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# PROTOTYPING INSTRUCTIONS WHERE PROSODY AND PRAGMATICS ARE COMBINED IN ORDER TO IMPROVE EFL ADVANCED LEARNERS' LANGUAGE PRODUCTION

MA THESIS
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**Autorideklaratsioon**

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# List of Abbreviations

CEFR - Common European Framework of Reference for Languages

DBR - Design-Based Research

EFL - English as a Foreign Language

L1 - Speaker's First Language

L2 - Second Language

SLA - Second Language Acquisition

# Introduction

Throughout many years of private tutoring, the author of the current research has come across many local people who, although used English on a daily basis, were still not satisfied with their speaking performance in English. This teaching experience has prompted the author to create a series of lessons on speech in order to improve the way her students sound in English as well as pragmatics to help them reach their communicational goals. This teaching involves stopping language transfer which occurs both in prosody and pragmatics. For example, non-native speakers tend to apply their L1 intonation in L2 similar contexts. They would let their L1 prosodic choices guide their L2 realisation (Nikbakht, 2011, p.157).

As Fraser (2000) states, being able to speak English certainly includes a number of sub-skills, involving vocabulary, grammar, pragmatics, etc. However, by far the most important of these skills is pronunciation: with good pronunciation, a speaker is intelligible despite other errors, whereas with poor pronunciation, a speaker can be very difficult to understand despite accuracy in other areas. Pronunciation is the aspect that most affects how the speaker is judged by others, and how they are formally assessed in other skills (Fraser, 2000, p.7). Prosody includes perceptual features of pitch, length and loudness with intonation playing a particularly important role in pragmatics function (Wells, 2006). Prosody is one of the elements that mainly contribute to pragmatic fossilisation in non-native speakers of English and must be studied in relation to social actions rather than being linked to context-free notions of grammar, meaning and function (Romero-Trillo, 2002).

Garton and Graves (2014) point out that there is a disproportional lack of attention to pronunciation materials in SLA research. Barrera Pardo (2004, p. 8) has described it as a “pronunciation paradox”. Little proper testing of the relative effectiveness of pronunciation methods has been done and as a discipline, we have little formal knowledge of what methods are best for pronunciation teaching in what contexts (Fraser, 2000, p. 29). Furthermore, pronunciation teaching is rather blurred in training contexts (p. 10).

The theoretical framework of this thesis is based on the work of prosodic and pragmatic transfer and code-switching researchers such as Terence Odlin, James Emil Flege, Kathleen

Bardovi-Harlig, Ludmila Isurin and Jesús Romero-Trillo. The science of prosodic phonology was derived from the research work of phoneticians Björn E. Lindblom and Janet Fletcher. In order to prototype the instructions for late L2 oral proficiency attainment, the research refers to the works on teaching pronunciation by Roy C. Major, Murray J. Munro, Tracey Derwing, Ron Thomson, Jennifer Ann Foote and others.

The author has begun this research to shed light on one of the most fundamental conditions for improving late L2 learners' oral ability considering the presence of fossilization: the characteristics of the modern instructions to help reach ultimate attainment in spoken English. The aim of this research is to identify characteristics of the learning material that would stop linguistic transfer in EFL learners in Estonia in order to promote the learners' prosodic adequacy. The sample of this study is a group of five EFL advanced learners used for collecting data on linguistic transfer and the degree of prosodic fossilization. The analysis of prosodic characteristics allowed to develop this study's material in a form of a series of solutions identified by the author as crucial for the EFL learners in Estonia to meet their language needs and develop L2 pronunciation as a cognitive skill. These strategies are related to phonetics (pronunciation), prosody (tone, stress, pacing and chunking) and pragmatics (meanings behind different speech rates, contextual and emotional factors in speech tempo in the British culture of interaction).

This research is focused on engineering instructions on prosody and pragmatics which include views on conceptualising sounds appropriate to English and, to some degree, prevents learners from using their native language sound categories. In order to develop such instructions, there is a research question to answer:

What characteristics should be emphasized in instructions for improving oral production of EFL learners in Estonia?

The development of the prototypes considered SLA theories of late L2 learners discussed in Chapter 1 and broken down into subchapters on intelligibility and accent, linguistic transfer and pronunciation teaching. The methodology of the research, described in Chapter 2, follows the

Design Based Research (DBR) genre where the main focus is instructional theory pursuing how to best structure the material to facilitate EFL learning. The framework for prototyping the solutions outlined by Plomp (2013, p. 19) included the following phases:

- preliminary research (literature review as well as sample observation and assessment)
- development phase (prototyping the instructions)
- partial assessment phase (a formative evaluation of the instructions)

Chapter 3 demonstrates the process of identifying the sample's linguistic transfer, and contains ten instructions on segmentals, suprasegmental and pragmatics developed over two iterations. The prototypes of instructions were discussed with an expert-teacher and evaluated against learning material criteria as well as through three formative evaluation methods of walkthrough, expert appraisal and screening.

# Chapter 1. Theoretical Framework for the Study

## 1.1 Prosody and Pragmatics Interdependence

Phonation (voicing) is a vast study field with speech being a complex psychophysiological process. Some aspects of phonetic realisation are viewed below in order to identify areas where adjustments would lead to a native-like pronunciation and hence improve learners' intelligibility, the connection of which will be discussed in the next subchapter. Pronunciation is divided into two large categories: segmentals and suprasegmentals. *Segmentals* are also called phonemes. These are individual units of sounds of consonants and vowels that can be analyzed. *Suprasegmentals* are speech phenomena that apply to multiple segments, they accompany segments but extend over syllables, words or phrases. According to Fletcher (2010, p. 523), suprasegmental phonology refers to intonation patterns, stress placement and rhythm in spoken language; also called *prosody*. All the suprasegmental features are characterized by the fact that they must be described in relation to other items in the same utterance: it is the relative values of pitch, length, or degree of stress of an item that are significant (Ladefoged & Johnson, 2011, p. 24).

Observations for this research have identified the following areas of speech production that contribute to the local EFL learners' accent the most: pitch, intonation, speech rate, stress, rhythm and duration. The *pitch* of a sound is an auditory property that enables a listener to place it on a scale going from low to high. Pitch is dependent on the frequency of the vibration of the vocal folds. Higher frequency has higher pitch. *Intonation* is a perceived pitch pattern in a sentence (Ladefoged & Johnson, 2011, p. 24). A convenient method of characterising oppositions of intonations are described as 'high', 'low', 'rise' and 'fall'. However, describing the intonation in these terms would not always reflect how the hearer classifies the message. It is impossible to ignore the value of intonation in communication. There is a communication system shared with the whole speech community which remains constant through time. For example, it

is accepted to assume that a gradual rise in the general pitch of the voice informs a hearer of an increase in anxiety, anger and physical discomfort (Brazil, 1997, p. 2). But, although the common intonation patterns can, at first, sound similar, the functions of similar patterns differ from language to language. (Brazil, 1997, pp. 3–4). It is crucial to bear in mind that pitch of voice as a physical feature is very much individual among different speakers, and can also be influenced culturally as well as situationally.

*Speech rate* of *speech tempo* refers to the amount of speech units (segments, syllables or words) articulated during a time unit (second of minute). Pitch and speech tempo are not only applied to linguistics, but are being part of sociolinguistics, psychology and anthropology. Nick Campbell (2000) explores the aspects that influence speech timing, acknowledging that there is a standard where the production of sounds is fundamentally similar for all speakers of the language. The author of the current research refers to this as a standard in instructions 7 and 8. There is, unfortunately, no comparable data for speech tempo differences between Estonian, Russian and English. Nevertheless, the author offers these based on her observations showing temporal differences between English, Russian and Estonian which lead to perceptual differences in pragmatics. Current study sees a greater operational importance in speech rate as a focus for teaching pronunciation/prosody for local learners' communication benefits.

*Stress* is a prominence or emphasis given to a syllable in an utterance. Stressed syllables are produced with more energy that can manifest in higher amplitude, longer duration or more precise articulation (Ladefoged & Johnson, 2011, p.249). *Rhythm* is the ordering of stressed and unstressed syllables in an utterance (Ladefoged & Johnson, 2011, p.23). According to the ordering system, languages are divided into stress-timed (stressed syllables occur at regular intervals in an utterance) and syllable-timed (stressed syllables occur in fixed position in the word) (Fletcher, 2010, p. 552; Ladefoged & Johnson, 2011, p. 249). The author has noticed an important distinction in voice output difference during the realisation of stress between Estonian, Russian and English language productions. The stress in English seems to be of a higher amplitude than stress in Russian/Estonian. At the stressed syllable in English the air is pushed out faster and with more force than in Russian/Estonian. In other words, for local EFL learners the vocal effort should be increased when speaking English.

Humans speak at an exhalation which is the flow of the respiratory current out of the body. If stress relates to the pressure during exhalation then, perhaps, speakers of different languages distribute the air in the lungs differently throughout their utterance as there is such a thing as uneven pulmonary ventilation (Otis et al., 1956). Focusing on teaching such control over a L2 learner's own body, it has been found out that expiration can be either voluntary or involuntary depending on the purposes served for the body. Voluntary expiration is actively controlled by holding air in the lungs and releasing it at a fixed rate, which is required for voice production during speech or singing (Guz, 1997).

Languages spoken and learned in Estonia differ in something that can be described as the stretch of language. In phonetics, sounds can be compared by their length or extended duration (Clark et al., 2007). It can be caused by a segmental environment. For instance, in English, vowels preceding voiced consonants are longer than vowels preceding voiceless consonants bead > beat, bag > back (Lehiste, 1984, p. 96) but the main differences are qualitative. In some languages (like Estonian) the length distinction is phonological. Speakers of quantity languages may not perceive the qualitative difference but only the intrinsic duration of English vowels. For example, it has been found that Japanese substitute long high front vowel /i:/ for the English tense high front vowel /i/ (Morrison 2002). That may be the case for Estonian as well.

Another durational constraint to consider covering in ESL teaching in Estonia is polysyllabic shortening. Polysyllabic shortening refers to the phenomenon in which syllables are produced more rapidly as words become longer. Polysyllabic shortening is used to maintain rhythm in stress-timed languages like English (Gibson & Summers 2018). For example, the syllables in *information* are produced more rapidly than the syllables in *inform*, which are produced more rapidly than in *info*. Lehiste and Lehto (1972) compared the duration of the initial syllable of words like *speed*, *speedy*, and *speediness* and found that syllables and vowels in them become progressively shorter with additional syllables added. White and Turk (2010) found out that it mainly occurs in accented words. Also, there can also be a word-level shortening effect (Lehiste, 1984). However, we should remember that L2 advanced learners have limited time for covering all the language aspects, and, if they aren't intending to become linguists, they need their teachers

to curate all the information and instruct on the most influential moments. Basically, the instruction can point out that in many cases the longer the word is the shorter the initial stressed syllable sounds.

## 1.2 Accentedness, Intelligibility and Linguistic Transfer

According to the British linguist David Crystal, in language learning, accent and pronunciation are much less important than context and meaning; it is intelligibility that counts the most (Canguro English, 2019). This can certainly apply to well-known and even "branded" accents such as French and German. However, Estonian is not that famous worldwide and, therefore, our accent when we speak English may play a role of a distractor during a conversational event.

An accent may reduce intelligibility in both situations when a non-native speaker and a native-speaker interact as well as between two non-native speakers (Munro, 2003). Pronunciation is only one aspect of speech, but it must complement the utterance to obtain comprehensibility (Crowther et al., 2015). Normally, one mispronounced segment will not cause difficulties for the listener. Nevertheless, when several segmentals and suprasegmentals interfere with understanding, they indicate communication problems (Thomson & Derwing, 2014, p. 10).

Levis (2005) compares the terms nativeness and intelligibility. The native-like pronunciation can obviously be that key factor for intelligibility in L2. The intelligibility principle is rooted in the learner's need to be understandable (p. 370). This speaker's need connects prosody and pragmatics which can be accentuated to the learners in order to engage them in metacognition.

Nativeness paradigm served as a standard to intelligibility, however, in research, it has different measures such as pitch contours, accent ratings and error counts (Thomson & Derwing, 2014). There is a newer approach in research called the Intelligibility Principle (Saito, 2011), as well as research combining the elements of both Nativeness and Intelligibility profiles (see Trofimovich et al. 2009). Intelligibility comes with various instruments used to measure it. It previously was evaluated using cloze tests, transcriptions or rating scales. The evaluation of nativeness is

conducted using accentedness ratings, whereas intelligibility is rated via the listener's perception and understanding of an utterance (Crowther et al., 2015). The data indicate that listeners take into account the speaker's native language as well as the type of utterance. A large role in the evaluation of speakers' performance and intelligibility is played by evaluator bias against the phenomena, accents, speakers as well as their experience with a particular accent or pronunciation feature (Derwing & Munro, 2005).

Both segmentation as well as rhythm help in acquiring new language vocabulary. A research by George Hollich and Derek Houston (2007) shows that infants rely on strong stresses and rhythmical patterns in speech in order to segment (detect) separate words in fluent speech. This immanent mechanism helping humans decode a language allows us to presume that it can also be used by L2 learners to produce intelligible speech. In The Common European Framework of Reference Companion Volume (Council of Europe, 2020) the pronunciation teaching is being refocused from accent polishing onto intelligibility of a speaker, in particular "how much effort is required from the interlocutor to decode the speaker's message". To reach this, stress, intonation and rhythm are being highlighted as key prosodic features to master (Council of Europe, 2020, p.133)

*Transfer* refers to the influence between a learner's native language and the target language. Transfer phenomenon occurs when learners use a sound from their native language while saying a word in the target language. In his Unified Competition Model (UCM), MacWhinney (2005) proposed that "whatever can transfer will" (p. 76). Having very little to no guidance in pronunciation will probably lead the learners to automatically maintain L1 phonological representation during the production of L2.

Transfer can be divided on several bases. Bardovi-Harlig (2017) differentiates between *negative transfer* or *interference* – influence of the native language leads to errors in target language use and *positive transfer* or *facilitation* – influence of the native language supports the acquisition of target language. Terence Odlin (2009) also agrees that the language acquisition process should consider the inter-language phenomena such as transfer and code-switching, especially nowadays, when language acquisition almost always occurs in multilingual contexts. There is

*borrowing transfer* when a person's native language is influenced by the acquisition of another language as well as layered influences between L1, L2 and L3. These are, of course, highly relevant to open and multilingual modern Estonia. Nevertheless, in the context of the current research, the main focus is directed at *substrate transfer* where native language influences the target language (Isurin et al., 2009). The author of this thesis observes segmental and intonational transfers of EFL learners in Estonia, and, although eradication of accent is not the main concern of the provided solutions for pronunciation instructions, they should deal with the change in durational patterns in speech as this has the most effect on pragmatic reasons of colloquy. Therefore, teaching pronunciation EFL in Estonia should encourage the rewiring of learners' motor plans and prevent the negative transfer being a source of common errors in pronunciation.

Estonian has highly regular mappings from orthography to pronunciation (Asu & Teras, 2009). This serves as a backup system for resonance unless the L2 learner is illiterate or when the L2 orthography is unlike the LI orthography This feature does make it easier to recognise English words of the same origin, however the voice pitch, word duration and stress strength in activating its sound would probably remain the same which leads to negative transfer. Averting transfer, therefore, would be highly beneficial for the local EFL learners.

Cross-linguistic phonological influence occurs even at higher levels of EFL. As experience and proficiency increase, individuals rewire their L1 motor plans to accommodate the new L2 articulatory units (Flege, Takagi & Mann, 1995). Apart from the L1 influence on the L2 production, the age factor in L2 phonological acquisition plays a key role: advanced-level L2 learners' age correlates with their accentedness. Nevertheless, there is also a phenomenon of individual variation of L2 prosodic attainment which is not related to learners' age (Ioup, 2008, p. 51).

Another aspect highly influencing the effect of the pronunciation solutions in late learners is the nature of memory. The long-term memory holds two types of knowledge: declarative and procedural. Declarative knowledge refers to the facts and information about something, whereas procedural knowledge refers to skills. If we want to automatise the learners' new language skills, they would have to shift from declarative to procedural knowledge. (Anderson, 1985). According

to Anderson (1985) the model for acquisition of skills follows three stages in which declarative knowledge becomes procedural:

1. Cognitive stage which requires learners' conscious attention.
2. Associative stage when the new information is associated with prior knowledge followed by forming meaningful links.
3. Autonomous stage when new skills become more automatized.

According to Johnson (1996), if a certain skill knowledge is proceduralized in an incorrect manner, the learners would find it incredibly difficult to access, make conscious, correct it and automatize again. The instructions developed in this research help the learners to access the knowledge to try to rewire their pronunciation. The automatisation is being achieved through repetitions and varied practice.

An incorrect language oral production can become a habit that is uneasy to change. Therefore, it is important to consider fossilization as one of the age-related learning effects. Other limitations such as decreasing neurological capacity and declining social support systems in older adults would have to be compensated to facilitate late L2 learning. (MacWhinney, 2005, p.77). Pragmatic fossilization should also be considered in L2 learning and teaching (Romero-Trillo, 2002). This is especially important because adults often learn L2 in order to immediately use it for their social goals.

## 1.3 SLA Theories to Consider When Teaching Advanced Learners

Several second-language acquisition theories were considered in this research in order to discern the ways L2 is acquired by adults as well as advanced learners. DeKeyser & Larson-Hall (2005) concluded that the Power Law of Practice applies also to pronunciation learning as research shows that adult L2 learners show quick improvement over the first few months of being exposed to L2 in L2 environment (L2 home country) followed by flattening out despite additional linguistic input. Moreover, Derwing and Munro (2009) found out that most of the L2

acquisition by adults occurs within the first 3-4 months of residency in the L2 home environment. Later on the pronunciation quality depends on everyday conversational use of L2. For the current research, these findings mean that if we want to improve adult learners' intelligibility, the pronunciation should also be taught in the first few months of L2 learning.

There is a lot of criticism on Critical Period Hypothesis (DeKeyser & Larson-Hall, 2005) as researchers apply to bilinguals to find out all the factors shaping exceptionally fluent L2 realization (Nicoladis & Montanari, 2015). The author of the current research develops learning material for the learners who have, most probably, spent considerable time learning L2 without much training in pronunciation. Therefore, it is important to refer to any other alternative theoretical framework in order to find out the criteria for a late language acquisition success. Specifically, the Speech Learning Model studied by Flege (2008) brings some evidence that late L2 learners can actively learn L2 even after puberty. For example, Flege (2003, p. 345) pointed out, "the capacity to accurately perceive the phonetic properties of L2 speech sounds and to establish new categories based on those properties remains intact across their lifespan". A profound L2 input and sufficient interaction can make both early and late L2 learners achieve nativelike L2 performance (Flege, 2008).

The H&H (Hyper-articulation and Hypo-articulation) theory by Lindblom (1983, 1990) proves that speech production is adaptive, meaning that speakers strategically modify their speech depending on a given situation. Depending on the communicative event, people hyper-articulate and hypo-articulate (adjust the loudness, tempo, clarity etc. of speech to the needs of the situation) thereby exploiting more of the full range of phonetic possibilities (Lindblom, 1983, p. 219). For the purposes of the current research, it also means that some standard contexts can be implemented in speaking drills with the learners' awareness drawn to their phonetic realisation.

## 1.4 The Problematics of Teaching Pronunciation

Thomson and Derwing (2015) observed a clear growth in interest in pronunciation research and carried out an analysis of 75 studies focusing on how non-natives learned pronunciation,

concluding that non-native learners benefit from the explicit explanation of pronunciation rules. Pronunciation is viewed as different from other aspects of language proficiency, as the ability to imitate sounds is not tied to language proficiency (Thomson & Derwing, 2015).

According to Thomson and Derwing (2015) research on the efficacy of L2 pronunciation instruction showed mixed results because there were other possible aspects involved. These could be learners' individual differences, goals and foci of instructions, type and duration of instructional input, or assessment procedures in total.

Pronunciation is one of the aspects of language both native and non-native teachers of English are not keen on teaching and a lack of adequate teacher training results in an intuitive use of available materials and techniques. Teachers were given few guiding principles and some non-native teachers avoided teaching pronunciation (Derwing & Munro, 2005). Derwing and Munro pointed out that it is the marginalization of pronunciation within applied linguistics that results in lack of support in teacher training materials as well as student books (p. 382). Nair et al. (2006) discussed the reasons why ESL teachers do not teach pronunciation and also pointed out that other language layers are prioritized over the acoustic one, which leads to not making sufficient time for pronunciation practice. In their thorough study of teacher behaviour with non-native learners, Foote et al. (2016) established that only about 10% of classroom time was dedicated to pronunciation, mainly in a form of corrective feedback and as a response to learners' errors in segmentals (individual sounds). According to the research, this was only about half of the classroom time dedicated to grammar and about 1/7 of the time spent on vocabulary acquisition. Pronunciation training was delivered in the form of tongue twisters with no prosody aspect mentioned in form-focused instruction. Moreover, most pronunciation teaching episodes were not in teachers initial lesson plans but occurred spontaneously during lessons.

Because prosody and pragmatics interlink, there is another difficulty in creating that learning environment to mimic L2 situations. Pronunciation practice is taught using drills and repetition and, therefore, being decontextualized whereas the morphological and syntactical levels of languages are taught through contextualized meaningful exercises (Saito & Van Poeteren, 2012). Romero-Trillo (2002) concludes that prosodic "inadequacy" is caused because pragmatic

research is often detached from prosody, and this is due to the lack of a systematic analytical methodology. The author of the current study has noticed and introduced to the learning material the connection between the speed of utterance in English and the speaker's attitude towards the subject of conversation or the whole situation. Learners should be fully aware of this connection as well as provided with contextual framework to practise.

Another question to review is the language of instruction while teaching pronunciation. As it was revealed by Foote et al. (2011) teachers with pronunciation training use more pronunciation-oriented activities whereas the untrained teachers usually teach pronunciation only in the form of error correction. The lack of sufficient training makes teachers spend the most time dealing with segmental errors rather than teaching suprasegmentals. Moreover, teaching suprasegmental features requires reference to terminology (Foote et al., 2016). Couper (2011) tried to find out whether terminology created by teachers and students learning pronunciation as well as critical listening (listening and contrasting sounds) improve learners' pronunciation. Four different groups took part in the experiment sessions and the comparison of their results indicates that both socially constructed metalanguage and critical listening have an immediate effect on the students' speech performance. The experiment proves that this approach can be used for planning and creating effective pronunciation instructions. Nevertheless, explicit instruction may not significantly improve the accentedness rating (Algethami 2017, pp. 260-261).

Barrera Pardo (2004) has collected evidence that the vast majority of EFL learners find lessons and drills on pronunciation immensely useful, even if the material on pronunciation is designed for independent work (self-study work, self-recordings with instructor's feedback). He revealed a great deal of contradiction between teachers and learners' perspectives on pronunciation teaching.

The difficulty of teaching prosody lies in the fact that prosodic phenomena are deeply intertwined in speech (one prosodic parameter takes part in several parallel phenomena simultaneously) and strongly connected to the phonological system of a certain language (Asu et al 2016., p. 120).

After reviewing several textbooks teaching pronunciation in English, it was noted that the volume of information and instruction exceeds the time resources available to master English unless pronunciation is studied separately. It is clear that developing pronunciation should be integrated into other aspects of L2. Also, the learning material available usually expects a non-native speaker to make meaningful choices associated with stressed syllables, and to understand the terminology associated with the distribution of syllables, intonation and the speech rate. There is also a lot of evidence showing humans learn pronunciation using self-study work (Barrera Pardo, 2004, pp. 25–27).

Speaking skills develop in social contexts and relate to the pragmatic track as opposed to the formal track which involves grammatical and semantic rules. Native speakers of a language have a different linguistic development as they simultaneously learn the grammatical and semantic rules of a language as well as the social use of it in different registers. Foreign language learners would normally begin their learning journey from the formal track of the structure and system of a language. The pragmatic track of a language is introduced later on and the development of communicative competence is taught through formal instruction in a pseudo-natural L2 context. This delay in the presentation of the pragmatic variation causes pragmatic fossilisation (Romero-Trillo, 2002).

CEFR 2020 Companion Volume (Council of Europe, 2020) has reassessed the value of pronunciation teaching, however, for many years pronunciation was far from a focal point in teaching English at independent and especially at proficient levels (B1–C2) (Council of Europe, 2011, p.28). The effect is that EFL learners' understanding of phonetics flounders, preventing them to read (and hence to pronounce) the new words they learn correctly. Nevertheless, there is evidence that negative transfer in adults can be corrected through targeting it in training and multiple repetition (Flege, Takagi, & Mann, 1995). This involves certain techniques such as selective attention, resounding and restoring advanced learners' motor learning process. Children and adolescents, however, would pick up these much more naturally and might not require any special attention to pronunciation. It is also known that learners may have trouble encoding new phonological forms that are close to words they already know (MacWhinney, 2005).

# Chapter 2. Design Based Research (DBR)

## 2.1 DBR as a Research Genre

The following citation allows to capture the philosophical orientation of the DBR: "Most educational research describes or evaluates education as it currently is. Some educational research analyzes education as it was. Design research, however, is about education as it *could be* or even as it *should be*" (Bakker, 2018, p. 3). DBR is best described not as a method or methodology but "a genre of research in which the iterative development of solutions to practical and complex educational problems also provides the context for empirical investigation, which yields theoretical understanding than can inform the work of others" (McKenney & Reeves, 2012, p.7). This alludes that DBR is neither a method nor a methodology: it is something in between, indeed a research genre which flexibly applies existing research approaches for the purpose of gaining design based insights and research based designs. Wang and Hannafin (2005, p.7) proposed some basic characteristics of Design Based Research: "Pragmatic, grounded, interactive, iterative and flexible, integrative, and contextual".

The author of this study has noticed recurring mistakes in local EFL learners' pronunciation. DBR provides the opportunity to research the problem and engineer the solution as it is problem-driven, considers the role of social context and has better potential for influencing educational practice, materials and programs that can be adopted elsewhere (Barab & Squire, 2004). It is important to note that DBR does not emphasize isolated variables. van den Akker et al. (2006, p. 5) point out that design researchers, focusing on specific objects (interventions) in specific contexts, still try to study those as integral and phenomena.

According to van den Akker et al. (2006, p. 15), DBR has two primary purposes for designing and developing interventions. Firstly, to solve complex educational problems and at the same time improve the knowledge about the design and development process. Secondly, to develop and validate particular theories.

There are several approaches for conducting a DBR with options to focus either on the solution or the theory production as the major goal. The purpose of the current DBR is to develop research-based solutions for a complex problem in concrete educational practice in Estonia. This type of design research is defined as the systematic analysis, design and evaluation of educational interventions with the dual aim of generating research-based solutions for complex problems in educational practice, and advancing our knowledge about the characteristics of these interventions and the processes of designing and developing them (McKenney & Reeves, 2013).

The product of the design research is a solid set of characteristics for the educational reform of any kind, that will outline the characteristics of the material (or intervention) to be developed or adapted by those who will be using it. van den Akker et al (2006) point out that the argument for initiating design research comes from a desire to increase the relevance of research for educational policy and practice. The author of the current thesis uses DBR means to initiate further research to improve ESL learners speech production as their acknowledged language need. The focus of DBR can also be on understanding and improving existing interventions (van den Akker et al, 2006).

## 2.2 Methodology Stages

Matthew Easterday et al. (2017) have articulated a 7-step process as a way of generating useful material and theory for education problems. The seven iterative phases of the design research and production are as follows: focus, understand, define, conceive, build, test and present. The *focus* phase is the first step of identifying the problem and specifying the stakeholders and resources including those within the academic community. In the second phase design researchers try to *understand* the stakeholder needs, they study learners, domains as well as existing solutions. In the third phase the researchers *define* goals and form questions. The *conceive* phase investigates designs that potentially might reach the goals of the research. It is a core phase of the research which has an important role of identifying the nature of the intervention. In the fifth phase the researchers *build* a usable prototype of the implemented material which can be minimal, however still viable for testing the idea. The *test* phase has 3

stages to check the efficacy of the solution in context, each with a short formative evaluation. This involves experts review, field testing, experiment and theory grounding. The *present* phase is the last phase when design researchers communicate to key stakeholders in order to find out whether the design solves a problem that addresses their interest.

Because of the complexity of educational problems, a multi-disciplined team is often brought together to work on a DBR project (Nieveen & Folmer, 2013, p. 165). The current DBR follows the three-step phases approach which was outlined by Plomp (2013, p.19). The following framework simplifies the prototyping of the solution when gathering a multi-disciplined experts team is unavailable:

- preliminary research: context analysis, review of literature, development of a conceptual or theoretical framework for the study;

- development phase: iterative design phase consisting of iterations, each being a micro-cycle of research aimed at improving and refining the material;

- assessment phase: (semi-) summative evaluation to conclude whether the solution or intervention meets the predetermined specifications. As also this phase often results in recommendations for improvement of the intervention, we call this phase semi summative.

## 2.3 Data Collection Tools and Evaluation Methods

The current research serves as a first circle out of many potential loops between theory, test and evaluation. The DBR used an interpretive framework where the researcher made an attempt to translate observations of 5 ESL advanced learners' speech production into scientific interpretations as recommended by Gravemeijer and Cobb (2013, p. 88). All these learners initially approached the author of the current study in order to improve their oral production in English. The observations served as a rationale to research deeper into linguistic transfer in EFL learners in Estonia and took place within 3 lessons for each learner in an attempt to identify the volume of linguistic transfer affecting their oral performance in English. The author described the degree of linguistic fossilisation that she noticed. The observations are summarised in Table 1. The observations were discussed and compared against existing theoretical and practical

research. The author then specified the characteristics of the learners' transfer in Table 2. Ten solutions were composed suggesting to block each particular transfer. These solutions were introduced to a practising teacher who, within 3 meetings of unstructured interviews, facilitated the development of the instructions as well as evaluated them in Table 3.

Nieveen and Folmer (2013, p.163) also suggest a micro-evaluation method when a small group of learners use parts of the product and their performance is then assessed by observations, questionnaires or interviews. Because this research was focusing on the characteristics of the instructions, the evaluation of the material was conducted using a collection of criteria for evaluating materials for teaching pronunciation (see Table 3).

DBR researchers such as Dowse and Howie (2013) as well as Mafumiko, Voogt and van den Akker (2013) use the type of research question wording that implies a search for characteristics of an intervention. Therefore, the results consist of reflections on the prototype to eventually produce characteristics for further theories development. This was suggested by van den Akker et al. (2006, p.5) who mentions that the DBR is at least partly based on a conceptual framework, whilst the work on the prototypes of the intervention contributes to theory building. Barab and Squire (2004, p. 2) see DBR as a research capable of producing new theories, products and practices that can be used in naturalistic settings.

The current study only began to work on the formative evaluation of the prototypes before involving external evaluators as advised by Nieveen and Folmer (2013, p. 165). It allows the researchers to experience the possible problematic areas of the prototype. This DBR applied the following formative evaluation methods:

- Walkthrough: The design research team (the phonetician and the expert-teacher) went over the prototype in the course of one face-to-face and two online meetings. The data was collected during the first discussion of the instructions which focused on the prototype from the SLA theoretical point of view.

- Expert appraisal: A teacher's reaction to the prototype of instructions. Data was collected by an online unstructured interview with the expert-teacher reviewing each instruction according to their functionality and usability.
- Screening: Members of the design research team checked the design with the data collected using a checklist containing the required characteristics of the intervention.

The instructions developed over two iterations were then discussed with an expert-teacher in a form of unstructured interviews and reviewed in terms of their validity and practicality given in Nieveen & Folmer (2013). The instructions were also evaluated against 8 criteria for learning material (Bowen, 1972; Mukundan, 2011; Williams, 1985).

# Chapter 3. Learning Material Development

## 3.1 Identifying Negative Transfer for Developing Solutions

There is a lot of evidence that late L2 learners' performance significantly differs under formal tasks versus spontaneous communicative conditions (Major, 2008). Spada and Tomita (2010) suggest measuring late L2 learners' oral proficiency more naturalistically, using tasks that evoke L2 speech production in a spontaneous manner. For this DBR, five EFL learners were assessed by hearing them read fiction texts out loud as well as involving them in discussions throughout three sessions with each. All the learners were adults of mixed sociolinguistic backgrounds and permanent residents in Estonia. The observations provided an insight into the linguistic situation among EFL learners representing native Estonian and Russian speakers as well as bilinguals, all with a certain degree of exposure to Estonian. The learners were assessed during their private lessons with the author of this thesis who was also their private tutor. The learners were not aware of being observed for the purpose of the research. The lesson format allowed making corrections and seeing whether the learners can easily adjust their speech accordingly. This action exposed the degree of fossilization. The area of transfer was divided between segmental and suprasegmental features to facilitate planning the instructions. The author has identified the nature of learners' transfer by observing and mapping repeating speech patterns that contributed to their accent. These observations are presented in Table 1 below.

It was noted that monolingual learners had a greater degree of phonetic fossilization whereas bilingual learners showed more flexibility in changing their phonation. This could mean that code-switching existing in the Estonian community facilitates learning pronunciation by allowing more space and flexibility for newly introduced way of speaking.

Table 1. Linguistic transfer of the EFL learners

| Learner | Sociolinguistic Background | Segmental Transfer | Suprasegmental Transfer |
|---|---|---|---|
| J | Native-Russian. Great exposure to Estonian. | Present. Flexible | Present. Fossilised |
| K | Native-Estonian. | Present. Fossilised | Present. Fossilised |
| L | Bilingual. Great exposure to Estonian. | Present. Flexible | Present. Flexible |
| I | Native-Russian. Limited exposure to Estonian. | Present. Fossilised | Present. Fossilised |
| M | Bilingual. Great exposure to Estonian. | Present. Flexible | Present. Flexible |

All of the following solutions were developed after witnessing recurring mispronunciations and aimed at stopping learners' transfer. The author of the current study has identified the areas of pronunciation which are affected by the learners' transfer the most. These were the transfer of pitch, stress, duration, intonation and tempo covered in Chapter 1. Notes were taken to particularise where exactly the learners maintain their L1 phonological representation (see Table 2). These notes helped to design the first prototypes of the instructions: they represent characteristics of problems to be solved by the instructions.

Table 2. Notes on the characteristics of the learners' transfer

| Transfer | Learner | Comments |
|---|---|---|
| Pitch | K, L, I, M | Pitch of the voice is too low, hard to hear. |
| Stress | J, K, I, M | Stress is not intense enough. |
| Duration | all | Lengthy words are pronounced by syllables, no idea about the polysyllabic shortening. |
| Intonation | all | Strong transfer especially K and I. |
| Tempo | J, K, I | Speech tempo is constant all the time. |

3.2 Developing Solutions

The author has engineered particular solutions for teaching prosody and pragmatics focusing on blocking transfer or rewiring speakers' motor plan.

Solutions for improving segmentals:

1. It should be addressed that English vowels have a higher amplitude/sound louder than Estonian/Russian vowels. Therefore, words should be pronounced louder. The instruction should employ learners' full attention as well as self-control. Comparing words of the same origin in both L1 and English might be beneficial.
2. English stress involves more vocal effort than stress in Estonian/Russian. Speakers should exhale stronger when producing stressed syllables. Learners can practise on familiar words to retrain themselves.
3. Russian/Estonian speakers do not aspirate on the sounds [k] [p] and [t] whereas Native-English speakers do. The learners should be invited to explore the difference by exhaling (perhaps, in an exaggerated manner) when they pronounce the syllable with the sounds[k] [p] and [t].
4. The learners should practise all the above together in one exercise and develop self-control.

Solutions for improving suprasegmentals:

5. Unlike Russian, for example, where words can be stretched on a stressed syllable (same applies to Estonian overlong vowels), syllables in English have their own “length”. The learners should be educated about this property and the pragmatic effect this may cause. Also, Estonian English learners should learn about polysyllabic shortening in English.
6. The learners need to be given simple guidance in order to improve their oral production. Creating and reading their own content out loud will be beneficial. Guiding can be supported by colour highlighting, choosing one colour for the rise of intonation and another colour for the falling intonation.

Solutions for improving prosodic pragmatics:

7. Learners should be discouraged from speaking fast. They should be notified that speaking fast in English signalises negativity within the message and/or irritation of the speaker, and that any positive message should be said in a (Standard English tempo). Furthermore, if a sentence has a negative particle in its reduced form -n’t, the sentence should also be said quickly.
8. Learners should take advantage of fiction books or at least available dialogues to practise adjusting speech tempo depending on the situation in the narrative.
9. Creating own content such as dialogues and reading them out loud can also be facilitated with colour highlighting.
10. Preparing to speak about one’s own content such as an expression of opinion can also use colour highlighting to guide intonation and speech tempo.

## 3.3 Results

The following instructions aim to stop transfer/block the speaker's motor plans to learn pronunciation while being fully aware of it. They can be communicated to the learners both in written or spoken forms.

Solutions for improving segmentals:

1. English vowels have a higher amplitude/sound louder than Estonian/Russian vowels. Words should be pronounced louder.

The simplified instruction can be as follows:
"If you imagine that Estonian/Russian vowels are somewhat in the middle of your throat, place your fingertips there and feel the vibrations when saying your name in your mother tongue. Now try and place your vowels at the top of your throat when saying a word in English."
Here learners can either say their names or a borrowed word such as *Informatsioon/Информация* in L1 and thereafter, as a contrast, be encouraged to literally raise their voice when saying their names in English or the English version of the borrowed word. The instruction can encourage the learners to vociferate/cry out the words when practising in English:

"Now say your name at the top of your voice and repeat until you find the loudest variant you are most comfortable with."
Or
"Say *Information* at the top of your voice and see the difference (compare) with the loudness of the vowels in *Informatsioon/Информация* in your language."

Important note: Many other words can be practised this way. Borrowed words seem to activate transfer the most.

2. English stress involves more vocal effort than stress in Estonian/Russian. An English speaker wastes more breath on one word and articulates the stressed syllable of a word with a stronger exhalation which makes other syllables of a word sound significantly quieter. The vocal effort should be increased when speaking English.

The simplified instruction for the learners can be as follows:
"Write down *Informatsioon/Информация* as well as *Information* and indicate the stress with stress mark. Read the word in L1 and then read the word in English making sure your stress is stronger."

Or

"Intensify your stress in *InformAtion* and compare it with the calmer pronunciation of *Informatsioon/Информация* in Estonian/Russian. Repeat several times. If you hear no difference try to exhale more when saying the word in English."

Important Note: At this point of practice the word in English should be said louder and with a stronger stress.

3. Native speakers exhale (aspirate) on the sounds [k] [p] and [t]. Using a comparison with L1, encourage the learners to exhale when they pronounce the syllable with these sounds.

The instruction can be as follows:
"Place the palm of your hand facing your mouth at least 5cms away. Say Kanada/Канада In L1 and note that you don't feel much of an exhalation on the palm of your hand. Now say Canada in English until you feel your own exhalation on the skin of your hand."

Or

"Make a list of 8 words with the sounds [k] [p] and [t] in the beginning of a word and 8 more words where these sounds are in the middle of a word. Read them out loud exaggerating your exhalation on [k] [p] and [t]."

4. Practising all the above at once.

"Make a list of any 15 words you know. Read them out loud making sure you sound louder than usually. Make sure you pronounce them with a stronger stress. Repeat the words until you reach the desired pronunciation. Make sure you exhale the sounds *c/k, p, t* in your words."

For example, learners can make a list of familiar words and try to articulate them in a newly-learnt way:

Desktop

Fashion

Table

Concert

Friendship

Saturday

…

Solutions for improving suprasegmentals:

5. The habit of lengthening words should be stopped. Words can not and should not be pronounced longer or shorter than they are, unless the speaker is being satirical or ironic. Pronouncing a quick word in a way it lengthens creates the impression of the speaker being sarcastic.

   English word *Information* is a "quick" word (polysyllabic shortening), whereas Estonian and Russian variants might be "stretched and pulled" without much effect on the comprehension: *Information vs Informatsiooooon/Информаааааация*. Long vowel example is the word *bone which should not be pronounced too quickly.* Some words pronounced incorrectly in terms of the speed of utterance

might cause confusion: *sleep vs slip, leave vs live, feel vs fill* as well as *thirteen vs thirty,* etc

The simplified instruction can be as follows:
"Words in English have their own "length" and should not be changed in their original duration. The duration of a word can quickly be checked using the "speaker" icon in the top right corner provided in Google search as well as in many online dictionaries. When the "speaker" icon is pressed it reads the word aloud with the "correct" length/duration.
Remember: many words the longer they are the more rapidly they are pronounced. For example, the word *info* is slightly slower than the word *inform*, which is slower than the word *information.*"
For practising: *Sleep - sleepy - sleepiness*

*Stick-sticky-stickiness*

*Port - import - imported - importance*

*Note - noted - notable - notability*

Important note: There should be more examples provided for practising. Furthermore, these should be incorporated into sentences for further improvement.

6. Write 2–4 sentences about yourself and read them out loud. Increase loudness on the third and fourth words of a clause and make sure the intonation falls on the last syllable (lower your voice). Remember that words stress should be stronger.

My name is Helen and I am a professional teacher. I teach English at Centralgood School. I like football and tennis.

My name's Lia Antonova and I am a life-style photographer. I was born in St. Petersburg. I like Italian cuisine and traveling.

Solutions for improving prosodic pragmatics:

7. Speaking fast doesn't mean speaking fluently. In English fast speech signalises some sort of negativity within the message and/or irritation of the speaker. Any positive message should be said in a (Standard English tempo). Furthermore, if a sentence has a negative particle in its reduced form -n't, the sentence should also be said quickly.

The simplified instruction can be as follows:

"*"Thank you very much"* in a quick pace would probably be perceived as *"we have finished"* or *"I am in a rush",* whereas *"Thank you very much"* at an appropriate or slow pace would mean what it literally means.

Try to say these sentences rapidly: *I don't like it here.*

*He isn't there yet.*

*We weren't together.*

Now try to read these sentences slowly. Do you feel how peculiar they might sound?"

8. Use fiction books/dialogues with some conflict situations/negative scenarios/sentences containing some sort of arguing/speaker's irritation/annoyance. It is possible to use texts in available textbooks. It was decided to use colour highlighting to guide the learners' speed of speech.

The instruction can be as follows:

"Increase your reading speed in the sentences highlighted in blue and read the neutral or positive sentences highlighted in pink at a standard pace. Notice the contrast between neutral/positive messages (those to be read significantly slower than the negative ones)."

9. Creating own dialogues and reading them out loud can also be facilitated with colour highlighting:

- Alex, how are you? Going out tonight after work?

- I’m a bit tired today...I’ll have an early night.

The instruction can be as follows:
“Create your own dialogue where one speaker is calm and friendly whereas another one is nervous and disturbed by something. The part of the irritated speaker should be read fast”.

10. Using colour highlighting and personalised content might be more effective.

The instruction and possible output can be as follows:
“Write down 3–4 sentences about what you liked and disliked about learning on ZOOM/your last trip abroad/work in an office environment. Use a pink highlighter to mark the sentences to be read slowly and a blue marker to highlight the quick utterance. Read them out loud, adjusting your speed of utterance.”

*In the beginning studying online was pretty awkward. Nevertheless, it turned out to be very convenient. I loved that I could sit comfortably on the sofa and sip my coffee while the lecture was on. However, I hated not being around my friends and just other people all this time.*

## 3.4 Discussion and Evaluation

The current study has identified the most unintelligible speech patterns in EFL advanced learners in Estonia and developed a set of pronunciation instructions to help remedy the situation. The pronunciation instructions should primarily help learners become understandable and facilitate reaching their communication goals. Ignoring the aspects mentioned in the instructions when speaking in English causes certain words and messages being misheard or/and misunderstood or/and misinterpreted. The author of the research has observed speakers, who were never taught prosodic influence on pragmatics, making a wrong impression during their speech without realising it. These instructions are especially relevant to EFL learners in Estonia due to the

orthographic specifics of both Estonian and Russian languages as well as a great deal of transfer observed beforehand. The material developed in this research promotes a metacognitive skill of a phonological awareness of separable sound units in speech and the ability to manipulate these. The expert-teacher has highlighted that the most obvious advantage of the solutions is that they interconnect and can be personalised as well as adapted to any level.

Solutions for improving segmentals attempt a major and conscious change in learners' pitch of voice by inviting them to actually feel the vibration of the vocal cords during phonation. The author explains that if EFL learners in Estonia are told to raise their voices they would be shouting and stretching words on a stressed syllable which conflicts with the 5th instruction on suprasegmentals. The instruction on the increased vocal effort to reach louder stress needs the teacher's ability to demonstrate. There is a great deal of practice required to refashion the way learners produce familiar sounds.

Solutions for improving suprasegmentals require the learners' self-awareness and self-control. There is even bolder contrast with learners' L1 which the teacher would need to be able to demonstrate as well as find additional examples. The polysyllabic shortening instruction is very simplified and the generalisation in drills 5 and 6 might not apply to all cases. If the learners have no more time to learn about polysyllabic shortening and intonation, the instruction should state that there are exceptions. For example, there is a risk that the wording "many words the longer they are the more rapidly they are pronounced" can be taken literally and would affect the correct pronunciation of exception words such as compound nouns. Using colour highlighting to guide students' intonation can be very helpful. Furthermore, it could be enhanced with some audio recordings to fully engage vocal imitation as it connects the learner's action plan and motor output in the fastest way (Meltzoff & Prinz, 2002).

Solutions for improving prosodic pragmatics consist of important remarks but leave the choice of material to the teachers and learners. The solutions invite the learners to make use of fiction books by becoming more creative with texts while building more language. The exercise on creating own story and then adjusting the speed of utterance while reading own text, allows the

learners to practise having more control over a conversational event or a public speech. It serves as an important tool to prepare learners to use L2 for their pragmatic needs.

Reviewing the prototypes through Anderson's (1985) model for skills acquisition where declarative knowledge becomes procedural, the instructions do follow the necessary stages (cognitive, associative, autonomous) where learner's conscious attention, meaningful links formation and automatisation apply.

The prototype of the instructions was evaluated by the expert-teacher against criteria found in the following works:

1. *Developing criteria for textbook evaluation* by David Williams (1983)
2. *Developing An English Language Textbook Evaluation Checklist* by Jayakaran Mukundan et al. (2011)
3. *Contextualizing Pronunciation Practice in the ESOL Classroom* by J. Donald Bowen (1972)

The checklist introduced in Table 3 has a rating scale of 0–4 (where 4 = Excellent, 3 = Good, 2 = Adequate, 1 = Weak, and 0 = Totally lacking) offered by both Williams (1983) and Mukundan et al. (2011). The rating scale was applied to all the criteria. The instructions did not meet Criterion 4 allowing "for variation in the accents of non-native speakers of English" as, in the case of this research, the prototype is aiming to reach native-like speech that will contribute to intelligibility. The instructions on pronunciation fulfilled the 8th Criterion only where they combined prosody and pragmatics. Instructions 8–10 were united in the evaluation checklist as they all offer the same practice on speech tempo and colour highlighting.

Table 3. Evaluation of the instructions

| **Source** | **Criterion** | **Drill 1** | **Drill 2** | **Drill 3** | **Drill 4** | **Drill 5** | **Drill 6** | **Drill 7** | **Drills 8–10** |
|---|---|---|---|---|---|---|---|---|---|
| Williams, 1983 | 1.The material is based on a contrastive analysis of English and L1 sound systems | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 |
| Williams, 1983 | 2.The exercise suggests ways of demonstrating and practising speech items | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Williams, 1983 | 3.The exercise includes speech situations relevant to the pupils' background | 2 | 2 | 3 | 3 | 1 | 4 | 2 | 3 |
| Williams, 1983 | 4. The exercise allows for variation in the accents of non-native speakers of English | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mukundan, 2011 | 5.Itis contextualized | 1 | 1 | 1 | 2 | 1 | 3 | 1 | 3 |
| Mukundan, 2011 | 6.It is learner-friendly with no complex charts | 3 | 4 | 4 | 4 | 3 | 4 | 4 | 4 |
| Bowen, 1972 | 7.The language and style of the exercise material is convincingly natural and realistic | 3 | 4 | 4 | 4 | 3 | 2 | 4 | 3 |
| Bowen, 1972 | 8.At least some exercises should draw the learner's attention to the content rather than the form of the message. | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 |

The instructions were also reviewed in terms of validity and practicality given in Nieveen & Folmer (2013) as much as it was possible at this stage of the development. The prototype addresses a need, and its components are based on prior knowledge, existing theories as well as the researcher's observations, ensuring content validity (also called relevance). Also, all the components of the prototype are consistently linked to each other, which is also called consistency. The solutions meet these requirements and, therefore, are considered to be valid. A second characteristic of high-quality interventions is that teachers (or the target group of users) see the solution as usable. According to the expert-teacher, these conditions were met, and, therefore, these interventions are then considered practical. Furthermore, the developed solutions contribute to the body of knowledge in the field.

There are mixed results on perceived pronunciation because there is a lack of comprehensive theoretical framework to understand fluency (Segalowitz, 2010). There were more studies of oral fluency rather than cognitive fluency as well as many methodological issues with speech elicitation tasks (Kahng, 2014). The instructions in this research aim to reach automaticity meaning less attention control (Kahneman, 1973) as well as effortless and unconscious speech (Segalowitz, 2010).

## 3.5 Limitations

The current research had several restrictions, including lack of the “multi-disciplined team”, to demonstrate all the evaluation methods of practicality and effectiveness in one study. The DBR genre allows a partial use of the evaluation methods when there are no actual field trials conducted and, therefore, the conclusions include the expected practicality and the expected effectiveness. Beginning this DBR the author was aware that the effect, or any visible result, from the solutions offered, will not be immediate. There are also practical difficulties in researching the effectiveness of materials on language acquisition as the studies would require considerable resources and a long time with extreme difficulties to control for variables influencing acquisition (Garton & Graves, 2014, p. 656).

The theoretical base of some of the instructions obviously miss the research comparing oral production (e.g. vocal effort, voice pitch) between Estonian, Russian and English. Such measures would contribute greatly to development of authentic learning material for the local use as well as applied linguistics generally.

Another area of concern is the teachers' training. If there is no sufficient experience among teachers, it might be required to provide appropriate training or to design methodological recommendations to complement the instructions.

# Conclusion

The research proceeds from the idea that wrong pronunciation as well as accents act as distractors during conversational events which, in some contexts, can be so brief that it becomes crucial to guarantee intelligibility. In the theoretical part it was revealed that linguistic transfer phenomenon contributes greatly to accentedness in EFL learners. The current research focuses on both segmental (articulatory features of phonetic segments) and suprasegmental (stress, pitch, length) features in improving phonetic realisation in EFL learners in Estonia.

The aim of the research was to develop a prototype of instructions to stop negative transfer in EFL learners in Estonia. This was achieved through the Design-Based Research approach which allows empirical work with practical problems of human learning. DBR enables teachers, methodologists and researchers to cooperate to develop a valid learning material on prosody and pragmatics. The framework used for prototyping the solution followed three stages:

- preliminary research: review of literature, context analysis and development of a conceptual framework for the study;
- development phase: iterative design phase shaping the learning material;
- assessment phase: formative evaluation.

The data for prototyping the instructions was collected through observation and assessment of EFL advanced learners of different sociolinguistic backgrounds present in Estonia to identify the areas of speech which are significantly affected by linguistic transfer as well as to describe the degree of prosodic fossilisation. 10 instructions combining prosody and pragmatics were created and evaluated using three formative evaluation methods of walkthrough (discussions of the instructions focusing on the prototype from the SLA theoretical point of view), expert appraisal (an expert-teacher's review of instructions from their usability point of view), and screening (checking the design using a checklist of the required characteristics of the learning material).

Addressing the research question "What characteristics should be emphasized in instructions for improving oral production of EFL learners in Estonia?", the research revealed the following characteristics needed to be emphasized in the learning material for improving oral English production:

- Pronunciation teaching should engage learners' metacognition. Learners should be fully aware of the idea that it is their pronunciation that is being worked on during the lesson.
- Pronunciation should be taught using segmentals, suprasegmentals as well as texts containing both negative and positive messages.
- Prosodic differences between L1 and English should be demonstrated, ways of phonation revealed and practised.
- It has to be emphasized and practised that English stress involves more vocal effort compared to Estonian or Russian.
- It has to be emphasized and practised that English vowels have normally higher pitch.
- Speed of utterance should be included as an important feature of correct pronunciation for both separate words as well as sentences.
- Intonation rise and fall as well as the speed of speech can be highlighted in colour as a guiding tool.
- Learners would benefit from practising pronunciation based on personally created content.

The major limitation of the research is the evaluation of the effectiveness having the results not being immediate. The prototype can be researched in the classroom to contribute to the body of knowledge in the field. Further research can be related to teaching interactional strategies to help EFL learners design conversations with other speakers.

The research showed that stopping transfer in teaching EFL in Estonia would require a great deal of learners' metacognition. When it comes to prosody and pragmatics; it is important to demonstrate to the learners the differences between L1 and a target language phonation as well as introduce the aspects of speech that need to be rewired for improving their intelligibility. The study's product has a potential to solve practical problems with generating effective intervention and contribute to the body of knowledge in the field.

# Annotatsioon

Käesoleva magistritöö “Prosoodiat ja pragmaatikat kombineerivate juhiste prototüüpimine inglise keele võõrkeelena edasijõudnud õppijate kõneproduktsiooni parandamiseks” eesmärk on välja selgitada keelelist ülekannet pidurdavate ja õppijate kõne ning arusaadavust parandavate juhiste vajalikud omadused. Magistritöö uurimiseesmärkide tõstatamisel järgiti arendusuuringu üldisi printsiipe. Uuring koosnes kolmest etapist:

- eeluuringud (kirjanduse ülevaade ning valimi vaatlus ja hindamine);
- arendusetapp (juhiste prototüüpimine);
- osaline hindamise etapp (juhiste kujundav hindamine).

Tehti kindlaks, et kõige rohkem mõjutavad kohalike edasijõudnud inglise keele õppijate aktsenti ja arusaadavust järgmised kõnetootmise valdkonnad: põhitoon, intonatsioon, kõnetempo, rõhk, rütm ja kestus.

Kümme prosoodiat ja pragmaatikat ühendavat juhendit töötati välja õppijate keelelise ülekande vaatluse järelduste põhjal. Juhiseid hindasid teadlane ja ekspert-õpetaja järgmiste sammudega:

- Kiirtutvustus: Disaini uurimisrühm arutas prototüüpi omavahel kolm korda nii teoreetilistest kui praktilistest vaatenurkadest.
- Eksperthinnang: Õpetaja hinnang prototüübile struktureerimata intervjuu vormis.
- Sõelumine: juhiste kontrollimine kontroll-loendi abil.

Vastuseks uurimisküsimusele “Milliseid tunnuseid tuleks rõhutada juhistes Eestis inglise keele võõrkeelena õppijate kõneproduktsiooni arendamiseks?” näitasid uuringud, et õppematerjalides tuleks rõhutada järgmisi õppimise ja õpetamise aspekte: metakognitsioon, segmentaalide ja suprasegmentaalide häädus, samuti isikustatud tekstide tootmine.

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