combines language perception and production in a training program using film, with students closely listening to L2 fragments and analyzing the foreign speech in them. As a result, student L2 output significantly improved in a fill-in-the-blanks assignment and a writing assignment. This form of training perception and production can also be done in the form of bi-modal input, where matching auditory and visual stimuli are simultaneously presented to the language learner (Charles and Trenkic, 2015). By using film as the medium of input, this bi-modality entails hearing the actors speaking while simultaneously reading the matching subtitles. In order to improve productive output, this method can be combined with shadowing, a method in which learners try to repeat auditory input as fast and accurately as possible while listening to it. This training activity has been widely used in China since the 1980's (Wang, 2017). Research conducted by Ding (2007) also mentions the use of film with target language input, this time with a focus on using film sequences for productive use, in order to improve

pronunciation. This method facilitates noticing and rehearsal; two essential components for successful second language acquisition (Ding, 2007). Wang (2015) addresses the widely implemented method of using authentic English language materials such as films in EFL classrooms in China. These authentic materials are used to improve listening and speaking skills of students. Although Wang (2015) examined some of the key issues in using this method, most of them are related to enriching the intercultural competence of students from non-Western countries.

Based on the effectiveness of explicit phonetic instruction and indirect evidence for the usefulness of implicit training through the use of film materials, this study will further examine these two training methods and their effects on speaking abilities of Dutch EFL learners.

2. Theoretical framework

2.1. Improving speaking ability

When it comes to speaking ability in a foreign language, many variables play a role in the acquisition and production process of the language learner. In *Methodology in language teaching: An anthology of current practice*, Shumin (2002) devotes a chapter to factors that ought to be considered. According to Shumin, there are three main questions that instructors of EFL should keep in mind to help students develop competent speaking abilities: “What affects adult EFL learners’ oral communication? What are the components underlying speaking effectiveness? And how can adult EFL learners’ speaking abilities be improved?” (Schumin, 2002, p. 205). The answers to the first two questions provide a categorized overview of the elements underlying speaking ability and are therefore used to construct a framework for assessing speaking ability in this study.

The factors affecting EFL learners’ oral communication named by Shumin are: *age or maturational constraints, aural medium, sociocultural factors* and *affective factors*. According to Oxford (1990, as cited in Shumin, 2002), among the most important of these determiners are the affective factors. These emotional constraints can form a barrier that prevents the speaker of a foreign language from speaking uninhibitedly. A widely researched affective factor is *language anxiety.* In his handbook on *Principles of Language Learning and Teaching*, Brown (2000) dedicates a significant section to language anxiety, building on Spielberger’s definition of anxiety as "the subjective feeling of tension, apprehension, nervousness, and worry associated with an arousal of the autonomic nervous system" (Spielberger, 1981, p. 1, as cited in Brown, 2000, p. 161). When this emotional state actually leads to poorer oral proficiency, it is regarded as *debilitative language anxiety* (Alpert and Haber, 1960, as cited in Brown, 2000, p. 161). However, language anxiety is not the only affective factor that impacts oral proficiency, nor is it a factor that stands uninfluenced by other affective factors. One such other factor is *self-efficacy*: the belief in your own capabilities to perform an activity successfully (Brown, 2000, p. 156). According to Brown, this factor is a determinant for many other affective factors,

including language anxiety and self-esteem. This suggests both a negative correlation and a causal relationship between self-efficacy and language anxiety: students with lower self-efficacy may score higher in reported language anxiety as a result. In short, with self-efficacy and language anxiety being important affective factors for oral communication, enhancing self-efficacy and reducing language anxiety can positively benefit EFL learners' speaking proficiency. Therefore, language anxiety and self-efficacy will be used as variables to measure the effects of explicit phonetic instruction and film-based training on speaking abilities of EFL learners. Apart from separately measuring these factors, the predictive relation between the two will be analyzed as well if one or both are affected by the training methods under investigation.

When looking at the components underlying speaking effectiveness, Shumin mentions four components: *grammatical competence, strategic competence, discourse competence* and *sociolinguistic competence.* A specific determiner of grammatical competence that fits well in this experiment is *mechanics,* which refers to "basic sounds of letters and syllables, pronunciation of words, intonation, and stress" in the context of speaking ability (Scarcella and Oxford, 1992, p. 141, as cited in Shumin, 2002). Since explicit phonetic instruction focuses on these items precisely, it is the improvement in mechanics that will be measured in this experiment rather than strategic competence, discourse competence or sociolinguistic competence, which are not the point of focus of explicit phonetic instruction.

2.2. Research gap and research questions

So far, EPI has shown to improve the mechanics of grammatical competence for speaking ability to a certain extent by improving segmental pronunciation (Saito, 2013). In Dutch classrooms brief EPI has also been shown to be effective in improving oral perception and to a lesser extent oral production (Hommel, 2017), or vice-versa (Pieper, 2017). Also, some evidence has been found that EPI could positively affect self-efficacy. For example, in a study conducted by Nelson (2017), students were able to adapt their judgements after EPI to more accurately describe their capability level. Although research has pointed out the interrelatedness of self-efficacy and language anxiety (Brown, 2000), no research has yet been conducted to measure the effect of EPI on language anxiety.

Using English films as a basis for improving speaking skills of students has not yet been tested in EFL teaching in the Netherlands. Instead, an even more dynamic approach to improve speaking skills based on drama exercises has recently been explored in EFL classrooms (Bastian, 2015). Bastian found a positive effect of drama exercises on oral proficiency of anxious and non-anxious language students. According to Shand (2008) and Atas (2015), drama techniques can significantly lower the level of speaking anxiety of foreign language learners. The drama exercises used in Atas (2015) also involved the use of films and film drama scripts, which were used by students to act out certain scenes and practice for a final performance. Drama lessons have also proven to increase fluency and increase EFL learners' comfort levels while speaking English (Galante, 2013), but no effect has yet been researched on learners' self-efficacy. Furthermore, no direct connection has yet been made between drama training and improvement of mechanics, such as segmental pronunciation. Lastly, using film merely for imitation has shown positive results in pronunciation improvement in Chinese learners of English (Ding, 2007 and Wang, 2015), but no connection with self-efficacy or language anxiety has yet been researched. Some studies have tested the training of segmental features through using films, but none of their designs included a theoretically substantiated training program using films as materials (Wayne, 2009; Florente, 2016).

The research gap on this issue is twofold. Firstly, Shumin (2002) suggests that effective oral training methods are those that are based on factors affecting EFL learners' oral communication and components underlying speaking effectiveness. So far, the effects of EPI on the affective factor anxiety have been uninvestigated and although the use of film merely for imitation has shown positive results in pronunciation improvement in Chinese learners of English (Ding, 2007 and Wang, 2015), no connection with self-efficacy or language anxiety has yet been researched. Secondly, the lack of research on film-based instruction in Western countries, where the focus on intercultural competence is less relevant, makes a study into this training method worthwhile.

This study therefore aims to compare the effects of two training methods on speaking ability. Speaking ability will be measured using three variables following the building blocks by Shumin (2002): self-efficacy, anxiety and mechanics. The main research question of this study is therefore as follows:

- *What are the effects of explicit phonetic instruction (EPI) training and performative output (PO) training on improving EFL speaking abilities?*

To answer this main question, the following sub-questions need to be answered:

- *What are the effects of explicit phonetic instruction training and performative output training on self-efficacy?*
- *What are the effects of explicit phonetic instruction training and performative output training on language anxiety?*
- *What are the effects of explicit phonetic instruction training and performative output training on production of mechanic aspects?*
- *If training effects are found, are training effects on self-efficacy related to the effects on language-anxiety?*

3. Method

3.1. Participants

Due to the COVID-19 crisis, schools in the Netherlands were closed during the time of the experiment. Classes were taught digitally and teachers were asked not to impose any extra workload upon the students beside the school's base curriculum. Therefore, only students who volunteered to participate took part in the study. The participants were 2nd year VWO (Voortgezet Wetenschappelijk Onderwijs: preparatory academic education) high school students of the Metis Montessori Lyceum (MML) in Amsterdam, the Netherlands. Due to the small number of expected participants, the participants were to be divided in two groups, each of which would follow a different training program: the EPI training or the PO training. The groups were to be called the EPI group and the PO group. No separate control group was to be used due to the small number of students available, and the design would follow a quasi-experimental setup in an interrupted time-series design between groups, thus turning the two participant groups into their own control groups. At the start of the experiment, the participant size of students turned out to be much larger than expected. Instead of a few students from two classes, three full classes participated in the experiment. It was therefore decided to use the third participating class as a control group, not undergoing any training session. The EPI class consisted of 29 students, 21 male and 8 female. The PO group consisted of 30 students, 24 male and 6 female. The control group consisted of 28 students, 13 male and 15 female. All students were between 13 and 15 years of age during the experiment.

3.2. Materials

3.2.1. Training programs

The EPI training program used was adapted from the training set up by Pieper (2017). Pieper (2017) focused on two specific English phonemes that were found to be most problematic for Dutch learners of English (Van den Doel, 2006; Koster and Koet, 1993; and Lowie, 2004; as cited in Pieper, 2017). These phonemes are the English /æ-e/ vowel contrast and the English word-final [±voice] plosive consonant

contrast. Both were also considered required features to be learned by Dutch learners of English, according to Van Hattum (2014). Due to the time restrictions the experiment in this study was bound to, only one of these phonemes was the subject of testing in this study: the English /æ-e/ vowel contrast. The training program focused on giving explicit phonetic instruction on the differences between the English /æ/ and /e/ sounds. The training program comprised one lesson of 40 minutes and is provided in Appendix 1, Appendix 2 and Appendix 3.

For the design of the PO training, Shumin's recommendations on how to improve adult EFL learners' speaking abilities were used (2002). In general, effective classroom activities are those that are derived from analysis of the affective factors of oral communication and components underlying speaking effectiveness, provide sufficient language input and support spoken output. Specifically for this training program, audiovisual stimuli can be used to bring seeing, hearing and physical participation together. Additionally, the use of a structured dialogue and a role-playing activity can encourage students to speak a foreign language (2002, p. 210). The film materials were thus required to meet four prerequisites: they needed to contain both visual and auditory stimuli, they needed to include sufficient dialogue for the students to work with, they had to be spoken in British English (Received Pronunciation was the target accent used by teachers at MML) and they had to contain a substantial and more or less equally divided use of the target phonemes. Based on these conditions, an English film trailer of *The Favourite* by Yorgos Lanthimos was selected for the training session (SearchlightPictures, 2018). Following the suggestions in Atas (2015) and Wayne (2009), a transcript of the trailer containing the sentences with target phonemes was provided for students to read. The training program focused on performative output by the students using the film trailer and the corresponding script. Multiple studies have reported on the use of movies or movie trailers in the EFL classroom. An important thing to note is that although the use of film fragments for phonological instruction for stress and pitch has been suggested (Jeon, 2003, p. 67), no frameworks for training specific vowel contrasts through using film have yet been researched. Another vital thing to remark is that most of these approaches span a substantial amount of lessons (Romero and Bobkina, 2017;

Longo, 2013; Jeon, 2003), sometimes even a 30-hour curriculum (Longo, 2013). For these two reasons, it was difficult to design a theoretically substantiated training program comprising only one (digital) session. Due to a lack of precedence, the use of the target vowel contrast in the training session was integrated into existing designs for classroom activities (Longo, 2013; Romero and Bobkina, 2017; Jeon, 2003). The resulting 40-minute online training session comprised an introduction (5 minutes), a pre/mute-viewing activity with a prediction exercise to help students establish the context of the clip (10 minutes) (Romero and Bobkina, 2017), a multimodal exercise of sound and text (Romero and Bobkina, 2017) focused on filling in the blanks (10 minutes) (Jeon, 2003) and a roleplay exercise using the dialogue in the transcript (10 minutes) (Romero and Bobkina, 2017). In the introduction, the teacher introduced the topic and the learning objectives through PowerPoint. During the pre/mute-viewing, the students watched the YouTube trailer of *The Favourite* without sound. In the prediction exercise that followed, the students answered questions on their expectations of the genre and characters of the movie. The multimodal exercise of sound and text focused on the target phonemes in the clip that were omitted in the text. This resulted in a fill-in-the-blanks exercise, of which an example is provided here:

> **Queen Anne:** [after her fall] They were all staring, weren't they? I can **_____ (3)** even if I can't see. **_____ (4)** I heard the word **_____ (5)**! **_____ (6)** and ugly!
>
> **Lady Sarah: _____ (7)**, no one but me would dare **_____ (8)** I did not.

Finally, the roleplay exercise required the students to use the dialogue (a separate version with the previously omitted words was provided) in an interactive oral activity, where performative spoken output using the target phonemes was the objective. The training program is provided in Appendix 4, Appendix 5, Appendix 6, Appendix 7 and Appendix 8.

3.2.2. Speaking ability tests

In order to measure improvement in mechanics, the students' production of the English /æ-e/ vowel contrast was evaluated using part of the item list in the production experiment of Pieper (2017). Only the items on English /æ-e/ vowel contrast from that list were used here. The vowel stimuli consisted of 4 non-words containing the /æ/ vowel and 4 words containing the /e/ vowel with a CVC (consonant, vowel, consonant) structure. In the production experiment, every participant was given a list of 4 English nonwords to pronounce. All test items were spelled in IPA (the International Phonetic Alphabet), but since none of the students were familiar with this spelling, every non-word was supplemented with three examples in regular English that contained the same phoneme. For the full production experiment, see Appendix 9.

Self-reported language anxiety was measured by using the Foreign Language Classroom Anxiety Scale (FLCAS) developed by Horwitz, Horwitz and Cope (1986), reported a reliable tool for identifying language learning anxiety in the EFL context (Javid, 2014). The students in both the experiment group and the control group filled in this survey in pre-test 1, pre-test 2 and the post-test. Participants were asked several questions with answers scored on a five-point Likert scale, with values ranging from "strongly agree" to "strongly disagree". To ensure validity, some questions were coded reversely and for part of the scales the strongly agree/ strongly disagree sides were switched. The items in the survey represent feelings on communication apprehension, test-anxiety and fear of negative evaluation in the foreign language classroom. A total of 20 items were presented in the test. For the adjusted survey, see Appendix 10.

Self-reported self-efficacy was measured by using a modified version of the Questionnaire of English Self-Efficacy (QESE) as suggested by Wang, Kim, Bong and Ahn (2013). This questionnaire was found to be an effective instrument for measuring self-efficacy among English language learners. Most questions were therefore taken from the original questionnaire proposed by Wang *et al*. In the original questionnaire, the questions measured self-efficacy for listening, speaking, reading and writing in

English. This study however is only concerned with factors underlying speaking ability and the ability to perceive and produce certain phonemes. As a result, only questions aimed at listening and speaking were used (questions 1, 3, 5, 7, 8, 9, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 and 25 in this study's questionnaire, see Appendix 11). Wang *et al.* also argued for the use of more customized questions that specifically match the ability levels of the students taking the questionnaire (2013). Accordingly, several questions (2, 4, 6, 10, 11, 12 and 24) were added assessing the ability to perceive and produce the target phonemes in this study. After this revision, the questionnaire contained 25 items total. The students in both the experiment group and the control group filled in this survey in the pre-test 1, pre-test 2 and the post-test. For the adjusted survey, see Appendix 11.

*The increase in participant numbers (from a maximum of 8-12 students to a total of 50 students who completed pre-test 1) was only made clear on the day of pre-test 1. At this time, the execution of the pre-test experiments had already been adjusted to a small sample size in a digital classroom environment of Microsoft Teams. At the same time, it was set up in such a way that it anticipated on a possible physical implementation of the post-test, due to a change in school policy after loosening COVID-19 restrictions. In concrete terms, the questionnaires measuring anxiety and self-efficacy were set up in Word documents for students to fill in and send back to the email address of the researcher. The recorded audio file of the production test was also to be sent to the researcher's email. If classes were to be resumed in physical form, the post-test could be printed out and filled out in class. With the participant size unexpectedly quadrupling, data processing suddenly quadrupled as well. Now, emails of 50 students containing the research data had to be processed. Problems that occurred were that not all students managed to hand in their files on time, and/or providing the correct file name, and/ or using the same message with both the text and audio files, and/ or send both the text and audio file. Eventually, only 20 participants completed all test phases. For this reason, and due to the ongoing uncertainties regarding the COVID-19 restrictions, it was decided after pre-test 1 to continue the experiment design of both two pre-tests and a post-test and a control group. This way, even if the control group would be minimized to an invalid size, the analysis could still be done on the

remaining groups over the three test phases. Due to the increase in dataset and processing disturbances, the author requested the credit size of this project to be 25 ECTS instead of 20 ECTS.

3.3. Design

Due to the initial limitations in time, design and participants, it was not possible to add a control group to the experiment design. Data would therefore be collected using an interrupted time-series design between groups. In this design, the two experiment groups that underwent training would be able to function as their own control group. The design was based on the Difference-in-Difference Design and the Comparative Interrupted Time Series Design as suggested for educational evaluation research by Somers, Zhu, Jacob and Bloom (2013, pp. 27-67). These designs compare post-training ability levels of participant groups to baseline ability levels that have been measured over time. By determining the baseline ability level over a certain time period, natural ability growth over time (due to the developmental stage high school students are in) can be controlled as a factor. The ability levels that were measured in this experiment were the dependent variables, i.e., self-efficacy, language anxiety and segmental pronunciation. The design was made up of two time-series. In the first time-series, the baseline ability level was measured by both groups taking two separate tests with a week time in between, called pre-test 1 and pre-test 2. In both pre-tests, the production experiment, the self-reported self-efficacy questionnaire and the self-reported language anxiety survey were conducted (see Appendix 12). Between time-series one and two, the EPI group underwent the EPI training session and the PO group underwent the PO training session. Subsequently in the second time-series the ability level of the students was measured through a post-test. The control group that was later added to the design followed the same proceedings as the PO and EPI group, except for the training session.

3.4. Procedure

3.4.1. Test and training sessions

The total timespan of the experiment would originally consist of three lessons. Due to the COVID-19 outbreak however, classes were shortened from 60 minutes to 40 minutes per session. As a consequence, it would no longer be possible to conduct the post-test in the same lesson as the training session (lesson three). Therefore, the experiment was divided over a total of four lessons. Furthermore, due to other schedule restraints the planned training session (lesson three) was delayed by one week. These two schedule changes made it inevitable that the post-test could only be conducted three weeks after pre-test 2, as both pre-tests had already been executed. The last minute addition of a control group partially made up for this design deficiency, because it would allow the ability levels from the post-tests of the EPI group and the PO group to be compared with the ability levels from the post-test of the control group. All lessons were conducted by the author of this thesis (referred to as "teacher"), who was not the classes' original English instructor.

Pre-test 1 took place during the first lesson, pre-test 2 during the second lesson, the training programs during the third lesson and the post-test during the fourth lesson. Due to the COVID-19 crisis, it was not possible to conduct the pre- and post-tests in a fully controlled environment, since all participants had to stay at home while taking the tests. Therefore, every participant was sent the production experiment, the self-reported self-efficacy questionnaire and the self-reported language anxiety survey digitally via e-mail, each in a different document. The tests and the training sessions took place during the regular English language class schedule. To administer the tests as controlled as possible, the students were only sent the questionnaires at the beginning of lesson one. During lesson one, pre-test 1 was administered. The students were given oral instructions in Dutch on how to fill in the self-efficacy questionnaire and self-reported language anxiety survey through Microsoft Teams by their teacher. They then filled in the two surveys. Subsequently, they received oral instructions in Dutch on how to complete the production experiment. For this, they needed to pronounce the non-

words on the item list with target phonemes while recording themselves through a recording application (online-voice-recorder.com). After they had completed the tests, they sent their recording along with the self-reported self-efficacy questionnaire and the self-reported language anxiety survey back to the instructor via e-mail. One week later, pre-test 2 followed during lesson two in the exact same manner. For lesson three, the EPI group met in Microsoft Teams with their teacher to receive the explicit phonetic instruction training and the PO group met with their teacher to receive the performance output training. One week later, the post-test was administered in the same manner as the pre-tests during the fourth session.

3.4.2. Data processing

Mean scores of self-efficacy and anxiety were calculated on the basis of the scores assigned to the questions in the QESE and FLCAS. This resulted in a mean score for self-efficacy (between 1 and 7) and anxiety (between 1 and 5) per participant per test phase. It should be noted that treating ordinal data from Likert-scale designs as interval data is controversial (Liddell and Kruschke, 2018), because they do not measure true numerical values and do not reflect interval distances. However, when containing at least 5 categories with similar thresholds between them (the FLCAS contained five categories; the QESE seven), processing Likert-scale data as interval data has shown valid results (Rhemtulla, Brosseau-Liard and Savalei, 2012). In the QESE that was used in pre-test 1, question 25 was missing the numbers 1 to 7 in the grading scale. Because this resulted in inconsistent completion of this question with 6 out of 20 participants, it was decided to exclude question 25 from the calculation of the mean score. Mean scores were thus calculated over the first 24 questions for pre-test 1, pre-test 2 and the post-test respectively. Some of the FLCAS questions were reverse-coded in the questionnaire and thus had to be reverse-coded again for processing. The document used to determine the scores of the questions is provided in Appendix 13. The segmental pronunciation recordings were rated by two British native speakers of English. Identical to the rating task in Pieper (2017), this was conducted through a forced choice test in which the native speakers had to choose which phoneme they heard in every recording.

If both native speakers had perceived the correct pronunciation, the item was rated as ‘correct’ (or 1 for later analysis). If one or both of the native speakers had perceived an incorrect pronunciation, the item was rated as ‘incorrect’ (or 0 for later analysis). Due to the COVID-19 restrictions, the rating experiment with native speakers was conducted from their own homes. They were sent all the audio files and listed their forced choice answer in a shared spreadsheet that was made available by the researcher.

4. Results

Of all 87 students in the three classes that started the experiment, a total number of 20 participants fully completed pre-test 1, pre-test 2 and the post test, of which 6 in the control group, 6 in the EPI training group and 8 in the PO training group. Participants that only completed part of the questionnaires and/ or did not participate in every test phase and/ or did not complete all of the production tasks were excluded from the analysis. Mean scores and standard deviations for self-efficacy and language anxiety of all groups and all test phases are presented in Tables 1 and 2. Figure 1 and 2 represent the mean scores for self-efficacy and language anxiety of all groups and all test phases in a line graph.

4.1. Self-efficacy and language anxiety

To determine the effects of the training programs on self-efficacy, the mean scores for self-efficacy were analyzed as dependent variables using a linear mixed effects model in R with the lme4 package, following the design of Yang and Chen (2018). In the model, test phase (pre1, pre2 and post) and group (TE (EPI training group), TP (PO training group) and C (Control group)) were set as fixed factors. Participants was set as a random factor. The effect of these variables was analyzed by building models in a stepwise fashion, starting from an empty model containing only the random factor. Fixed factors were added one by one, resulting in a best-fit model containing the main effects of test phase and group, and their interaction. An overview of the consecutive models is presented in Table 3. The ANOVA function in R was used to compare the models in order to find the model with the best fit. The summary of the best-fit model was then used to determine which factors or interactions between factors significantly contribute to the fit of the model.

Table 1. Self-efficacy mean scores and standard deviations per group in pre-test 1, pre-test 2 and post-test

	Pre-test 1	**Pre-test 2**	**Post-test**
Control group (N=6)	5.45 (0.19)	5.57 (0.28)	5.52 (0.31)
PO group (N=8)	5.29 (1.11)	5.30 (1.19)	5.66 (1.09)
EPI group (N=6)	5.78 (0.59)	5.85 (0.65)	6.08 (0.82)

Table 2. Language anxiety mean scores and standard deviations per group in pre-test 1, pre-test 2 and post-test

	Pre-test 1	**Pre-test 2**	**Post-test**
Control group (N=6)	2.62 (0.43)	2.67 (0.55)	2.73 (0.65)
PO group (N=8)	2.76 (0.55)	2.65 (0.52)	2.51 (0.69)
EPI group (N=6)	3.03 (0.55)	3.07 (0.69)	2.85 (0.49)

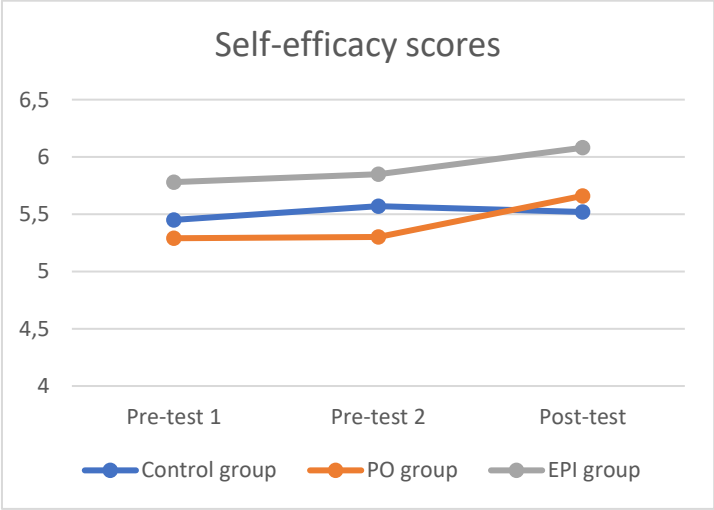

Figure 1. Overview of self-efficacy scores in pre-test 1, pre-test 2 and post-test

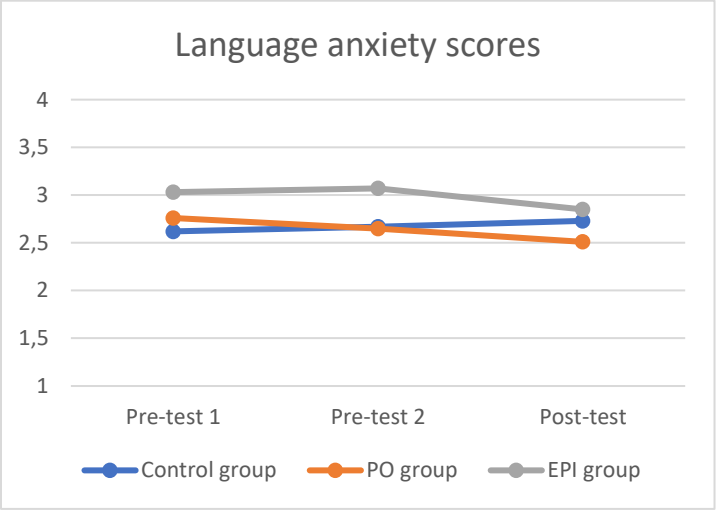

Figure 2. Overview of language anxiety scores in pre-test 1, pre-test 2 and post-test

Table 3. Model build-up procedure

Model	**Factor added**
Model 0	Participant
Model 1	Test phase
Model 2	Group
Model 3	Test phase : Group

4.1.1. Pre-test one versus pre-test two

4.1.1.1. Self-efficacy

None of the models outperformed Model 0 (p = .20; p = .36; p = .57), which means that none of the fixed factors and their interactions improved the model fit. Therefore, no main effect for test phase or group and no interaction effect for test phase and group was found on self-efficacy and between pre-test one and pre-test two, no significant change in self-efficacy among the participants has taken place.

4.1.1.2. Language anxiety

None of the models outperformed Model 0 (p = .63; p = .49; p = .31), which means that none of the fixed factors and their interactions improved the model fit. Therefore, no main effect for test phase or group and no interaction effect for test phase and group was found on language anxiety and between pre-test one and pre-test two, no significant change in language anxiety among the participants has taken place.

4.1.2. Pre-test 2 versus post-test

4.1.2.1. Self-efficacy

The ANOVAs used to compare models showed that both Model 1 and Model 3 outperformed Model 0, with Model 1 as the best-fit. The summary of Model 1 showed a significant main effect of test phase on self-efficacy (0.2 st lower, SE= 0.079, df = 20.000 t = -2.52, $p < .05$). Subsequent analysis on each group showed that self-efficacy was reported significantly lower in pre-test 2 than in the post-test only in the PO group (0.36 st lower, SE = 0.105, df = 8.000, t = -3.469, $p < 0.01$). This means students reported higher self-efficacy after receiving the PO training. Although mean scores of self-efficacy also increased slightly for the EPI group, this change was not found significant. Table 4 displays the outcomes of the model summaries for the main effect of test phase and the interaction effect between test phase and the separate groups.

Table 4. Outcome of the mixed-effect linear regression of test phase (pre2 vs. post) over all groups and over separate groups on self-efficacy

	Coefficient	**Std. Error**	**df**	**t-value**	**Sig.**
Test phase (pre2)	-0.20000	0.07937	20.00000	-2.52	**.0204**
Test phase x Group					
pre2:TE	-0.2333	0.1503	6.0000	-1.552	.172
pre2:TP	-0.3625	0.1045	8.0000	-3.469	**.0085**
pre2:TC	0.0500	0.1074	6.0000	0.466	.658

The reference category was post-test for the fixed factor test phase and C for the fixed factor group. Significant p-values are in bold.

4.1.2.2. Language anxiety

None of the models outperformed Model 0 (p = .14; p = .29; p = .22), which means that none of the fixed factors and their interactions improved the model fit. Therefore, no main effect for test phase or group and no interaction effect for test phase and group was found on language anxiety and between pre-test two and post-test, no significant change in language anxiety among the participants has taken place. Table 2 shows that although the control group had a minor increase of language anxiety, the EPI and PO groups had slightly decreased scores in language anxiety after training. However, for the PO group that decrease is barely larger than the decrease between pre-test 1 and pre-test 2.

4.1.3. Correlation self-efficacy and language anxiety

Due to the students' higher self-efficacy after receiving the PO training and the negative correlation between self-efficacy and language anxiety pointed out by Brown (2000), a correlation analysis between the two factors was executed to find a possible indirect relationship between PO training and reduced language anxiety, with self-efficacy as the mediating factor. The correlation analysis was carried out using Kendall's Tau (Field, 2013, pp. 858-860), using the PO group's self-efficacy and language anxiety scores from pre-test 2 and the post-test as variables. The Kendall's Tau rather than the Spearman's correlation coefficient was used due to the small size of the dataset. Analysis as summarized in Table 5 showed there was a strong, negative correlation between self-efficacy and language anxiety, which was statistically significant ($\tau b = -.612$, $p < .01$). This can be interpreted as evidence for an indirect relationship between PO training and reduced language anxiety, with self-efficacy as the mediating factor.

Table 5. Correlations between self-efficacy and language anxiety (N=16)

	τb	**Std. Error**	**Sig.**	**95% Confidence Interval**	
				Lower	**Upper**
Language anxiety	-.612	0.153	**-.002**	-.847	-.255

The reference category was self-efficacy for the outcome variable language anxiety. Significant p-values are in bold. Confidence interval and standard error were based on 1000 bootstrap samples.

4.2. Segmental pronunciation

To determine the effects of the training programs on segmental pronunciation, a binomial logistic regression analysis was conducted in SPSS, in which the outcome variable was the outcome of the rated production task (correct vs. incorrect). Test phase (pre-test 1, pre-test 2 and post-test) and group (TE for the EPI group, TP for the PO group and C for the control group) were set as fixed factors. Participant number and stimulus (4 non-words per test phase per participant) were set as random factors. The reference categories in the analysis between pre-test 1 versus pre-test 2 (to determine the effect of time in the baseline measurement) were pre-test 2 for the fixed factor test phase and group TP for the fixed factor group. Similarly, the reference categories in the analysis between pre-test 2 versus post-test (to determine the effect of the training session) were pre-test 2 for the fixed factor test phase and group TP for the fixed factor group. A complete overview with segmental pronunciation scores in all tests is provided in Figure 3 and Table 6. Correctly pronounced items were rated 1 and incorrectly pronounced items were rated 0, thus a higher mean signifies more correctly pronounced items.

Table 6. Segmental pronunciation mean scores and standard deviations in pre-test 1, pre-test 2 and post-test

	Pre-test 1	**Pre-test 2**	**Post-test**
Control group (N=6)	0.44 (0.15)	0.50 (0.15)	0.44 (0.15)
PO group (N=8)	0.46 (0.12)	0.50 (0.12)	0.58 (0.12)
EPI group (N=6)	0.50 (0.15)	0.50 (0.15)	0.50 (0.15)

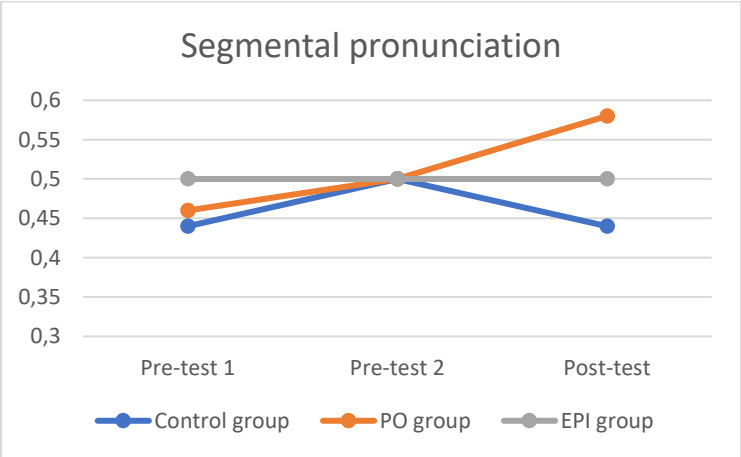

Figure 3. Overview of language anxiety scores in pre-test 1, pre-test 2 and post-test

4.2.1. Pre-test 1 versus pre-test 2

No significant main effect was found of test phase on segmental pronunciation (p = .7), although both the control group and the PO group performed slightly better in pre-test 2 than in pre-test 1. No main effect was found for groups on segmental pronunciation (p = .99) and no interaction was found of test phase and group on segmental pronunciation (p = .97). The model output of the separate and interactive factors can be seen in Table 7.

Table 7. Summary of the results of the mixed-effect binary logistic regression models with test phase (pre2 vs. pre1), group (TE and TP vs C) and their interaction as predictors of segmental pronunciation

	Coefficient	Std. Error	Sig.	95% Confidence Interval	
				Lower	Upper
Group (C)	0.008	0.915	.993	-1.800	1.816
Group (TE)	0.008	0.915	.993	-1.800	1.816
Group (TP)	0				
Test phase (Pre1)	-0.205	0.641	.749	-1.472	1.062
Test phase (Pre2)	0				
Test phase x Group					
Pre1:C	-0.044	0.954	.963	-1.929	1.841
Pre2:C	0				
Pre1:TE	0.205	0.954	.830	-1.679	2.090
Pre2:TE	0				
Pre1:TP	0				
Pre2:TP	0				

A coefficient of 0 means there was no analyzable relationship between the set factors. Significant p-values are in bold.

4.2.2. Pre-test 2 versus post-test

No significant main effect was found of test phase on segmental pronunciation (p = .94), although the control group scored slightly lower and the PO group slightly higher on the post-test than on pre-test 2. The mean scores with standard deviations are presented in Table 6. No main effect was found for groups on segmental pronunciation (p = .9) and no interaction was found of test phase and group on segmental pronunciation (p = .85). The model output of the separate and interactive factors can be read in Table 8.

Table 8. Summary of the results of the mixed-effect binary logistic regression models with test phase (post vs. pre2), group (TE and TP vs C) and their interaction as predictors of segmental pronunciation

	Coefficient	Std. Error	Sig.	95% Confidence Interval	
				Lower	Upper
Group (C)	-0.002	0.812	.998	-1.606	1.602
Group (TE)	-0.003	0.812	.997	-1.606	1.601
Group (TP)	0				
Test phase (Post)	0.417	0.648	.520	-0.862	1.696
Test phase (Pre2)	0				
Test phase x Group					
Pre2:C	-0.697	0.991	.483	-2.656	1.262
Post:C	0				
Pre2:TE	-0.417	0.990	.674	-2.372	1.538
Post:TE	0				
Pre2:TP	0				
Post:TP	0				

A coefficient of 0 means there was no analyzable relationship between the set factors. Significant p-values are in bold.

5. Discussion

5.1. Answering the research questions

As expected, all three dependent variables (self-efficacy, language anxiety and segmental pronunciation) did not differ significantly in pre-test 2 from pre-test 1. Firstly, this shows that the students' baseline over the first time-series remains the same without receiving a training. Secondly, it shows that taking the test for a second time, thus increasing the students' affinity with it, has not significantly influenced the students' reported and produced ability levels. The main goal of this study however was to see what the effects of explicit phonetic instruction training and performative output training are on EFL speaking abilities. Results from the second time-series show that performative output training had an effect on speaking abilities when it comes to self-efficacy, showing a significant increase in self-efficacy in the post-test of the PO group. The EPI group also showed a slight increase in self-efficacy after training, but this was not found significant. Thus, although it was mentioned that in some research EPI had positively affected self-efficacy (Nelson, 2017), this was not confirmed by this study's results. The results of this study do however show a link between performative training and beliefs of self-efficacy in secondary education, which makes further research on this subject desirable. As for language anxiety, the EPI training and the PO training both had no significant influence on the students' feelings. For the EPI training, this result is neither affirmative of nor contradictory to prior research, because no research had yet been conducted to measure the effect of EPI on language anxiety. For the PO training, the results do not match the findings of Shand (2008) and Atas (2015), which state that in-class drama exercises can significantly lower the levels of speaking anxiety of foreign language learners. However, a strong, negative correlation was found between self-efficacy and language anxiety in the PO group, suggesting an indirect relationship between PO training and reduced language anxiety with self-efficacy as a mediating factor. This also confirms the assumption in Brown (2000) that self-efficacy is a determinant factor for other affective factors, in this case language anxiety. This study therefore shows the importance of taking into account beliefs of self-efficacy when

teaching foreign languages in secondary education. The results of the post-test for segmental pronunciation show that receiving EPI training did not benefit the students' segmental production. These findings are not congruent with earlier findings in Saito (2013), Hommel (2017) and Pieper (2017). They are especially surprising given the design of the EPI lesson, which was to a degree a direct replication of the lesson design used by Pieper (2017). The students who received PO training did not significantly improve their segmental pronunciation either, which leaves out evidence that performative training could help improve EFL students' oral production of mechanic aspects. The PO group did however show a relatively large increase in correctly pronounced items in the post test compared to pre-test 1. Because this cannot be explained by the undergone training, it could be that other (external) factors influenced the baseline ability of the students measured in time-series one. Students may have had initial problems understanding the phonetic descriptions in pre-test 1, which could have been explained by a peer before pre-test 2. They may also have gained more experience with the recording application after pre-test 1, which could enable them to redo a faulty recording when they might have been hesitant to do this during pre-test 1. These possible factors all the more show that spreading the baseline ability measurement of a student population over at least two occasions pre-training increases the validity of post-training effect measurements.

5.2. Limitations

This research was subject to several limitations, with the most impactful external factor being the ongoing COVID-19 pandemic. Due to the sudden closing of high schools in the Netherlands during the temporary lockdown and the consequential, ongoing policy changes in education, the research design as well as the design of the lesson plans was adjusted several times. The implementation of the EPI lesson in a Microsoft Teams setting deviated from the original classroom setting used by Pieper (2017), which made it more difficult to monitor student participation and may therefore have influenced the results of this study. Moreover, the original lesson design of two 50-minute lessons was compressed into one 40-minute lesson. The time spent on training was therefore also significantly lower in this

research. This also applies to the PO lesson; where most performative training methods span several lessons (Romero and Bobkina, 2017; Longo, 2013; Jeon, 2003), this training session comprised only one lesson. Furthermore, the PO lesson was specifically designed to encourage student performance and active participation in class. Replacing this with an online session that requires active student participation and performative interaction with peers proved quite a challenge. Lack of active participation by some students may very well have influenced the outcome of the results. The differences between these lesson designs and previously researched lesson materials could explain for the discordance between this study's findings on performative exercises and language anxiety and the findings by Shand (2008) and Atas (2015). Lastly, an important limitation to note was the high dropout rate of participants, which caused the initial participant number of 87 students before the start of pre-test 1 to shrink to 20 students after the completion of the post-test. Students had trouble handing in their questionnaires in time and many did not consistently hand in both the questionnaires and the recording file over all three test phases, which led to a high amount of excluded data. This too could have been a result of the work-from-home setting, but it might also be that motivation was low considering the relatively high number of tests compared to the actual educational material that was presented to the students.

6. Conclusion

This study sought to examine what the effects are of EPI training and PO training on improving EFL speaking abilities. To this end, it examined the impact of these two training types on three factors affecting speaking ability: self-efficacy, language anxiety and the production of mechanics. It furthermore examined the correlation between the two affective factors self-efficacy and language anxiety in an EFL classroom setting. PO training significantly increased students' self-efficacy, whereas EPI training caused only a minor, non-significant increase in the students' self-efficacy scores. Neither of the training types had a significant effect on the students' feelings of language anxiety. A significant negative correlation between self-efficacy and language anxiety scores was found between pre-test 2 and the post-test in the PO group, suggesting an indirect relationship between PO training and reduced language anxiety with self-efficacy as a mediating factor and confirming that feelings of self-efficacy are a determinant factor for feelings of language anxiety. The students' production of mechanics was influenced by neither of the training programs. Although some of these findings contradict earlier studies, several findings bring to light something new in educational research, including that performative exercises can help increase students beliefs of self-efficacy. Also, building on the observed negative correlation between self-efficacy and language anxiety in this study, training programs that focus on increasing self-efficacy of students might simultaneously decrease students' feelings of language anxiety. These findings can be helpful for designing efficient training programs for foreign language learning in an era where education has become more and more subject to time and budget limitations. Finally, this study has shown that spreading the baseline ability measurement of students may help reinforce internal validity in educational research and how organizational disturbances and/ or digital teaching may impact teaching practice, by limiting classroom activities and decreasing student participation.

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Formulier lesplan Model Didactische Analyse

Graduate School of Teaching (UU)

<table>
<tr><td>Teacher:
Castor Brouwer</td><td rowspan="2">Learning objectives:
✓ The students are aware of their pronunciation and vocal tract.
✓ The students are aware of sound differences between languages.
✓ The students understand what the /æ-e/ vowel contrast is, from theory as well as from audio.
✓ The students know how to produce the vowel contrast and can listen critically to audio containing /æ/ or /e/.</td><td rowspan="2">Topic(s):
Pronunciation and the /æ-e/ vowel contrast</td></tr>
<tr><td>Date:</td></tr>
<tr><td>Class:</td><td rowspan="2">Prior knowledge:
✓ The class has done some practice with speaking through in-class exercises and presentations.
✓ The class has had no explicit phonetic instruction on English phonemes before.
✓ Though there may be some problems in pronunciation, the class is not consciously aware that /æ-e/ is a difficult vowel contrast.</td><td rowspan="2">Materials:
- Laptop (students and teacher)
- Instruction document (reader)
- Instruction video
- Kahoot
- Mobile phone (students, for Kahoot and recording)
- Online voice recorder</td></tr>
<tr><td></td></tr>
<tr><td>Notes: The official duration of the online lesson is 40 minutes. However, the lessons of separate classes follow each other immediately, requiring every lesson to end a few minutes early for the teacher to set up the next lesson (a Microsoft Teams meeting has to be set up with the next class). At the beginning of each lesson, the teacher needs to manually turn the students' status from meeting 'participant' to 'guest', to prevent the students from muting or 'kicking' the teacher from the meeting. This time-consuming process is carried out during the introduction.</td><td></td><td></td></tr>
</table>

Time	Phase	Contents/ goal of this phase	Teaching method(s)	What do the students do?	What does the teacher do?	What does the teacher need? What do the students need?	Goal checking / evaluation
5 min.	Introduction. The teacher introduces the topic and the learning objectives through PowerPoint.	The students know what this lesson is going to be about and have a clear understanding of the learning objectives. The students are now aware of sound differences between languages.	Classical (digitally)	The students listen and look at the PowerPoint presentation. They ask questions if they don't understand something.	The teacher introduces the topic and the learning objectives. The teacher answers questions if they are asked.	The teacher needs a laptop to mirror the PowerPoint presentation. The students need their laptop.	The teacher asks a few students what the topic and learning objectives of this lesson are.

5 min.	/ae/ /e/ YouTube instruction video https://www.youtube.com/watch?v=ZwdE225mSDQ	The students watch the /ae/ /e/ YouTube instruction video. Afterwards, the students understand what the /æ-e/ vowel contrast is, from theory as well as from audio.	Individually	The students watch the video individually and ask questions if they don't understand something.	The teacher is standby to answer questions about the video.	They all need their laptops and the instruction video.	The teacher asks if the video was clear to the students.
10 min.	Vocal tract explanation through PowerPoint and using the students' reader.	The teacher explains the movements of the vocal tract when pronouncing the /æ-e/ vowels. The students are aware of their pronunciation and vocal tract.	Classical	The students listen to the instruction of the teacher and read along in their reader. They then fill in the exercises.	The teacher gives instructions and remains standby afterwards to help students with the questions.	The students need their reader. The teacher uses the PowerPoint presentation and the reader for instruction.	The students send back the filled-in exercises in the reader via email.

10 min.	Individual practice using https://www.englishclub.com/pronunciation/minimal-pairs-a-e.htm.	The students practice their pronunciation of the /æ-e/ vowels in minimal pairs. The students know how to produce the vowel contrast and can listen critically to audio containing /æ/ or /e/.	Individually	The students practice individually. If they have questions, they can ask the teacher.	The teacher is standby to answer questions about the exercise.	The students need their internet browser. They need their phone to record.	The students pronounce five words containing /æ/ and five containing /e/ using the online voice recorder.
5 min.	Kahoot	A Kahoot quiz is set up using words with either /æ/ or /e/ sounds. The students actively engage in this competitive but fun exercise.	Active group participation	The students participate in the quiz.	The teacher manages the quiz.	The students need to open Kahoot on their mobile phone (or laptop). The teacher needs to use Kahoot as well.	The quiz automatically displays the scores of the students.

3 min.	Summary + questions	The teacher restates the learning objectives and asks if there are any questions.	Classical	The students ask questions if they have them.	The teacher summarizes and answers questions.		There are no more questions.

Appendix 2 *Student reader EPI lesson*

Student reader: /e - æ/ vowel contrast training

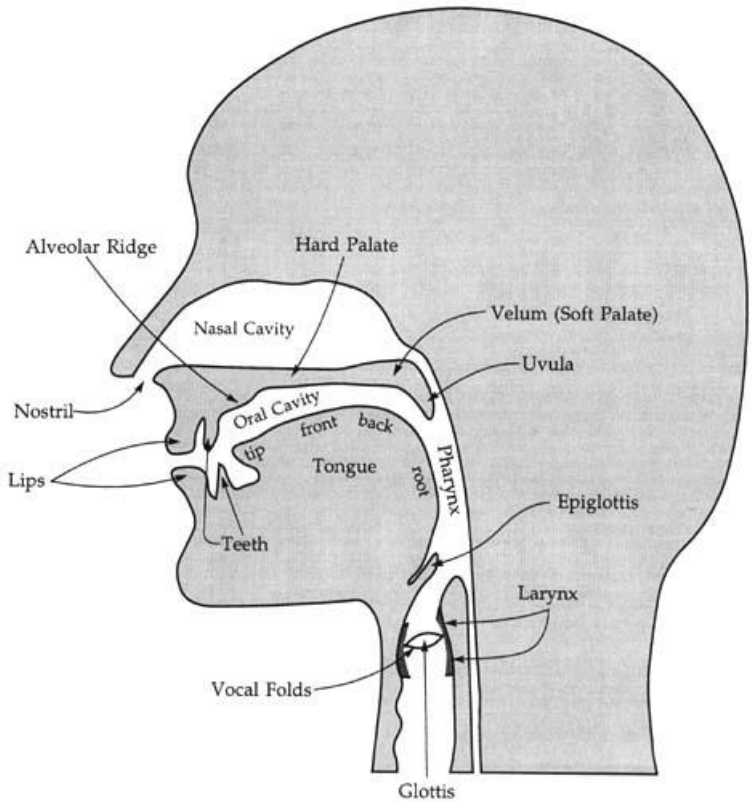
NAME:

CLASS:

Introduction:

You have watched an instructional video on how to pronounce the /e/ vowel vs the /ae/ vowel on YouTube. You have received a PowerPoint presentation on pronunciation and the English /e - æ/ vowel contrast. Start the exercises on the next page individually. Send this document and the recording file (exercise 2) back to *email author*.

1. The vocal tract (het spraakkanaal) exercise.



You can move around the different parts of the picture above to influence your speech and pronunciation.

Vowels (klinkers): lips and tongue

a) Try moving around your lips from a circle **(O)** to a bar **(---)**. What happens?

b) Try moving around your tongue up and down, back to front. What happens?

So how do you make the difference between /æ/ and /e/?

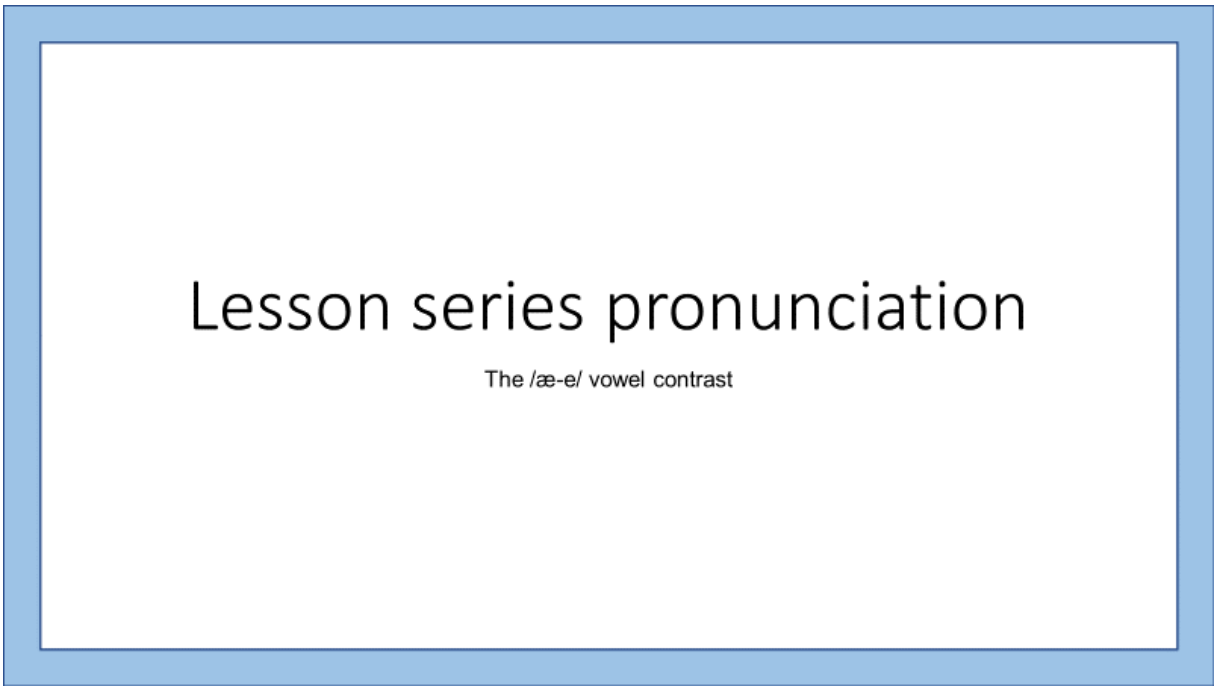
Tongue: for /æ/, your tongue is lower than for /e/.

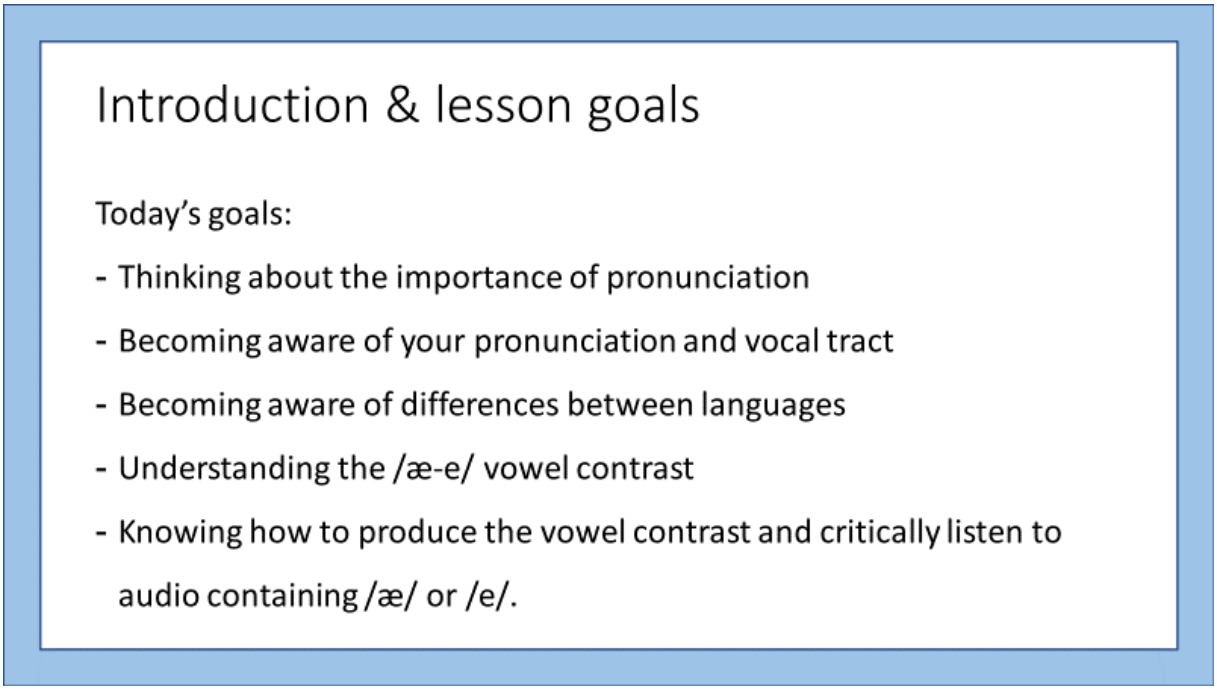
Lips: for /æ/, your mouth is more open. For /e/, your lips are a little stretched, horizontally.

2. Vowel contrast exercise through minimal pairs.

Go to https://www.englishclub.com/pronunciation/minimal-pairs-a-e.htm. Here you can find a list of *minimal pairs*, words that vary only by one having one different sound, in this case the vowel sound /æ/ and the vowel sound /e/. Use this list to practice your pronunciation of the vowel contrast. Use the online voice recorder (https://online-voice-recorder.com/) to record at least five words containing /æ/ and five containing /e/. Replay your file and compare your recording to the audio recordings on the website with the minimal pair list. Send your file back via e-mail to *email author*.

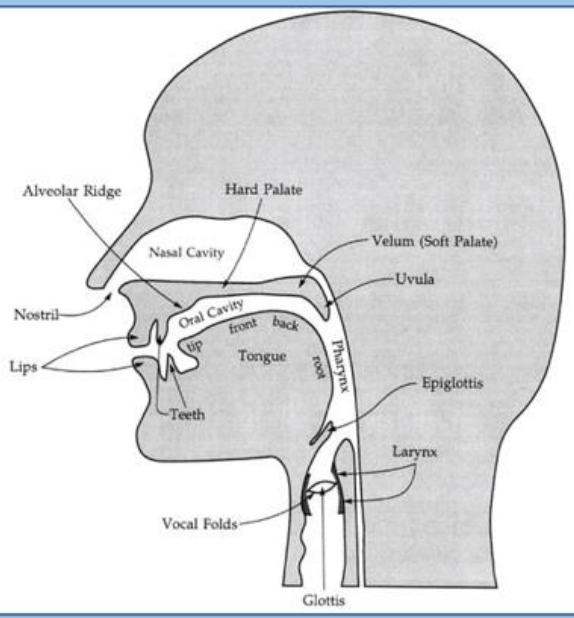
Appendix 3 *PowerPoint presentation EPI lesson*





Pronunciation?

The vocal tract (spraakkanaal)



What can we do with it?

- Two types of sounds: vowels and consonants (klinkers en medeklinkers).

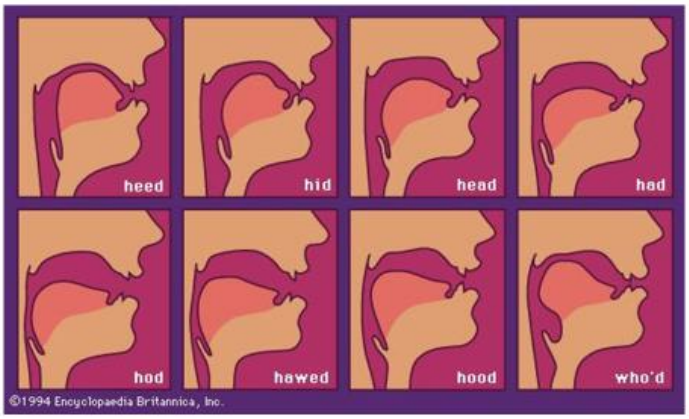
- Influence sound by changing any part of the vocal tract.

Vowels: lips

Make the same sound but try moving your lips around. What happens?

Vowels: tongue

Now, hold your lips still but move your tongue around. What happens?



You can influence your speech by…

- Changing the shape of your lips
- Changing the position of your tongue
- Releasing more or less air

Dutch vs. English

What sounds are unique for Dutch and which are unique for English?

Why are they so difficult to pronounce for the others?

The English /æ-e/ vowel contrast

/æ/: dad, man, and, …

/e/: dead, men, end, …

The English /æ-e/ vowel contrast

- Two different vowels in British English.
- Both sound similar to Dutch speakers, because we only have one vowel: /ɛ/ (as in '*zet*').
- Our ears are not used to the difference, instead we perceive the thing that we know. Our brains work in a funny way!

The English /æ-e/ vowel contrast

- Important difference, because it changes <u>meaning</u>:

c**a**ttle vs. k**e**ttle

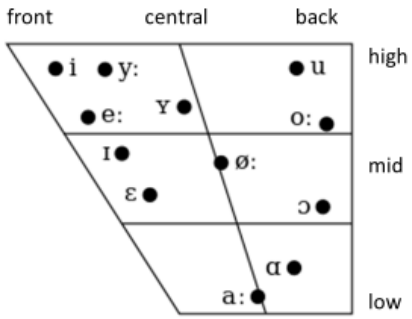
p**a**n vs. p**e**n

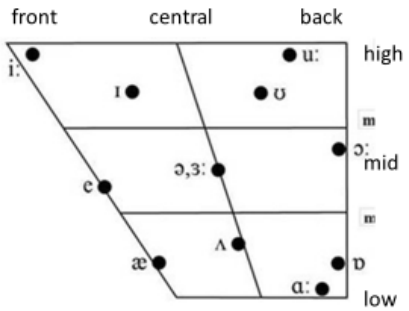
The English /æ-e/ vowel contrast

It might not be clear for an English/American person what you are talking about!

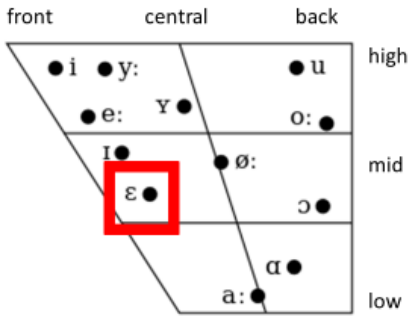
Therefore, it's important that you practice and improve your pronunciation.

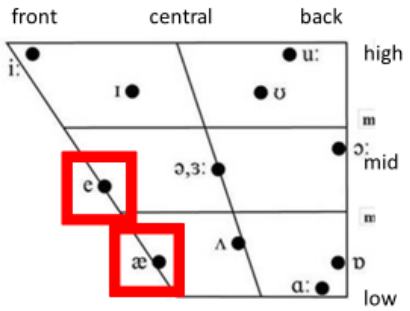
Dutch vowels (left) and English vowels (right)





Dutch vowels (left) and English vowels (right)





Appendix 4 *Training program PO*

Formulier lesplan Model Didactische Analyse

Graduate School of Teaching (UU)

<table>
<tr><td>Teacher:
Castor Brouwer

Date:

Class:</td><td rowspan="2">Learning objectives:
✓ The students are aware of their pronunciation and vocal tract.
✓ The students are aware of sound differences between languages.
✓ The students understand what the /æ-e/ vowel contrast is, from theory as well as from audio.
✓ The students know how to produce the vowel contrast and can listen critically to audio containing /æ/ or /e/.</td><td rowspan="2">Topic(s):
Pronunciation and the /æ-e/ vowel contrast</td></tr>
<tr><td></td></tr>
<tr><td>Notes: The official duration of the online lesson is 40 minutes. However, the lessons of separate classes follow each other immediately, requiring every lesson to end a few minutes early for the teacher to set up the next lesson (a Microsoft Teams meeting has to be set up with the next class). At the beginning of each lesson, the teacher needs to manually turn the students' status from meeting 'participant' to 'guest', to prevent the students from muting or 'kicking' the teacher from the meeting. This time-consuming process is carried out during the introduction.</td><td>Prior knowledge:
✓ The class has done some practice with speaking through in-class exercises and presentations.
✓ The class has had no explicit phonetic instruction on English phonemes before.
✓ Though there may be some problems in pronunciation, the class is not consciously aware that /æ-e/ is a difficult vowel contrast.</td><td>Materials:
- Laptop (students and teacher)
- Instruction document (reader)
- Online voice recorder
- Film trailer</td></tr>
</table>

Time	Phase	Contents/ goal of this phase	Teaching method(s)	What do the students do?	What does the teacher do?	What does the teacher need? What do the students need?	Goal checking / evaluation
5 min.	Introduction. The teacher introduces the topic and the learning objectives through PowerPoint.	The students know what this lesson is going to be about and have a clear understanding of the learning objectives. The students are now aware of sound differences between languages. The students understand what the /æ-e/ vowel contrast is, from theory as well as from audio.	Classical (digitally)	The students listen and look at the PowerPoint presentation. They ask questions if they don't understand something.	The teacher introduces the topic and the learning objectives. The teacher answers questions if they are asked.	The teacher needs a laptop to mirror the PowerPoint presentation. The students need their laptop.	The teacher asks a few students what the topic and learning objectives of this lesson are.

7 min.	Pre/mute-viewing activity with a prediction exercise. https://www.youtube.com/watch?v=SYb-wkehT1g	The students watch the YouTube trailer of The Favourite without sound. They fill in the prediction exercise in the student reader. The teacher recaps afterwards.	Individually	The students watch the video individually and ask questions if they don't understand something. The students actively provide their answers afterwards.	The teacher is standby to answer questions about the trailer and exercise. The teacher checks the answers with the students.	They all need their laptops and the movie trailer on YouTube. The students also need their lesson reader.	The teacher checks the answers to the prediction exercise with the students.
10 min.	Multimodal exercise of sound and text focused on filling in the blanks.	The students watch the trailer again, this time with sound. They complete exercise 2 in the reader (fill in the blanks assignment). The students can listen critically to audio containing /æ/ or /e/.	Individually	The students complete the second exercise in their reader. They actively provide their answers afterwards.	The teacher is standby and checks the answers with the students after they've completed the assignment.	The students need their reader and the movie trailer. The teacher needs the answer key to the fill in the blanks exercise.	The students send back the filled-in exercises in the reader via email at the end of class.

15 min.	Roleplay exercise using the dialogue in the transcript. The transcript contains 4 characters in total (Queen Anne, Lady Sarah, Abigail and Harley. The students take turns, playing each of the characters at least once. They record their best take of the roleplay using the online voice recorder (https://online-voice-recorder.com/).	The students practice their pronunciation of the /æ-e/ vowels in through a roleplay exercise using the dialogue in the transcript. The students know how to produce the vowel contrast and can listen critically to audio containing /æ/ or /e/.	Groups of 4	The students practice in groups of 4. In Microsoft Teams, a maximum number of three sub teams can be created, here each containing 4 students (12 students in total, including the main team).	The teacher is standby and actively visits the sub teams to monitor the roleplay exercise.	The students need to enroll in a sub team. They use the transcript containing the dialogue with /æ-e/ vowels only. They also need the online voice recorder.	The students record their best take of the roleplay exercise.
3 min.	Summary + questions	The teacher restates the learning objectives and asks if there are any questions.	Classical	The students ask questions if they have them.	The teacher summarizes and answers questions.		There are no more questions.

Student reader: /e/ /æ/ vowel contrast training

NAME:

CLASS:

Introduction:

You are going to watch a movie trailer of the film *The Favourite* (2019) by Yorgos Lanthimos, a Greek director and playwright who has been nominated at the Film Festival of Cannes and the Oscars. The film *The Favourite* has been nominated for several Oscars in 2019. Olivia Colman won the Oscar for Best Actress. Before watching the movie trailer, read the exercise on the next page.

1. **Prediction exercise.**

The teacher will show you the movie trailer of *The Favourite* without sound. Pay attention and answer the questions below.

a) What could be the genre of the movie?

b) How many main characters do you think this movie has? Describe their character briefly, based on what you have seen in the trailer.

2. Fill in the blanks.

This time, play the trailer again with the sound on. You can pause the trailer and rewind if you have trouble hearing what is being said. Fill in the blanks in the transcript below.

Transcript THE FAVOURITE | Official Trailer | FOX Searchlight

Lady Sarah: Dearest Queen. You are **_____ (1)**. Giving me a palace […] It is a monstrous extravagance, Mrs. Morley. We are at war.
Queen Anne: We won.
Lady Sarah: Oh, it is not over. We must continue.
Queen Anne: Oh. Oh, I did not know **_____ (2)**.

…

Lady Sarah: The Queen is an extraordinary person.

…

Queen Anne: [after her fall] They were all staring, weren't they? I can **_____ (3)** even if I can't see. **_____ (4)** I heard the word **_____ (5)**! **_____ (6)** and ugly!

Lady Sarah: _____ (7), no one but me would dare **_____ (8)** I did not.

…

Lady Sarah: She's been stalked by tragedy.

…

Queen Anne: Everyone leaves me. And dies. AAH!

…

Abigail: I apologize for my appearance. I hoped I might be employed here, by you, as something.

Lady Sarah: A monster for the children to play with, perhaps.

Abigail: GRR.

…

Harley: It is important to make new **_____ (9)** in court, is it not?

…

Abigail: You're so beautiful.

Queen Anne: Stop it, you mock me.

Abigail: If I were a **_____ (10)**, I would ravish you!

…

Lady Sarah: You have become close to Abigail. She is a viper.

Queen Anne: You're **_____ (11)**.

Lady Sarah: You must **_____ (12)** Abigail away.

Queen Anne: I do not want to.

…

Lady Sarah: Let's shoot something.

…

Lady Sarah: Sometimes, it is hard to **_____ (13) _____ (14)** you have loaded the **_____ (15)** or not.

…

Abigail: I must take control of my circumstance.

…

Abigail: Throw!

…

Abigail: I'm on my side. Always!

…

Harley: Favor is a breeze **_____ (16)** shifts direction all the time. **_____ (17)**, in an instance, you're **_____ (18)** sleeping with a bunch of scabrous whores.

…

Abigail: As it turns out, I'm capable of much unpleasantness.

…

Queen Anne: Did you just look at me? Look at me! How dare you! Close your eyes!

…

Abigail: I could not just **_____ (19)** by and **_____ (20)** you destroy me.

…

Lady Sarah: You are enjoying all of this, aren't you?

Queen Anne: Well it is fun to be Queen, sometimes.

…

Lady Sarah: If you do not go, I will start kicking you. And I will not stop.

…

Abigail: My dear **_____ (21)**. How good to see you returned from…

Lady Sarah: _____ (22). I am sure you shall pass through it one day.

3. **Dialogue and roleplay.**
   a) Open the document with the transcript of the trailer containing the dialogue with /æ-e/ vowels. There are four characters in the dialogue. In groups of four, you are going read the dialogue out loud. Every student is a different character. Person one is Queen Anne, person two Lady Sarah, etcetera. You can focus on performance, but your main focus should be on **pronunciation of the words containing /æ-e/ vowels.** Make sure you pronounce these words correctly.
   b) After you finish reading the whole transcript, you switch roles. Do this for a total of four times, so every one of you has performed all four roles in the dialogue.
   c) Determine which role suited each of you best and record your best attempt of the roleplay. One of you turns on the online voice recorder (https://online-voice-recorder.com/) to record your conversation. Send the recording to *email author* and in the email, mention who played which role.

Appendix 6 *Answer key fill in the blanks exercise*

Answer key fill in the blanks exercise

1. Mad
2. That
3. Tell
4. And
5. Fat
6. Fat
7. Anne
8. And
9. Friends
10. Man
11. Jealous
12. Send
13. Remember
14. Whether
15. Pellet
16. That
17. Then
18. Back
19. Stand
20. Let
21. Friend
22. Hell

Appendix 7 *Transcript The Favourite trailer with relevant vowel contrast passages*

Transcript THE FAVOURITE | Official Trailer | FOX Searchlight

1. æ, æ, e, æ, æ

Lady Sarah: You are **mad**. Giving me a **palace** […] It is a monstrous **extravagance**, Mrs. Morley. We are at war.
Queen Anne: We won.
Lady Sarah: Oh, it is not over. We must continue.
Queen Anne: Oh. Oh, I did not know **that**.

2. e, æ, æ, æ, æ, æ

Queen Anne: [after her fall] They were all staring, weren't they? I can **tell** even if I can't see. **And** I heard the word **fat**! **Fat** and ugly!

Lady Sarah: Anne, no one but me would dare **and** I did not.

3. e

Harley: It is important to make new **friends** in court, is it not?

4. æ

Abigail: If I were a **man**, I would ravish you!

5. e, e

Queen Anne: You're **jealous**.

Lady Sarah: You must **send** Abigail away.

Queen Anne: I do not want to.

6. e, e, e

Lady Sarah: Sometimes, it is hard to **remember whether** you have loaded the **pellet** or not.

7. æ, e, æ

Harley: Favor is a breeze **that** shifts direction all the time. **Then**, in an instance, you're **back** sleeping with a bunch of scabrous whores.

8. æ, e

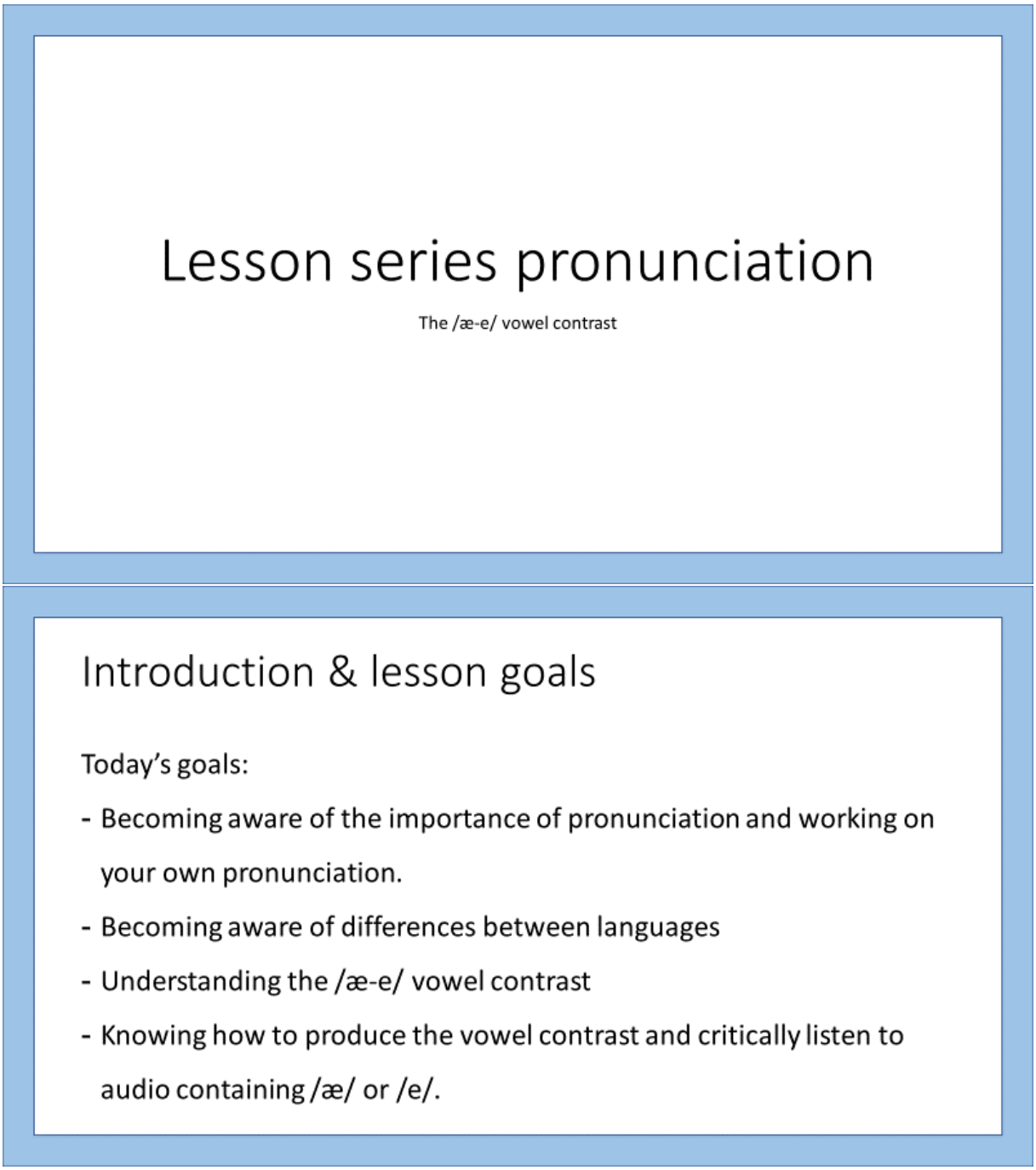
Abigail: I could not just **st<u>a</u>nd** by and **l<u>e</u>t** you destroy me.

9. e, e

Abigail: My dear **fri<u>e</u>nd**. How good to see you returned from…

Lady Sarah: H<u>e</u>ll. I am sure you shall pass through it one day.

Appendix 8 *PowerPoint presentation PO lesson*



Pronunciation?

Dutch vs. English

What sounds are unique for Dutch and which are unique for English?

Why are they so difficult to pronounce for the others?

The English /æ-e/ vowel contrast

/æ/: dad, man, and, …

/e/: dead, men, end, …

The English /æ-e/ vowel contrast

- Two different vowels in British English.
- Both sound similar to Dutch speakers, because we only have one vowel: /ɛ/ (as in '*zet*').
- Our ears are not used to the difference, instead we perceive the thing that we know. Our brains work in a funny way!

The English /æ-e/ vowel contrast

- Important difference, because it changes meaning:

cattle vs. kettle

pan vs. pen

The English /æ-e/ vowel contrast

It might not be clear for an English/American person what you are talking about!

Therefore, it's important that you practice and improve your pronunciation.

Appendix 9 *Production tasks in pre-test 1, pre-test 2 and post-test*

Production task in pre-test 1

Start the recording app on https://online-voice-recorder.com/. Pronounce each of the following four (fake) words once. Read out loud the number before you say the word. Read them out loud in your own time, you don't have to rush things. Behind every fake word are three examples of words with the same vowel sound. After you're done reading out loud the four words, stop the recording. Send the recording with the two questionnaires via e-mail to *email author*.

1. Kæk (bad, gas, sad)
2. Tet (bed, guess, said)
3. Pæp (bad, gas, sad)
4. Fef (bed, guess, said)

Production task in pre-test 2

Start the recording app on https://online-voice-recorder.com/. Pronounce each of the following four (fake) words once. Read out loud the number before you say the word. Read them out loud in your own time, you don't have to rush things. Behind every fake word are three examples of words with the same vowel sound. After you're done reading out loud the four words, stop the recording. Send the recording with the two questionnaires via e-mail to *email author*.

1. Tæt (bad, gas, sad)
2. Pep (bed, guess, said)
3. Fæf (bad, gas, sad)
4. Kek (bed, guess, said)

Production task in post-test

Start the recording app on https://online-voice-recorder.com/. Pronounce each of the following four (fake) words once. Read out loud the number before you say the word. Read them out loud in your own time, you don't have to rush things. Behind every fake word are three examples of words with the same vowel sound. After you're done reading out loud the four words, stop the recording. Send the recording with the two questionnaires via e-mail to *email author*.

1. Tæf (bad, gas, sad)
2. Ses (bed, guess, said)
3. Shæsh (bad, gas, sad)
4. Tesh (bed, guess, said)

Appendix 10 *FLCAS Survey*

Important instruction on how to fill in this survey.

Please make the statement that suits your feelings **bold**. Example:

1. Learning about different English phonemes (sounds) is interesting.

Strongly agree	**Agree**	Neither agree nor disagree	Disagree	Strongly disagree

After you have filled in the survey, save the file on your device and send it back to …

Start the survey here.

1. I never feel quite sure of myself when I am speaking in my foreign language class.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

2. I don't worry about making mistakes in language class.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

3. I tremble when I know that I'm going to be called on in language class.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

4. It frightens me when I don't understand what the teacher is saying in the foreign language.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

5. It wouldn't bother me at all to take more foreign language classes.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

6. During language class, I find myself thinking about things that have nothing to do with the course.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

7. I keep thinking that the other students are better at languages than I am.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

8. I am usually at ease during tests in my language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

9. I start to panic when I have to speak without preparation in language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

10. I worry about the consequences of failing my foreign language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

11. I don't understand why some people get so upset over foreign language classes.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

12. In language class, I can get so nervous I forget things I know.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

13. It embarrasses me to volunteer answers in my language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

14. I would not be nervous speaking the foreign language with native speakers.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

15. I get upset when I don't understand what the teacher is correcting.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

16. Even if I am well prepared for language class, I feel anxious about it.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

17. I often feel like not going to my language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

18. I feel confident when I speak in foreign language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

19. I am afraid that my language teacher is ready to correct every mistake I make.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

20. I can feel my heart pounding when I'm going to be called on in language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

Appendix 11 *QESE aimed at /æ-e/ vowel contrast*

1	2	3	4	5	6	7
I am totally unable to do this	I am unable to do this	I am possibly unable to do this	I am possibly able to do this	I am basically and in principle able to do this	I am able to do this	I am able to do this well

1. Can you understand stories told in English?	1	2	3	4	5	6	7
2. Can you hear the difference between the English /æ-e/ vowel?	1	2	3	4	5	6	7
3. Can you understand American TV programs (in English)?	1	2	3	4	5	6	7
4. Can you describe your school to other people in English?	1	2	3	4	5	6	7
5. Can you hear whether a word has an /æ/ or an /e/ sound?	1	2	3	4	5	6	7
6. Can you describe the way to your school from the place where you live in English?	1	2	3	4	5	6	7
7. Can you pronounce the difference between the English /æ-e/ vowel?	1	2	3	4	5	6	7
8. Can you tell a story in English?	1	2	3	4	5	6	7
9. Can you understand radio programs from English-speaking countries?	1	2	3	4	5	6	7
10. Can you understand English-language TV programs?	1	2	3	4	5	6	7
11. Can you say the /æ/ and the /e/ sound in words correctly?	1	2	3	4	5	6	7
12. Can you notice the difference between words with /æ/ or /e/?	1	2	3	4	5	6	7
13. Can you speak using the /æ/ and /e/ sounds correctly?	1	2	3	4	5	6	7
14. Can you understand English conversations about everyday school matters?	1	2	3	4	5	6	7
15. Can you understand audio messages or news items in English on the internet?	1	2	3	4	5	6	7
16. Can you ask your teacher questions in English?	1	2	3	4	5	6	7
18. Can you produce short English sentences?	1	2	3	4	5	6	7
19. Can you introduce your teacher (to someone else) in English?	1	2	3	4	5	6	7
20. Can you discuss subjects of general interest with your fellow students in English?	1	2	3	4	5	6	7
21. Can you understand English films without subtitles?	1	2	3	4	5	6	7
22. Can you introduce yourself in English?	1	2	3	4	5	6	7
23. Can you answer your teacher's questions in English?	1	2	3	4	5	6	7
24. Can you understand English songs?	1	2	3	4	5	6	7
25. Can you tell if a word contains the /æ/ or /e/ vowel sound?	1	2	3	4	5	6	7

Appendix 12 *Document containing questionnaires and production task sent to student; production task varies per test version, see Appendix 3.*

After you have filled in the surveys in this document, save the file on your device and send it back to: *email author* along with the recording.

Questionnaire 1 QESE *Self-efficacy aimed at /æ-e/ vowel contrast*

1	2	3	4	5	6	7
I am totally unable to do this	I am unable to do this	I am possibly unable to do this	I am possibly able to do this	I am basically and in principle able to do this	I am able to do this	I am able to do this well

Important instruction on how to fill in this survey.

Please make the number that suits your feelings **bold**. Example:

1. Can you understand stories told in English?	1	2	3	4	5	**6**	7

1	2	3	4	5	6	7
I am totally unable to do this	I am unable to do this	I am possibly unable to do this	I am possibly able to do this	I am basically and in principle able to do this	I am able to do this	I am able to do this well

1. Can you understand stories told in English?	1	2	3	4	5	6	7
2. Can you hear the difference between the English /æ-e/ vowel?	1	2	3	4	5	6	7
3. Can you describe your school to other people in English?	1	2	3	4	5	6	7
4. Can you hear whether a word has an /æ/ or an /e/ sound?	1	2	3	4	5	6	7
5. Can you describe the way to your school from the place where you live in English?	1	2	3	4	5	6	7
6. Can you pronounce the difference between the English /æ-e/ vowel?	1	2	3	4	5	6	7
7. Can you tell a story in English?	1	2	3	4	5	6	7
8. Can you understand radio programs in English-speaking countries?	1	2	3	4	5	6	7
9. Can you understand English-language TV programs made in the Netherlands?	1	2	3	4	5	6	7
10. Can you say the /æ/ and the /e/ sound in words correctly?	1	2	3	4	5	6	7
11. Can you notice the difference between words with /æ/ or /e/?	1	2	3	4	5	6	7
12. Can you speak using the /æ/ and /e/ sounds correctly?	1	2	3	4	5	6	7
13. Can you understand English conversations about everyday school matters?	1	2	3	4	5	6	7
14. Can you understand audio messages or news items in English on the internet?	1	2	3	4	5	6	7
15. Can you ask your teacher questions in English?	1	2	3	4	5	6	7
16. Can you produce short English sentences?	1	2	3	4	5	6	7
17. Can you introduce your teacher (to someone else) in English?	1	2	3	4	5	6	7
18. Can you discuss subjects of general interest with your fellow students in English?	1	2	3	4	5	6	7
19. Can you understand English films without subtitles?	1	2	3	4	5	6	7
20. Can you introduce yourself in English?	1	2	3	4	5	6	7
21. Can you answer your teacher's questions in English?	1	2	3	4	5	6	7
22. Can you understand English songs?	1	2	3	4	5	6	7
23. Can you understand telephone numbers spoken in English?	1	2	3	4	5	6	7
24. Can you tell if a word contains the /æ/ or /e/ vowel sound?	1	2	3	4	5	6	7
25. Can you understand American TV programs (in English)?							

Questionnaire 2 FLCAS *Self-reported language anxiety*

Important instruction on how to fill in this survey.

Please make the statement that suits your feelings **bold**. Example:

1. Learning about different English phonemes (sounds) is interesting.

Strongly agree	**Agree**	Neither agree nor disagree	Disagree	Strongly disagree

---

Start the survey here.

1. I never feel quite sure of myself when I am speaking in my foreign language class.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

2. I don't worry about making mistakes in language class.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

3. I tremble when I know that I'm going to be called on in language class.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

4. It frightens me when I don't understand what the teacher is saying in the foreign language.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

5. It wouldn't bother me at all to take more foreign language classes.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

6. During language class, I find myself thinking about things that have nothing to do with the course.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

7. I keep thinking that the other students are better at languages than I am.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

8. I am usually at ease during tests in my language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

9. I start to panic when I have to speak without preparation in language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

10. I worry about the consequences of failing my foreign language class.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

11. I don't understand why some people get so upset over foreign language classes.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

12. In language class, I can get so nervous I forget things I know.

Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree

13. It embarrasses me to volunteer answers in my language class.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

14. I would not be nervous speaking the foreign language with native speakers.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

15. I get upset when I don't understand what the teacher is correcting.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

16. Even if I am well prepared for language class, I feel anxious about it.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

17. I often feel like not going to my language class.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

18. I feel confident when I speak in foreign language class.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

19. I am afraid that my language teacher is ready to correct every mistake I make.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

20. I can feel my heart pounding when I'm going to be called on in language class.

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree

Production test

Start the recording app on https://online-voice-recorder.com/. Pronounce each of the following four (fake) words once. Read out loud the number before you say the word. Read them out loud in your own time, you don't have to rush things. Behind every fake word are three examples of words with the same vowel sound. After you're done reading out loud the four words, stop the recording. Send the recording with the two questionnaires via e-mail to *email author*.

1. Kæk (bad, gas, sad)
2. Tet (bed, guess, said)
3. Pæp (bad, gas, sad)
4. Fef (bed, guess, said)

Appendix 13

FLCAS scores per question, ranging from low language anxiety (1) to high language anxiety (5)

1. 5-1
2. 1-5
3. 5-1
4. 5-1
5. 1-5
6. 5-1
7. 5-1
8. 1-5
9. 5-1
10. 5-1
11. 1-5
12. 5-1
13. 5-1
14. 1-5
15. 5-1
16. 5-1
17. 5-1
18. 1-5
19. 5-1
20. 5-1