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Phonetic Teaching Materials for Enhancing Early Childhood Education Teachers' Language Awareness in Finland

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ABSTRACT

Within the framework of language-aware pedagogy, educators in early childhood education and care (ECEC) are required to be aware of different languages and language forms, their usage and users, and the attitudes associated with them. Phonetic awareness is an important part of language awareness. This paper describes a multiprofessional cooperation project in which phonetic learning materials were created to increase ECEC teachers' phonetic knowledge and to provide teachers with ready-made learning materials for practicing the phonetics of the Finnish language, especially in multilingual groups. The data were collected in a pedagogical intervention during which early childhood education teachers piloted the materials. The data consist of answers to an online questionnaire provided by the teachers (n = 50). This study aimed to investigate the reception and usability of the materials from versatile perspectives and as experienced by different actors in Finland's early childhood context. The results reveal that the multiprofessional cooperation was successful in the process of developing and implementing the learning materials as they were found to be useful by all of the teachers who participated in the pilot intervention. Their applicability can be attributed to their versatility, meaning that they met the teachers' theoretical and practical needs.

Keywords: language awareness; phonetics; early childhood education; comparative linguistics; multilingual education/multilingualism

INTRODUCTION

Finland is experiencing growing linguistic diversity driven primarily by immigration. Currently, out of the 5.5 million people in Finland, over 8% have a first language other than Finnish, Swedish, or Sami, which are the three official languages (Official Statistics of Finland, 2023). The number of multilingual children aged 0–6 years increased from under 9,000 in 2000 to over 40,000 by 2021 (Official Statistics of Finland, 2023). The distribution of these diverse language groups varies significantly across educational institutions and residential areas (Bernelius & Huilla, 2021). In some municipalities, one in three children under school age (younger than seven years) has a multilingual background (Official Statistics of Finland, 2023). It was estimated that Finland's population growth between 2020–2040 will be entirely based on the foreign-speaking population (MDI, 2022). This evolving linguistic landscape has created a pressing need for language awareness and creative solutions to pedagogical practices in early childhood education in Finland and most other countries (see, e.g., Hui, 2014).

In this current study, language awareness means awareness of the importance of language in learning, participation, identity development, the ability and will to observe language in everyday interaction situations, and see language as a meaningful factor in humans' identities and behaviors (Honko & Mustonen, 2020a; 2020b; Andersen & Ruohotie-Lyhty, 2019; Moate & Szabó, 2019). Phonetic knowledge and awareness of speech sounds are integral parts of language awareness (Kennedy & Trofimovich, 2010). In early childhood education, the development of personnel's language awareness and language-aware pedagogy is particularly important because it can be used to support the identity, inclusion, learning, and balanced growth and development of a multilingual child as well as the well-being of the child, an educator, and an entire community (Honko & Mustonen, 2020a; 2020b; Pontier et al., 2020).

The growing need for language-aware pedagogy is also apparent in Finland's National Core Curriculum for Early Childhood Education and Care (ECEC). Since 2018, the ECEC has emphasized the importance of nurturing children's linguistic abilities, identities, and curiosity about languages, texts, and culture as well as the development of their Finnish language skills (Finnish National Agency for Education, 2018; 2022).

Earlier research (Honko & Mustonen, 2020b; Repo et al., 2024) has demonstrated that supporting multilingualism and implementing language-aware pedagogy are often perceived as challenging in early childhood education in Finland. The Language Comparison Tool utilized in this current study is designed to help teachers support multilingual children's Finnish language acquisition in early childhood education. From the perspective of language-aware pedagogy, and according to phonetic theories of second-language (L2) learning, comparing the phonological systems of languages helps to identify speech sounds that are unfamiliar to a speaker of a particular language and that most likely require perceptual and articulatory practice. This is because all language learning is inevitably affected by a speaker's first language (L1) and its existing phonological categories (Flege & Bohn, 2021; Best, 1994; Tyler, 2019; Honko & Mustonen, 2018; Honko et al., 2021).

Research has shown that young children are especially receptive to linguistic input (see, e.g., Giannakopoulou et al., 2013) and benefit from phonetic exercises when learning a new language (e.g., Immonen et al., 2022; Taimi et al., 2014). Despite these findings, explicit phonetic teaching materials have not previously been used to support children's L2 learning in the language-aware pedagogy of multilingual ECEC in Finland or globally. Therefore, it is specifically interesting to examine how these new materials and the phonetic information provided by the Language Comparison Tool were received and implemented by early education teachers.

The Language Comparison Tool investigated in this study was developed as part of an in-service training of Finnish ECEC teachers in 2022 via the cooperation of teachers and researchers. The participating teachers, both in the development of the Tool and the intervention pilot, represent the field of early childhood education; such teachers are required to have a bachelor's degree in education. In Finland, early childhood education teachers can work as teachers of different age groups (ages 1–6) and specialize in working as teachers of Finnish as an L2. L2 teachers do not have their own groups, but they visit groups in their municipality and support children in learning an L2 and consult the teachers of such groups.

This current study included both group teachers and L2 teachers in Finnish early childhood education. The aim was to examine how innovative materials, such as the Language Comparison Tool developed by the teachers themselves, can serve different early childhood professionals as a part of language-aware pedagogy and as part of pedagogy in early childhood education. The Language Comparison Tool is designed to support Finnish speech learning, but the same methods and phonetic principles can be used to support the learning of any language. Additionally, the process of developing materials applies to any learning material.

In this article, we present the experiences of the teachers (n = 50) who participated in the pilot phase of the Language Comparison Tool in the spring of 2022. The research questions of the study are as follows:

1. How did ECEC teachers evaluate the Language Comparison Tool after piloting it?
2. Are there differences between group teachers and L2 teachers in the reception of the Tool?
3. What conclusions can be drawn based on ECEC teachers' feedback regarding the development of phonetic learning materials in general?

Language Learning is Affected by a Speaker's L1

Newborns have the potential to learn any languages of the world. However, linguistic development advances rapidly in the first months of life. Research has shown that by six months of age, monolingual infants' speech-sound perceptions become altered by linguistic input, and their ability to perceive phonetic differences that are irrelevant in their L1 declines (Kuhl et al., 1992). This early neural commitment to L1 speech sounds is inevitable and necessary because it enables humans to distinguish meaningful sound differences in their L1 and, therefore, is an important step in language learning (Kuhl et al., 2008).

L1 phonological categories and their detailed phonetic variations are formed during infancy (Kuhl et al., 1992), and they affect speech perception and production throughout life (Kuhl et al., 2008). Challenges in L2 production and perception can, at worst, cause misunderstandings and difficulties in communication. According to L2 phonetic theories, a speaker's L1 influences the learning of new languages at the phonetic level (see, e.g., Flege & Bohn, 2021; Best, 1994; Best & Tyler, 2007; Tyler, 2019). Theories such as the Perceptual Assimilation Model of Second Language Speech Learning (PAM-L2; Best & Tyler, 2007; Tyler, 2019) and the revised Speech Learning Model (SLM-r; Flege & Bohn, 2021) state that potential challenges in producing and perceiving the sounds of a new language arise from differences between the sound systems of a speaker's L1 and the target L2. In other words, if a target language contains sounds that do not exist in the speaker's first language or languages, difficulties arise, and learning new sounds requires practice (e.g., Flege & Bohn, 2021; Best, 1994; Best & Tyler, 2007; Tyler, 2019; Kuhl, 1992).

The greatest challenge for language learners arises from sounds that resemble L1 sounds but are distinct phonological categories (Flege & Bohn, 2021). According to the PAM-L2, distinguishing between two distinct sounds in a new language may require practice (Best & Tyler, 2007; Tyler, 2019). For example, the English /r-l/ consonant contrast (as in *lead* - *read*) is often challenging for Japanese speakers because it does not exist in their L1 (Shinohara & Iverson, 2018; 2021). Also, the English /i-ɪ/ vowel contrast (as in *seat* - *sit*) can cause difficulties for L2 learners of English (see, e.g., Peltola et al., 2003) because it is not phonologically relevant in many other languages; therefore, correct perception and production of the contrast requires input and practice.

In addition to individual speech sounds, other phonetic and phonological features can pose challenges to language learners. For example, Finnish is a quantity language, which means that the duration of speech segments can change the meanings of words. For example, in the word pair /tuli/ (*tuli*, fire) and /tuːli/ (*tuuli*, wind), the duration of the first syllable vowel is the only phonetic difference between words, and it can be difficult for learners who do not have phonological quantity in their L1 to perceive and produce.

When children move to a new language environment, they must learn to perceive and produce new speech sounds to communicate in the surrounding language. In other words, they must adopt a new, different way of speaking. However, age affects L2 learning, and studies have shown that young children learn to perceive and produce L2 sounds faster than adults, both in immigration settings (Oh et al., 2011; Tsukada et al., 2005) and in phonetic training (Immonen et al., 2022; Taimi et al., 2014). This might be at least partly explained by children's developmental sensitivity to linguistic input, as some studies have found enhanced plasticity in spoken language acquisition for child L2 learners (Giannakopoulou et al., 2013).

Being aware of the phonetic and phonological characteristics of the Finnish language as well as the differences between the children's L1s and Finnish, can provide ECEC staff with a concrete way of understanding and supporting the development of multilingual children's Finnish language learning.

The Language Comparison Tool

The Language Comparison Tool represents a new creative approach to Finnish language-aware pedagogy, as the materials were created during an early education in-service training by combining phonetic research results and pedagogical practices uniquely. The training materials are based on the theoretical frameworks of SLM-r and PAM-L2 (Flege & Bohn, 2021; Best & Tyler, 2007) as well as empirical findings on the most effective ways of supporting speech perception and production learning (see, e.g., Immonen et al., 2022; 2023; Peltola et al., 2020; Saloranta et al., 2020; 2015).

The Language Comparison Tool (KieliVertailu, 2022) consists of two teaching materials: a phonetic guidebook about language comparisons for teachers and an exercise package with ready-made exercises for practicing the sounds and phonetic features of the Finnish language in an ECEC group. The sounds and phonetic features chosen for the exercises are those that most likely cause problems in communication in Finnish and require practice by speakers of different languages. The Language Comparison Tool is learning material that is freely available to anyone. The implementation of the Tool is supported by instructional videos, which can be found on the same website as the materials.

The guidebook offers a brief overview of phonetics and speech-sound learning, after which the characteristics of the Finnish language are briefly described. Also, the guide includes short descriptions of 11 languages most commonly spoken in Finland, each of which is phonologically compared to Finnish. The languages presented are Albanian, Arabic, Kurdish (Sorani), Somali, Mandarin, Thai, Turkish, Russian, Vietnamese, Estonian, and Ukrainian. In the guide, a language comparison is described both verbally and visually. Also, the guidebook contains some of the most common phrases (*hey* and *thank you*) in each language.

The exercise package follows the principles of the Finnish National Curriculum for ECEC (2022), which are child-centeredness, playfulness, and holistic learning. The exercises are based on phonetic and linguistic research on speech-sound learning and are beneficial for nonnative speech-training methods (see, e.g., Immonen et al., 2022; Peltola et al., 2020). The goal of the package is to support the development of children's functional Finnish skills (see,

e.g., Halliday, 1985; Mitchell & Myles, 2004; Aalto et al., 2009) playfully and communally. The package contains 12 ready-to-use learning exercises for practicing the sounds and phonetic features of Finnish. The exercises are designed to be fun and beneficial for all children regardless of their linguistic backgrounds. It can be used in all ECEC groups as well as with L1 Finnish-speaking children. The package is designed as a ready-to-use material because it includes instructions and other necessary materials that can be printed. Children's different interests were taken into consideration while developing the exercises, which include, for example, physical activities, stories, and board games that can be used indoors and outdoors.

The Language Comparison Tool was developed as a multiphase process with researchers, ECEC personnel (group teachers and L2 teachers), speech therapists, and language experts in 2019–2022 as part of projects organized by the Department of Teacher Training at the University of Turku and funded by the Finnish National Board of Education. The phases of the developmental process are presented in Figure 1.

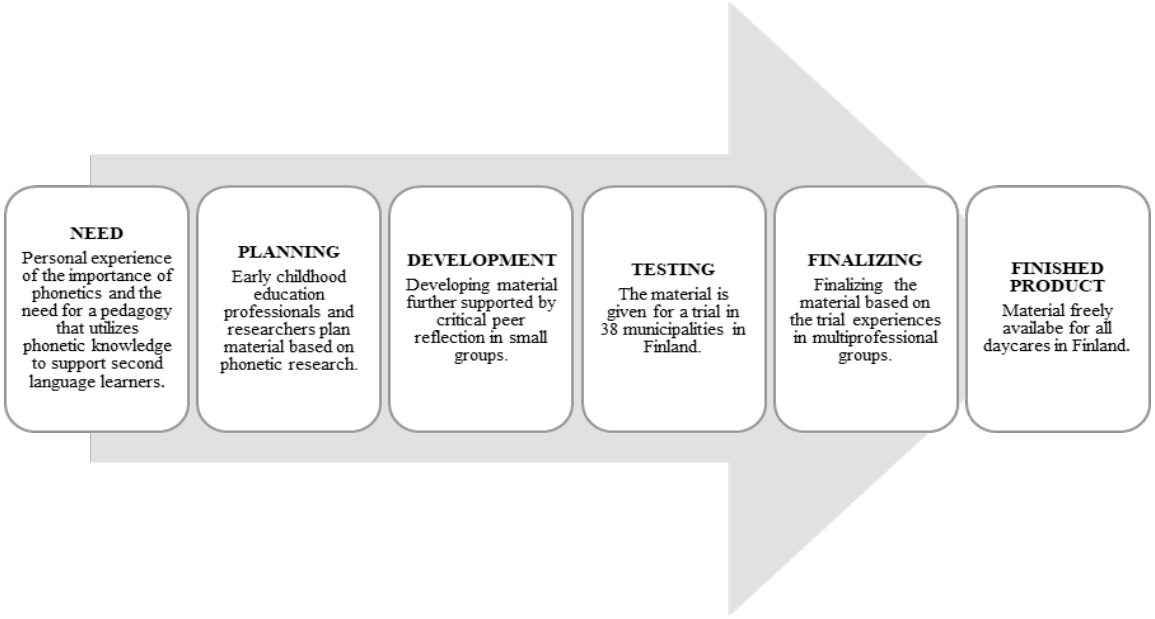

Figure 1: The development process of the Language Comparison Tool during an early education in-service training

METHODS

The Language Comparison Tool was piloted with 160 early education teachers (both group teachers and L2 teachers) across Finland in the spring of 2022. Participants for the pilot were recruited via free-formed email lists across the country, and participation was voluntary. The pilot phase lasted four months, and the participants were allowed to implement the material as they wished. The materials were sent to the participants, and they participated in an online training.

In the pilot intervention, the participants were asked to test and evaluate the usefulness of the materials in their work and their municipality, the likelihood of them using the materials in the future, and the most useful aspects of the materials in relation to their work. Furthermore, they were asked to assess whether using the materials had increased their knowledge and understanding of phonetics and how useful they found the exercises in their groups.

The data for the study were collected via an online questionnaire from the participants after the pilot intervention. However, the participants were allowed to test the materials without permitting their feedback as research data, and out of 160 teachers who participated in the piloting, 50 teachers gave the researchers permission to use their answers as data. Data collection was conducted anonymously, and the participants were allowed to interrupt their involvement at any point in the study. About half of the survey participants worked as group teachers (n = 24), and the other half worked as Finnish-as-a-second-language teachers (n = 23). The background information gathered was the municipality, daycare, work title, and educational background.

The piloting and data collection were conducted in accordance with the General Data Protection Regulation of Finland. In the results, when comparisons are made (RQ2), the language-specialized teachers (Finnish as a second language = L2) are grouped into one group, and the early education group teachers, as well as the special education teachers, are grouped into another group. This was done to find out if there were differences in how language-specialized teachers evaluated the materials compared to teachers working in the group.

The online survey contained seven Likert-scale questions (quantitative) and 11 open-ended questions (qualitative). The Likert-scaled questions aimed to estimate participants' perceptions of the usefulness and suitability of the Tool. The results of the quantitative data are presented as percentages, which are compared with each other (see Figures 2–4). The open-ended questions represent qualitative data. They aimed to capture the practicality and implementation of the materials and the participants' personal experiences. The qualitative data were analyzed following the principles of qualitative content analysis (Krippendorff, 2012; Schreier, 2012). First, the answers to the individual questions were classified. This analysis aimed to find the most significant common features of the answers and the individual answers with interesting remarks (RQ1).

The participants were coded with a letter and a number (e.g., P1 = participant 1). The quotes were translated into English by the first author and checked by a professional proofreader. The quotes used to support the presentation of the results most commonly represent a typical response.

RESULTS

ECEC teachers' evaluations of the Language Comparison Tool after piloting it

The results indicate that the Language Comparison Tool was found useful by all the teachers (an average of 4.6 on a scale of 1 = completely useless to 5 = very useful). They also found the materials useful for the work done in the municipality in general (an average of 4.4 on a scale of 1 = completely useless to 5 = very useful). When asked how likely a participant would use the Tool in the future, 62% reported probable and 36% somewhat likely (an average of 4.6 on a scale of 1 = highly unlikely to 5 = very likely). The overall rating for the tool was, on average, 4.3 (on a scale of 1 = poor to 5 = excellent); 66% reported the tool as good and 30% as excellent.

The participants were also asked to evaluate the tool by answering the following statements on a scale of 1 = strongly disagree to 5 = strongly agree: the appearance of the tool is successful (84% agreed or strongly agreed); the content of the tool is useful (100% agreed or strongly agreed); I learned new things (94% agreed or strongly agreed); the tool is easy to use (82% agreed or strongly agreed); the tool is easy to read (88% agreed or strongly agreed); and things are clearly explained (92% agreed or strongly agreed); the tool contains too many difficult concepts (8% agreed or strongly agreed); and the guide and training package work well together (96% agreed or strongly agreed). The results are presented in Figure 2.

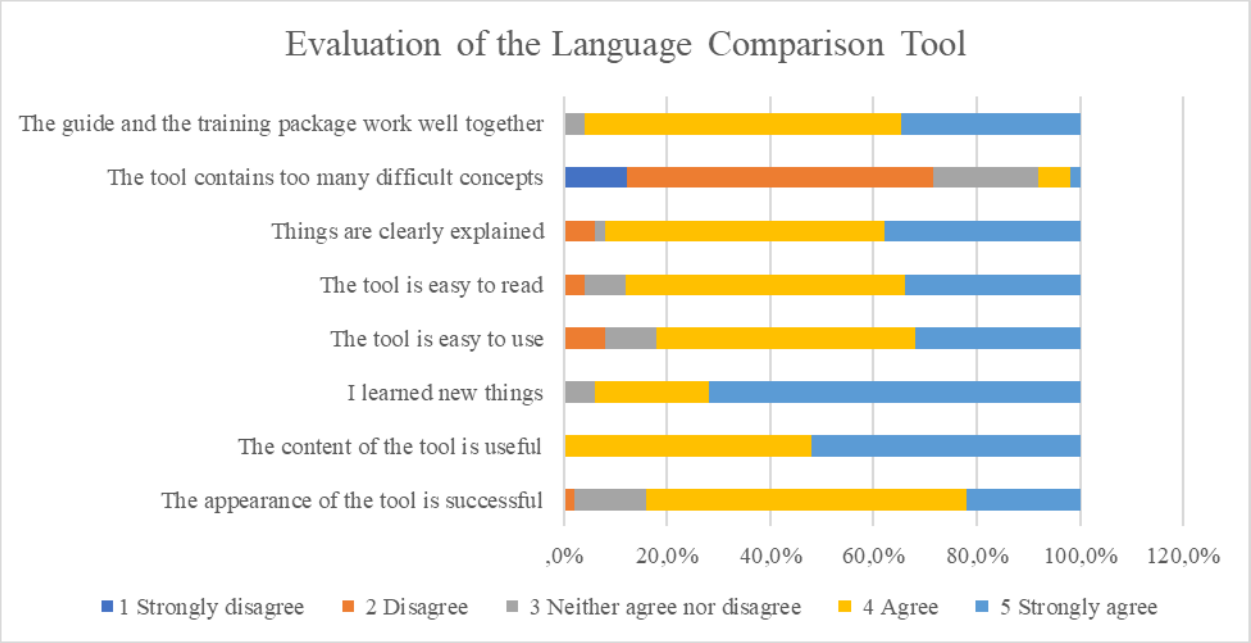

Figure 2: Evaluation of the Language Comparison Tool

When asked about the general usefulness of the Language Comparison Tool in an open-ended question, the participants (n = 25) reported that they found the exercises useful, clear, and interesting for the children: "The best thing was the fact that the training package has ready-made materials" (P26); and "The children thought the exercises were fun and the whole group benefited from them" (P35). Also, the information provided in the guidebook was reported to be

useful in the open-ended reports (n = 14): "The best thing was the informative part of the guide about what should be taken into account when planning an activity for a group of children who use different languages" (P27); "I think the guide was very useful and opened up potential challenges related to Finnish language learning very well" (P9). One participant reported that she thought using only the exercise book could include risks: "There is a danger in the exercises that you do not practice the 'right' things with the children if the adult does not understand why he or she is doing a certain activity" (P8). One participant reported, "The guide is good if you can read it" (P19), and one reported, "Application is possible both in groups of adults and in groups of children" (P50).

The participants were asked to evaluate the guidebook separately by answering the following statements on a scale of 1 = strongly disagree to 5 = strongly agree: after reading the guide, I understand what phonetics is (84% agreed or strongly agreed); after reading the manual, I understand what speech sounds are (88% agreed or strongly agreed); the guide increased my understanding of different languages (98% agreed or strongly agreed); with the help of the guide, I could independently compare any language phonetically (52% agreed or strongly agreed); the guide increased my understanding of the effects of the first language on Finnish learning (94% agreed or strongly agreed; and with the help of the guide, I understand the language learners in my group better (96% agreed or strongly agreed). The results are presented in Figure 3.

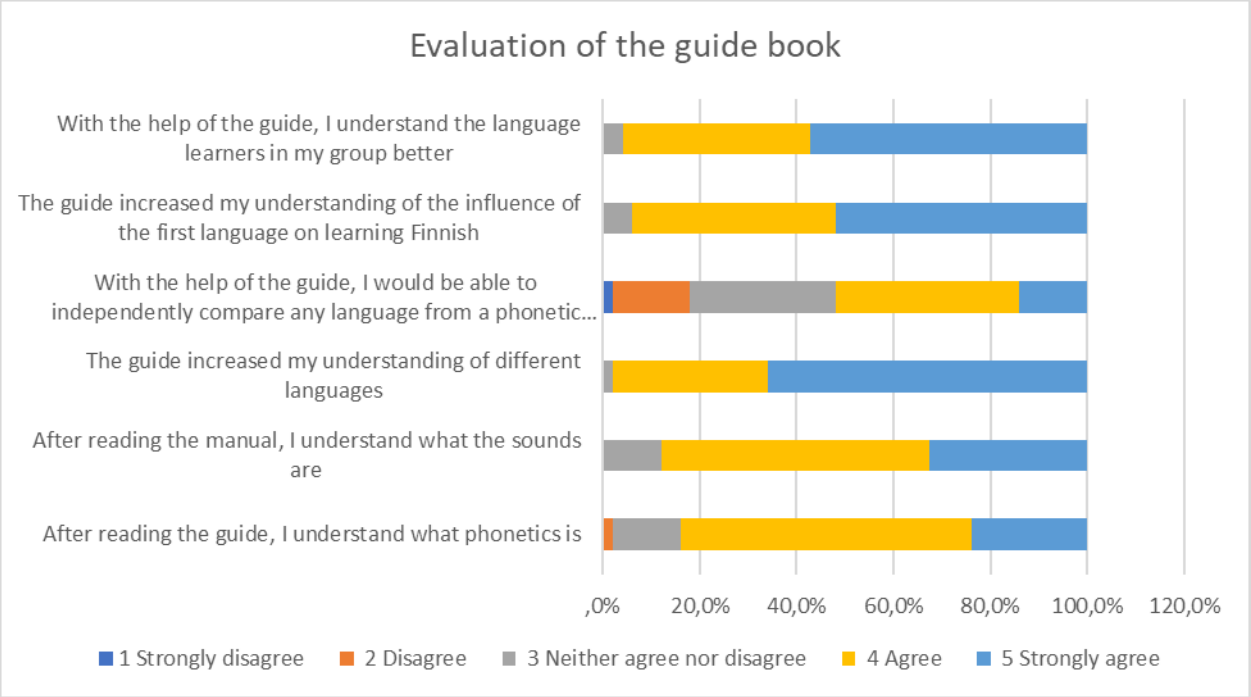

Figure 3: Evaluation of the guidebook

The participants were asked to evaluate the exercise book separately by answering the following statements on a scale of 1 = strongly disagree to 5 = strongly agree: the illustration of the exercises is successful (79% agreed or strongly agreed); the materials for the exercises (e.g. picture cards and stick puppets) are functional (88% agreed or strongly agreed); the exercises are

functional (81% agreed or strongly agreed); and the instructions are clear (82% agreed or strongly agreed); it was clear to me in each exercise what was being practiced and why (83% agreed or strongly agreed); the children gained experiences of success through the exercises (90% agreed or strongly agreed); the children found the exercises interesting (85% agreed or strongly agreed); it was easy to inspire the children to participate in the exercises (79% agreed or strongly agreed) and the exercises were useful (92% agreed or strongly agreed). The results are presented in Figure 4.

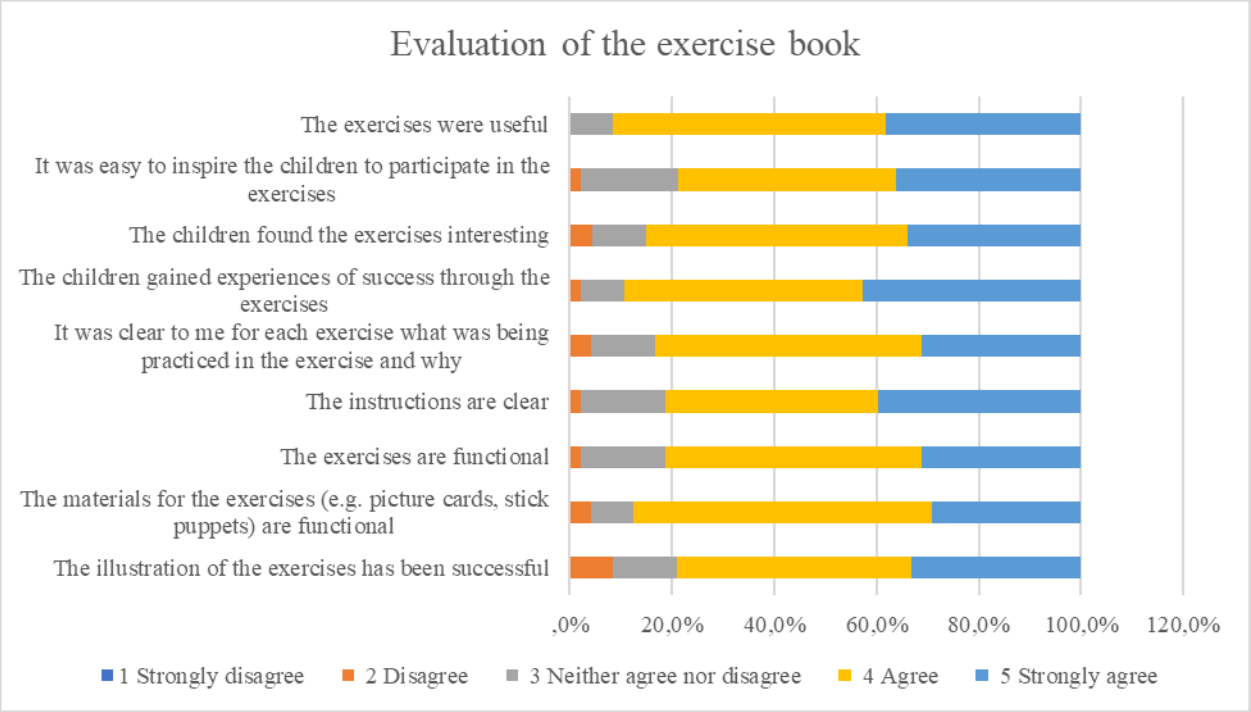

Figure 4: Evaluation of the exercise book

Next, we describe the groups in which the materials were tested, the most popular exercises, and other remarks by the participants regarding the Tool and its usability. Most of the participants (65%) reported using the materials a few times during the pilot period, 25% used the material weekly, and 8% used them only once. The data are presented in Figure 5.

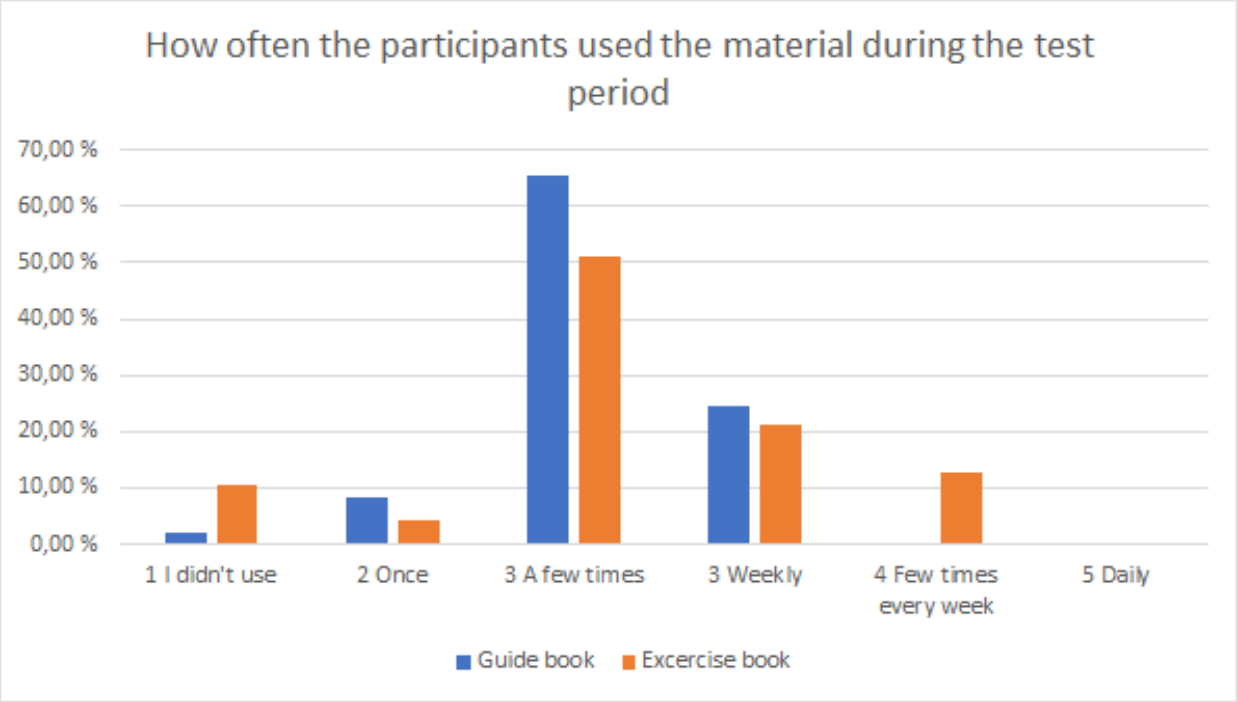

Figure 5: How often the participants used the material during the test period

Each participant was asked to report which of the exercises they tested. The most tested exercises were Sound Jumps with Finnish Vowels (n = 22), Parrot Pecking (n = 22), Sound Rally (n = 19), The Parrot Imitates Troll Language (n = 19), and Emergency Vehicles on the Move (n = 19).

The goal of the Sound Jumps with Finnish Vowels exercise is to practice the discrimination and production of the Finnish vowel pairs /i-y/, /e-ø/, /ɑ-æ/ and /u-o/ through imitation and repetition. The phoneme pairs were selected for this exercise because they are often acoustically difficult to distinguish for Finnish learners since the vowels /y, æ, ø/ are not phonological in many other languages. The goal of the Parrot Pecking exercise is to practice the discrimination and recognition of Finnish diphthongs, which do not exist in most other languages. Therefore, their recognition and production often require practice. The Sound Rally exercise can be used to practice the recognition and production of any speech sounds (i.e., the teacher can modify the exercise according to the specific needs of the group). Sound Rally can be played on a game board, a playmat for toy cars, outdoors, in a gym, or in transitional situations.

In the Sound Rally exercise, the car is given different sounds when driving in different situations. The exercise can be applied according to the interests of the children. Children can play robots, birds, or princesses, for example. The Parrot Imitates Troll Language exercise aims to practice distinguishing the vowels /y, æ, ø/ by imitating a fictional troll language. The exercise is based on clear articulation, repetition, and imitation. In the exercise, the new target sound occurs after repeated familiar sounds, which emphasize the differences between the sounds and draw attention to their acoustic differences. The aim of the Emergency Vehicles on the Move

exercise is to practice producing the long vowels /y:/, /æ:/, and /ø:/. In this game, children imitate different emergency vehicles while producing long vowels. As shown in Figure 6, all exercises were tested during the test period.

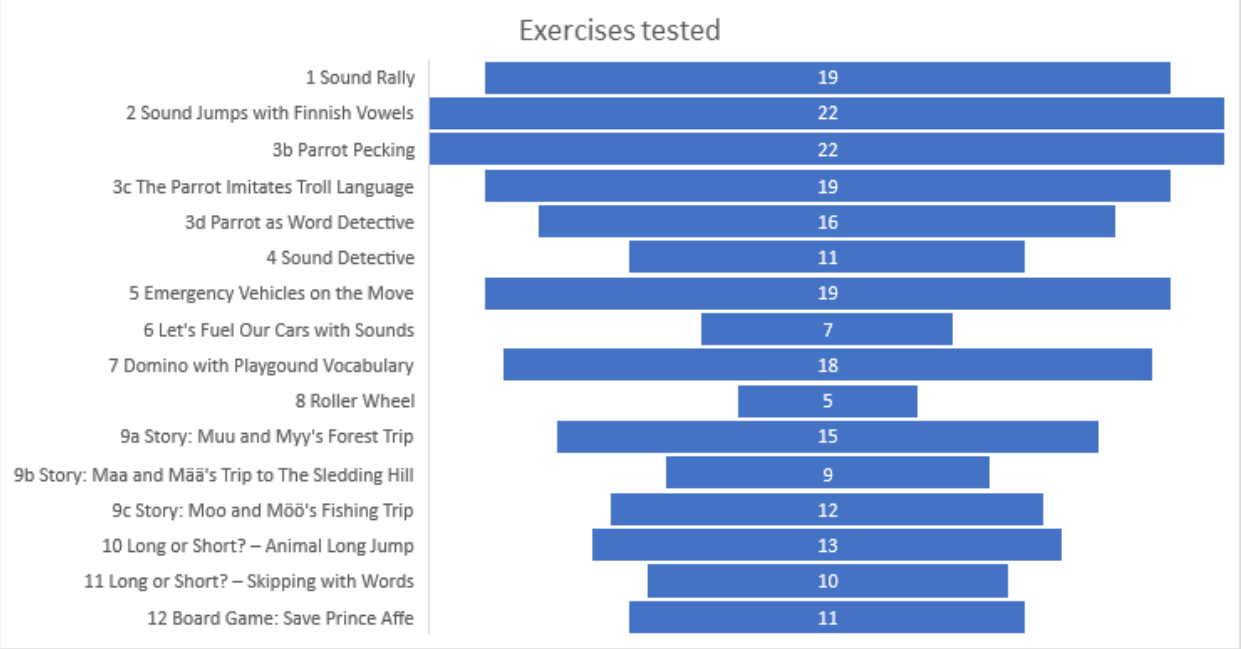

Figure 6: Exercises tested

When asked which of the exercises was particularly effective and why, the participants reported that they especially liked the following exercises: Parrot exercises, Emergency Vehicles on the Move, Domino with Playground Vocabulary, and the stories. As reasons for liking these exercises, they gave the following reasons: the exercises inspired the children/they enjoyed them; all the children could join in, and the functionality of the exercises in a daycare setting. The participants also described how they used the exercises. Some of the teachers used the exercises according to the instructions in the exercise book: "With the help of a good table of contents, it was easy to find appropriate exercises. The detailed instructions in the exercises were good" (P16). However, some started instantly molding the exercises to work better or easier in their specific group: "I used quite a few ready-made tasks because once I got an idea of what to develop, it was easy to focus on the existing songs and games in which to bring out the necessary sounds" (P30). "Various training tips were great. They worked as a great way to start, and with the model, you were able to develop the exercises yourself" (P5).

At the end of the questionnaire, the participants were given a chance to freely comment on the Tool, the piloting period, or anything related to the pilot. The open-ended feedback was divided into three categories: a usable, clear, and needed tool for early childhood education settings *(n* = 26), comprehensive, large-scale material that requires time to become familiar with (*n* = 8), and critical comments (*n* = 4). In the first category, the teachers described the tool, for example, as follows: "It's great that this has been accomplished. It came in handy even though I've been doing this job for over 30 years" (P10); "A great and much-needed tool for Finnish as a second language (L2) teaching" (P22); "It is really great and gratifying that such a clear and

practical tool has been created. The initial phase of language learning is a valuable time, and it lays the foundation for all subsequent language learning" (P31); and "The trial period taught me a lot about the challenges of L2 children learning the Finnish language, especially vowels. I will definitely use the material in the future" (P27).

In the second category, teachers described their experiences as follows: "The tool is functional as a whole, albeit very broad. It takes time and familiarization to get the most out of it;" (P11), "I wonder how well the staff will have the time and energy to familiarize themselves with the guidebook. Some things may seem difficult (e.g., the chapter on sounds). However, easier things might arouse interest, and that's great. The ready-made exercises will certainly be received with joy…" (P9), "Getting familiar with the tool requires a lot of effort and practice even for an adult. Useful, yes. Thank you!" (P35).

In the last category, teachers gave critical comments: "There is a lot of material, but the similarity to the illustration would have made it look more cohesive. Now it had a bit of a mixed appearance. Some really nice pictures, some so boring that I didn't try it because of that." (P38), "A welcome package for everyday life in kindergarten. However, it is not possible to adapt an activity to each language group separately in the kindergarten setting (P36); "When the activity is group-based, and there is only one child that speaks a different language" (P8); and "The material is really extensive and quite expensive to copy in color to get nice pictures" (P30).

Overall, the feedback was very positive and most of the teachers commented that they looked forward to the release of the Tool for national use and aimed to start using it systematically the following year.

Differences in Finnish-as-a-second Language Teachers' and Group Teachers' Attitudes Toward the Materials

There was no variation between L2 teachers and group teachers in how they rated their overall experience with the Language Comparison Tool (an average of 4.3 for both groups). However, the L2 teachers (n = 7) rated the guidebook as more important than the group teachers (n = 3). On the other hand, the group teachers rated the exercise book as more important (n = 13) than the L2 teachers (n = 3).

There were no noticeable differences between how L2 teachers and group teachers evaluated the guidebook (on a scale of 1 = strongly disagree to 5 = strongly agree): After reading the guide, I understand what phonetics is (L2 average: 4.0; Group teacher average: 4.1); After reading the guidebook, I understand what speech sounds are (L2 average: 4.1; group teacher average: 4.3). The guide increased my understanding of different languages (L2 average: 4.7; group teacher average: 4.6); With the help of the guide, I could independently compare any language phonetically (L2 average: 3.6; group teacher average: 3.3); The guide increased my understanding of the effects of the first language on Finnish learning (L2 average: 4.4; group teacher average: 4.5); and With the help of the guide, I understand the language learners in my group better (L2 average: 4.6; group teacher average: 4.5). The data are presented in Figure 7.

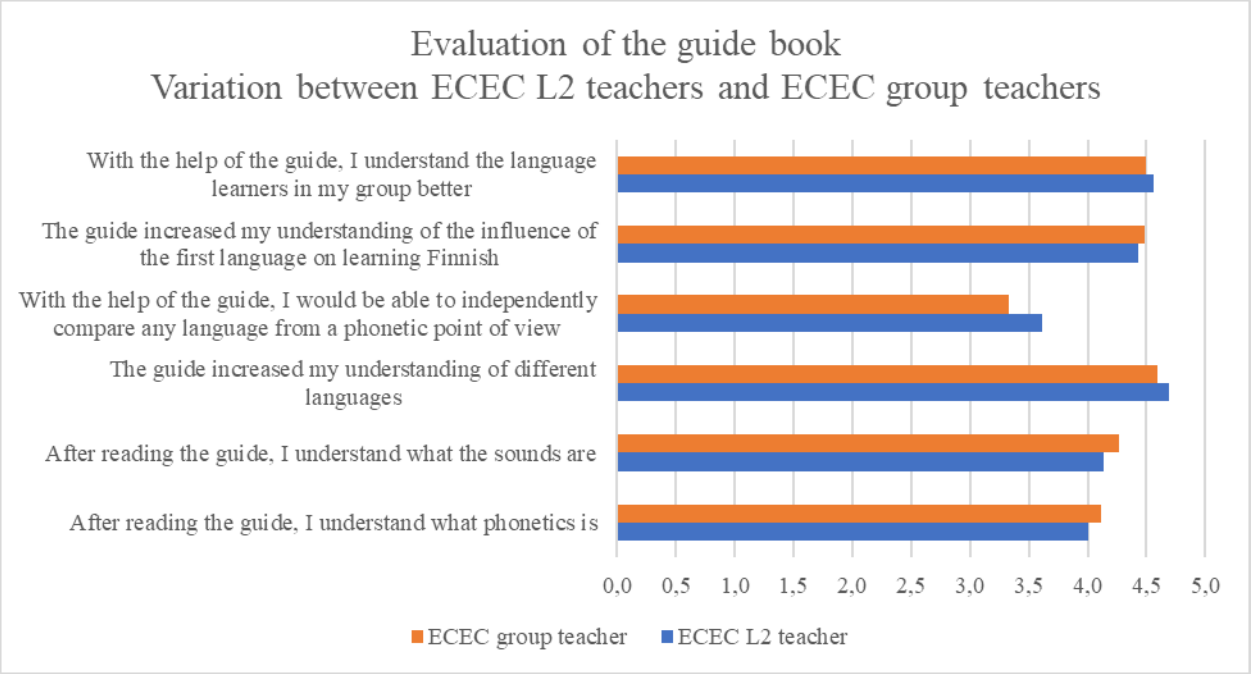

Figure 7: Evaluation of the guidebook: Variations between L2 teachers and group teachers

There were some differences between how Finnish-as-a-second-language teachers and early childhood education group teachers evaluated the exercise book (on a scale of 1 = strongly disagree to 5 = strongly agree). The group teachers evaluated the statements related to the exercise book a little bit higher than the Finnish-as-a-second-language teachers: The illustration of the exercises was successful (L2 average: 3.9; group teacher average: 4.2); the materials for the exercises (e.g., picture cards and stick puppets) are functional (L2 average: 4.0; group teacher average: 4.2); the exercises are functional (L2 average: 4.0; group teacher average: 4.2); the instructions are clear (L2 average: 4.2; Group teacher average: 4.2); it was clear to me in each exercise what was being practiced and why (L2 average: 4.0; group teacher average: 4.2); the children gained experiences of success through the exercises (L2 average: 4.2; group teacher average: 4.4); the children found the exercises interesting (L2 average: 4.0; group teacher average: 4.2); it was easy to inspire the children to participate in the exercises (L2 average: 4.0; group teacher average: 4.2); and the exercises were useful (L2 average: 4.3; group teacher average: 4.3). The data are presented in Figure 8.

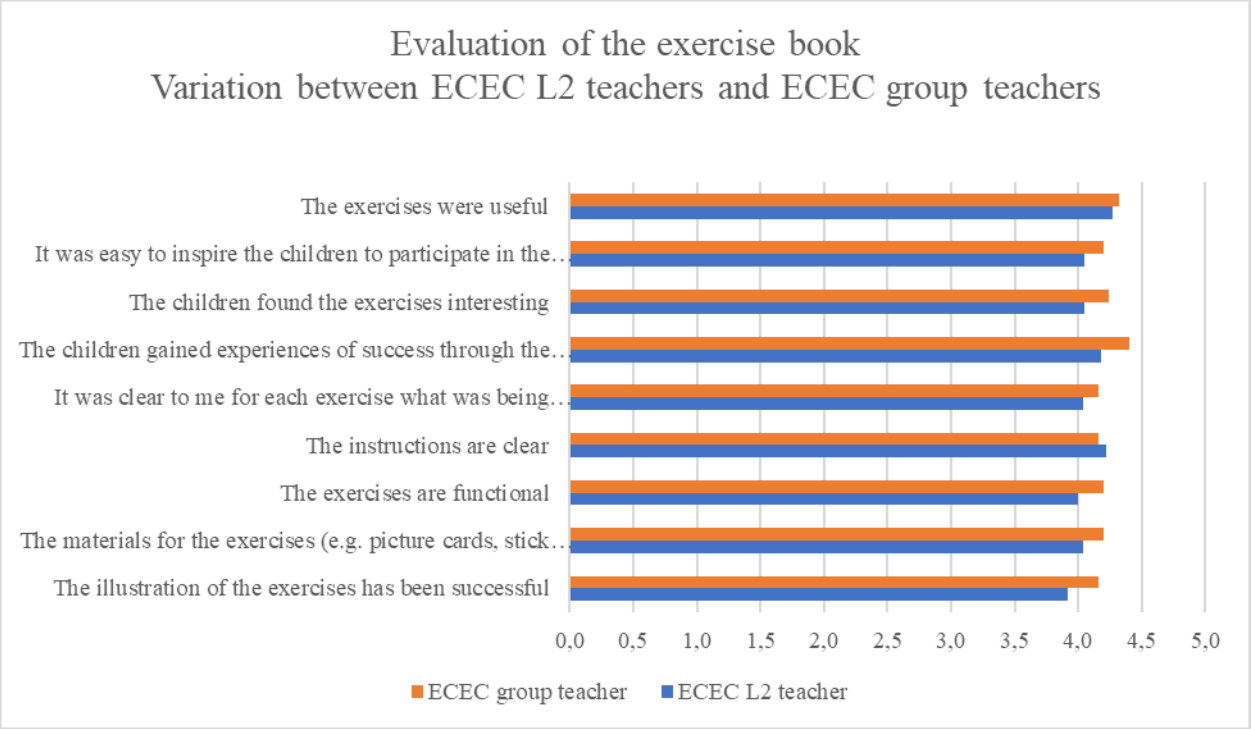

Figure 8: Evaluation of the exercise book: Variations between L2 teachers and group teachers

When we looked at the exercises tested by the group teachers and L2 teachers, there were few differences between the groups. L2 teachers tested the following exercises more: Parrot as Word Detective, Long or Short? And Skipping with Words and Board Game: Save Prince Affe. However, the Group teachers tested more of the following exercises: Sound Rally, Sound Detective, Emergency Vehicles on the Move, Let's Fuel Our Cars with Sound and the story: Muu and Myy's Forest Trip. The data are presented in Figure 9.

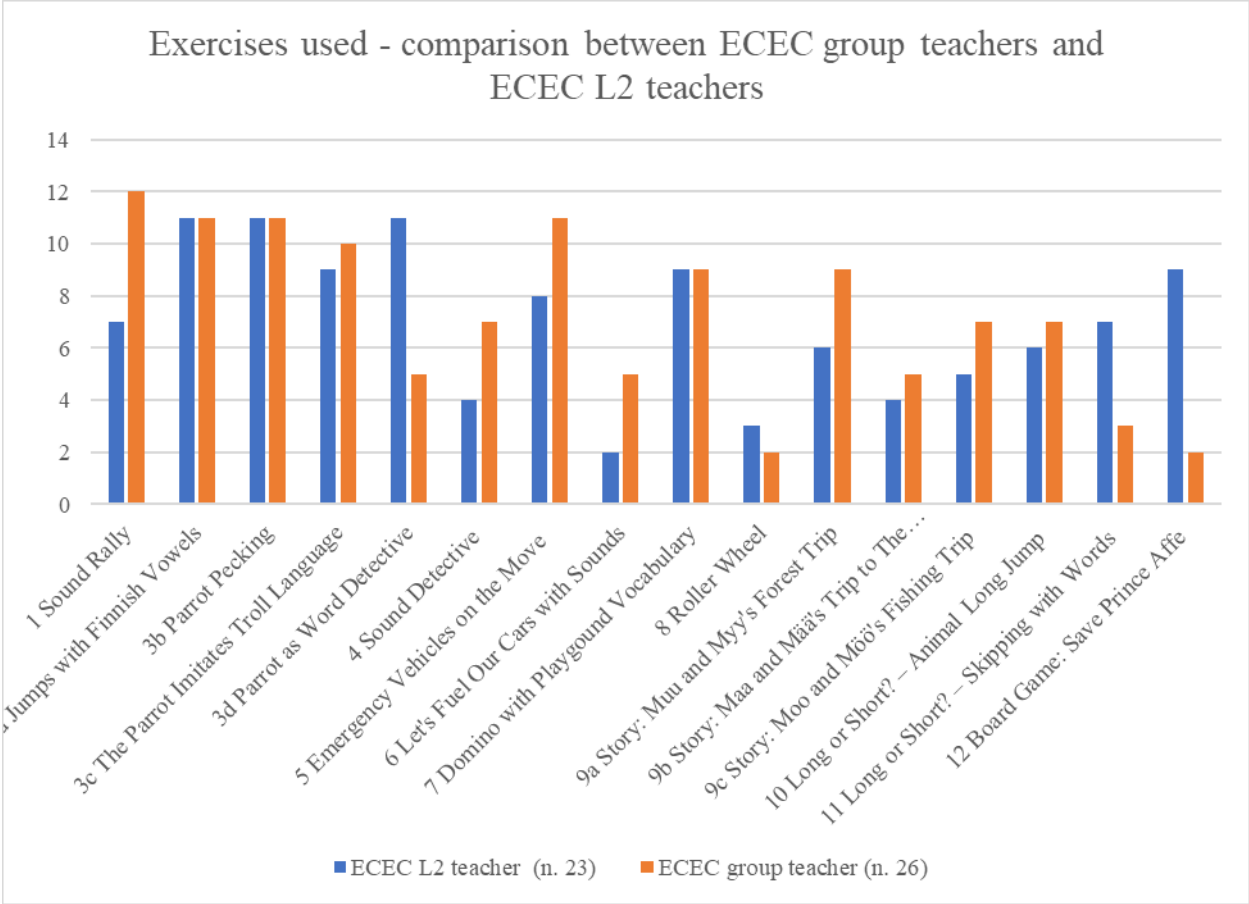

Figure 9: Exercises used – comparison between group teachers and L2 teachers

DISCUSSION

This study investigated learning material called the Language Comparison Tool from versatile perspectives and as experienced by different actors in the early childhood context in Finland. According to Razawi et al. (2023), L2 pedagogy consists of lesson planning, material selection, active designing processes, and classroom instructions. By taking into account the phonological and phonetic differences between the learner's first language and the language being learned, attention can be drawn to those phonetic elements that require the most practice (Best & Tyler, 2007). Thus, the basics of phonetics can be taught to teachers, and they can apply this knowledge to any language. This is reminiscent of research by Razawi et al. (2023), which emphasizes the ability to apply learning strategies to different contexts in an L2. In their study, the skill of applying was seen as a resource for L2 learners, and in this study, the application skills were also taught to teachers of L2 learners.

Teachers' evaluations of pedagogical innovation, such as the Language Comparison Tool, are described as a negotiation process, which means assessing the desirability of the innovation and its consequences for practice as well as pondering to what extent and how the innovation will be a part of the pedagogical practice of a teacher. This evaluation usually leads to

adopting the pedagogical innovation, deciding to use it selectively, or dismissing and resisting the innovation (Vermeir & Kelchtermans, 2020). In this study, the reception and assessments of the usability of the Language Comparison Tool from the early childhood teachers were very positive. The material was considered usable in many ways, and even visually pleasing. All the teachers seemed to have adopted the Tool or planned to use it selectively. Furthermore, there was almost no resistance to or dismissal of the innovation. This indicates that there is an increasing need for phonetic knowledge in early childhood education and that teachers are willing to use materials that support them in acquiring phonetic knowledge and using it pedagogically.

The research showed that the Language Comparison Tool is a very open and flexible learning material (about learning materials, see, e.g., Kelchtermans & Ballet, 2002). Few of the teachers described the flexibility of the materials as an opportunity to develop them according to their own needs. In general, the adaptation of the Tool was supported by the versatility of the material: Some teachers found the theoretical information most useful, and some of the games and other pedagogical resources the material contained. Furthermore, the results show that the approach used in the learning materials to learn phonetics and sounds was easy to adopt, and it was possible to learn things without previous experience in phonetics. Although some early childhood educators felt that they could not use the material for independent language comparisons, they nevertheless felt that they had learned something new and had gained a new understanding of sounds and language learning.

One of the main results of the study shows that both early childhood educators in groups and teachers specializing in L2 learning and multilingual children found the material almost as beneficial. However, they adapted the Language Comparison Tool in somewhat different ways. The L2 teachers selected to concentrate on the theoretical information (guide), while the early childhood education teachers in groups focused more on the pedagogical resources of the material (exercise book). This may be related to the fact that L2 teachers often focus only on multilingual children in their work and may encounter them very personally. The ECEC group teacher, on the other hand, mainly works in groups of more than 20 children. This was also seen to some extent in the choice of materials, as the L2 teachers have the opportunity to choose, for example, board games that are suitable for use in small groups, while the ECEC group teacher has to choose exercises that are suitable for a large group and a multilingual environment. It seems that the material is adaptable to both needs and can act as a common pedagogical Tool among different actors. Additionally, evaluation supports the demand for a more inclusive education, which requires, for example, the possibility of dividing children into small groups to support more individualized learning. According to Ismail et al. (2022), this kind of individualized learning is key to enhanced language acquisition.

The positive experiences with these materials might be partly because the process of developing them was innovative and took place in collaboration with various early childhood education professionals and researchers. Also, the need came from the field. In this way, the process combined the practical expertise of early childhood education as well as the scientific expertise of pedagogy and phonetics. In general, this study suggests, as in several previous studies (Kauppinen & Aerila, 2020), that involving early childhood education staff in designing teaching materials for their own use is an effective strategy. In this way, the materials can be targeted to their needs. Cooperation with researchers, on the other hand, ensures that the materials are up-to-date and correctly targeted from the point of view of the subject area. Above

all, however, this kind of development activity is a dialogic process between different actors.

The teachers' feedback also reveals the playfulness and joy of the Language Comparison Tool. These aspects can increase the implementation of the materials as they are an integral part of the Finnish early childhood education curriculum (Finnish National Agency for Education, 2022). According to the curriculum, all learning in early childhood should be playful and child-centered. Also, several international studies have emphasized playfulness and fun in learning (Fisher, 1992; Ismail et al., 2022; Singer, 2013; Hassinger-Das et al., 2017; Ancho, 2020). They are a natural way for children to be engaged in an activity and to be supported in their motivation to learn. Additionally, children's joy of learning motivates adults to continue with an activity and repeat its use (Broadhead et al., 2010).

There is a limitation to this study. The piloting phase was only four months, which might have affected the adaptation of the Language Comparison Tool.

CONCLUSION

Phonetic awareness in early childhood is important because young children are developmentally sensitive to linguistic input, and early language development forms the foundation for their language learning. Each language has its unique speech-sound inventory, and communicating in a foreign language requires the ability to recognize and produce speech sounds that are relevant to that particular language. Phonemic awareness is also a key early competency for emergent and proficient reading and spelling. This means that phonetic awareness and related pedagogy should be part of the language-aware pedagogy of all languages. According to Radzi et al. (2020), one of the greatest challenges for L2 instruction is creating interesting and interactive learning moments that, alongside content knowledge, will enhance space for a learner's active participation. The Language Comparison Tool, which is based on a solid theoretical background and uses playfulness as well as age-appropriate activities, seems to reach all of these goals.

This study illustrates that early childhood education personnel are motivated and able to improve, design, and evaluate the practices of language-aware pedagogy. As Vermeir and Kelchtermans (2020) stated, an initiative to alter pedagogical practices can be bottom up implemented by the teachers, and ideas for new pedagogical practices may come from teachers. This study shows that in a multiprofessional project that involved both teachers and researchers, even the most current and complex information could be transferred to pedagogical practices.

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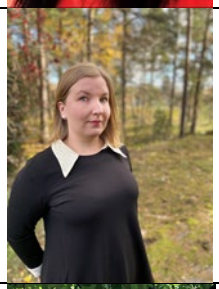	Dr. Katja Haapanen has a PhD in phonetics and works as a project expert (Department of Teacher Education) and as a researcher (Phonetics and Learning, Age & Bilingualism laboratory) at the University of Turku. Her research focuses on children's second language learning and speech perception and production.
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