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EDITORIAL

Dear readers,

The current issue of *“Problems in Music Pedagogy”* (PMP) includes studies on the problems of professional music education.

Antti JUVONEN and Minna MÄKINEN from University of Eastern Finland proposed two studies. One examines the development of musical professional identity among classroom teacher students during teacher training. Authors conclude that courses focusing on the personal practice of small groups and trying things out on a practical level are of the greatest importance for the development of musical professional identity among classroom teacher students. Practical advice and experiments became most important during the study period, but pedagogical and philosophical as well as educational starting points and theories are becoming more and more important in later teaching and in the development of teacher identity. The results of Finnish researchers are very useful for the creators and implementers of music teacher study programs.

The second study focuses on performance-centred teaching and thinking in musical instrument learning. Authors found the lack of creativity and the need to increase it in the entire instrument playing experience. The competitiveness and performing in instrument teaching are ‘black education’ as well as the methods and procedures from the past are easily revealed behind the ostensibly constructivist teaching-learning conception and the teachers’ hidden objectives cast a shadow over the instrument studies of many talented students. They should be replaced by the genuine joy and delight of playing, playfulness and creativity, from where the music originally stems.

The effectiveness of musical activity depends on the development of musical hearing, which is important for any future musician. Gaļina ZAVADSKA (Daugavpils University, Latvia) explores timbral hearing’s diagnostics as an integral part of the development of musical hearing. In the frames of a case study, she elaborated and piloted indicators and assignments for diagnosing the timbral hearing development level of the future professional musicians.

The research done by Baiba TRINITE, Olga BLAUZDE, Mirdza PAIPARE, Ilze VALCE, Dina BARUTE, Madara IVANE and Dina SLEZE (University of Liepaja, Latvia) characterises the conductor’s working environment and reveals those factors of voice ergonomics that impact the conductor’s voice. Authors note that knowledge about voice ergonomics is important for choir conductor’s professional development. Therefore, teaching voice ergonomics should be brought into choir conductors’ educational programs, the standard of professions and post-diploma education.

I am grateful to the authors of the articles in this issue for bringing the problems of professional music education into focus and hope that readers will respond to the ideas put forth here and contribute more theoretical and practical ideas that deepen our collective understanding of how to teach and nurture musicians and music educators in the 21st century.

Editor-in-chief
Jelena DAVIDOVA

DIAGNOSING OF THE TIMBRAL HEARING DEVELOPMENT LEVEL OF THE FUTURE PROFESSIONAL MUSICIANS

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Abstract

As a result of changes in the role of timbre in 20th – 21st century music, issues related to the phenomenon of sound nuances – timbre have begun to attract closer attention from researchers. The effectiveness of any musical activity depends primarily on the development of musical hearing. Timbral hearing's diagnostics is an integral part of the development of musical hearing.

Within the scientific literature, the issue of diagnosing musical abilities has attracted far more attention (Seashore et al., 1960; Tapacova, 1988; Swanwick, 1999; Adams, 2001; Campbell, 2008; Wallentin, Nielsen, Friis-Olivarius, Vuust & Vuust, 2010; Law & Zentner, 2012; Ullén, Mosing, Holm, Eriksson & Medison, 2014; Asztalos & Csapó, 2017). However, questions dealing with diagnosing timbral hearing problems have not so far been scientifically underpinned.

Research aim: *to elaborate and pilot indicators and assignments for diagnosing the timbral hearing development level of the future professional musicians.*

This study examines the possibilities of using indicators and assignments to identify the timbral hearing development level of the future professional musicians. Data analysis of the results of diagnostic assignments' piloting in the frames of case study allows using the obtained data for designing pedagogical strategies for the development of timbral hearing of future professional musicians.

Keywords: *levels of timbral hearing development, indicators, diagnostic assignments*

Introduction

Contemporary tendencies for society development require choosing a new pedagogical paradigm in all stages of music education, when the professional competence, as a leading and decisive result of education, becomes the principal characteristic trait of student's personality. By its nature, musical activity is very specific, and different musical abilities, emotional experience and perception are required for its disclosure. In the process of training professional musicians, relatively little attention is paid to the

development of timbral hearing. However, the development of this type of musical hearing significantly affects the formation of a musician.

In research, traditionally, musical hearing is regarded as one of the main human musical abilities (Helmholtz, 1895; Stumpf, 1883; Теплов, 1947; Seashore, 1967; Gordon, 1971). In turn, timbral hearing is one of components of musical hearing. Timbral hearing is one kind of harmonic hearing and one of the most essential components of teaching a contemporary musician's hearing (Теплов, 1947), though in the teaching praxis it has not yet been adequately reflected. A perfectly developed timbral hearing is considered the highest level of professional musical hearing and it is of a tremendous importance for any future musicians.

Timbral hearing deepens the perception of polyphonic instrumental and vocal music, increases students' self-control when performing compositions. Consequently, for a better understanding the various theoretical problems in music pedagogy and for a successful solution of practical tasks related to the professional musicians' training, a comprehensive research study on diagnosing timbral hearing is a vital necessity.

Problems of diagnosing musical abilities have received relatively significant amount of attention in the scientific literature (Stumpf, 1883; Тапачова, 1988; Swanwick, 1999; Adams, 2001; Campbell, 2008; Asztalos & Csapó, 2017). Many tests for exploring musical abilities have been developed (Seashore et al., 1960; Bentley, 1966; Lehman, 1968; Gordon, 1971; Thompson, 1987; Law & Zentner, 2012), qualitative criteria for assessing sight-singing have been established (Davidson et al., 1988), models for the development of composing have been worked out for professional composers (Bennett, 1976), as well as tests to identify the level of general musicality (Ullén et al., 2014) and musical competence have also been designed (Wallentin et al., 2010). According to K. Asztalos & B. Csapó (2017), although research on the assessment of musical abilities started several decades ago, regular monitoring of their development in educational practice requires further research (p. 683). However, issues directly related to diagnosing timbral hearing problems have not yet received any scientific underpinning and methodological support.

Research aim: to elaborate and pilot indicators and assignments for diagnosing the timbral hearing development level of the future professional musicians.

Methods and Sample

As part of the case study, the following research methods were used:

- the analysis of methodological and theoretical literature on the problem under the research;
- modelling of indicators for diagnosing the level of timbral hearing development of future professional musicians;
- piloting of the designed indicators and assignments for diagnosing the timbral hearing development level of the future professional musicians.

The participants in this research were 20 third-year students (three groups) from Daugavpils Stanislaus Broks Secondary Music School, from whom one was an accordionist, two were drummers, three - pianists, four - choir conductors, four - brass

band players (three trumpeters and one flautist), four were string instrument players (one viola player, one violoncellist, two violinists), and two - music theoreticians.

The sample for piloting is not highly representative, but it comprises participants from all specialties (with the exception of vocalists, because there are vocalists who have no previous musical education, and they study by a different sol-fa program).

Theoretical Background

Based on the findings of educational scientists (Burceva, Davidova, Kalniņa, Lanka, Mackēviča, 2010), a teacher's diagnostic activity is interpreted as identifying the level of the development of students' abilities. According to Campbell (2008), diagnosing assessment may help a music teacher to determine students' educational level and degree.

The problem of diagnosing musical aptitude is one of the most current problems of music pedagogy, since it is related to tasks of professional and individual choice. Stumpf (1883), one of the founders of music psychology, was the first person, who seriously addressed the issues of individual differences of musical abilities and tried to develop experimental tests to diagnose them. According to his interpretation, the approach to musicality was determined by theoretical perceptions about it as a psychic formation. Since that time, the whole history of music pedagogy has actually been related to testing musical abilities, which became the leading tendency in researching them.

The second trend – research on cases of exceptional musical giftedness - is also related to this. However, the diagnosis of musical aptitude, just like any other way of diagnosing, may also pursue wider scientific goals and become the basis for the research on the opportunities of its further development.

In the area of musical tests, Hargreaves (2012) isolated three main forms: tests of achievement, attitude, and ability. The last type is designed to assess musical aptitude regardless of previous musical learning or experience.

Due to the transformations in the role of timbre and other qualities of sound in music of the 20th – 21st century, the questions pertaining to the phenomenon of sound color – timbre have begun to attract increased attention from researchers' part (Zavadska, 2021). Sounds produced at the same pitch and volume, but performed on different instruments, by different voices or on one instrument but by different techniques of playing are distinguished one from the other by their timbres (McLachlan, Marco & Wilson, 2013). Other authors define timbre as the time-varying pattern of spectral components by which a sound may be recognized (Handel, 1995; Handel & Erickson, 2004).

The timbre component of musical hearing is not given a due attention: in some way, it seems to be neglected, and its development remains passive as regards to melody. In the practice of teaching sol-fa at an average professional level (music school), the line of complication of pitch, mode and harmony difficulties, is sufficiently well elaborated and methodologically well-constructed. The author should note that the amount of the taught material is reduced in timbre. The potential for diversity of a specific timbral incorporation into the music of the 20th – 21st centuries is not used enough. The basic

forms of work on the development of hearing (dictation and analysis by ear) are implemented in mono-timbral conditions – the piano (Zavadska, 2021).

Research Design

Due to the fact that this study involved 20 students (future professional musicians) of various specialties (accordion, drum, piano, choir conductor, trumpet, flute, viola, violoncello, violin and music theory), significant differences of their timbral perception should be noted. Pianists have a more developed textured, register hearing; they “hear” the sound without relying on a variety of instrumental timbres. Therefore, as a rule, this side lags behind in development. On the contrary, string instrument players often have a well-developed melodic hearing, while for the theoreticians the instrumental timbre occupies the first position among the hierarchy of expression means. Work with the teaching material in its original format is obligatory for them.

Thus, in developing timbral hearing teacher has to take into account both the major and the minor developed aspects of timbral perception. For the performers of all specialties, the timbre of one’s own instrument makes the perception easier. Writing dictations performed on ‘one’s own’ instrument gives better results (for wind instrument players - this is a melody of brass instruments from the orchestral or solo repertoire).

The research data was collected in 2020; students completed assignments during lessons in the classrooms of Stanislavs Broks Secondary Music School. The third-year students have two sol-fa lessons a week, each 40 minutes long. The assignments were completed within two weeks. Doing assignments took about 20 minutes from the total time of the sol-fa lesson, and this appeared to be enough for students to write a timbral dictation.

To maintain quality of the musical fragments offered for listening, audio recordings were made as separate files, which were played 8 – 10 times in a real time. Musical fragments of different musical styles were used for the timbral dictation: classical (the 18th century), romantic (the 19th century), impressionistic (19th – 20th century) and contemporary (the 20th – 21st century).

The students were given partly completed sheet music from the *Sibelius* program, preceded by some preliminary oral advice from the teacher, which the students had to fill out.

During the process of diagnosing, it was essential to identify the developmental level of every student’s timbral hearing. The comparison of diagnostic assignments and summary of the results would provide the opportunity to use the obtained data for designing the strategy and methodology for the further development of timbral hearing.

Timbral hearing can be developed with the help of a timbral dictation – one of the working forms on sol-fa. Therefore, ***diagnostic tasks were based on different kind of timbral dictations:*** rhythmic dictation, sound-pitch (melodic) dictation, dictation containing mistakes and mixed timbral dictation.

The assignments were distributed in accordance with the growing complexity: first a rhythmic dictation, then the melodic dictation, dictation containing mistakes and the

mixed type of a timbral dictation. Additionally, from the very beginning, priority was given to vocal music, as the closest in timbre to any person. In all cases, students were given partially filled-in specimens of sheet music and some small 'prompts – supports' were provided in all of these sheets.

A. Rhythmic timbral dictation

In the musical fragment of *La Grotte* by C. Debussy given below (see Figure 1), students were offered for a dictation a sound-pitch material without a rhythmic pattern.

LA GROTTTE

Poème de
T. L'HERMITE
(1601-1655)

C. DEBUSSY
(1862-1918)

Attention au rubato !
Très lent et très doux

① 0:17

② 0:30

[•]

Figure 1. Fragment from a rhythmic timbral dictation

In the foreground, the focus is on timbre-rhythm. Students were offered to listen to a vocal composition of *La Grotte* by C. Debussy accompanied on the piano and add the rhythmic pattern to the already given sound-pitch line, and to do this by applying rules of writing a vocal grouping. The rhythmic pattern was not a simple one: there were not only crotchets, quavers and semiquavers, but also triplets. Besides, some supportive points – 'prompts' were written in correctly, so that the participants could find the right direction at doing the assignment.

B. Sound-pitch (melodic) dictation

In the next musical fragment – *Folksongs* – by L. Berio (see Figure 2), the task was oriented towards identifying and writing sound-pitch melodic line with the rhythmic pattern already given.

FOLKSONGS
3. Loosin yelav... L. BERIO
(1925-2003)

Texte et mélodie :
Traditionnel arménien

① ♩ = 58

Voice

1. Loo - sin__ ye - lav en sa - reetz__
2. xa - varn__ ar - ten tchà - ka - tzav__

2e couplet ⑥
a Tempo

Clar.

ppp

7

sa - ree__ par - tzàr ga - da reetz sheg - leeg__ meg - leeg
oo el__ ked - neen tcha - ga tzav loos - ni__ loo - sov

② 0:27

p

Figure 2. Fragment from a melodic timbral dictation

However, the assignment was more complicated due to the fact that the accompaniment was played not on the piano, but by the instrumental ensemble, moreover, it was required to write in the given part (melody) of a clarinet solo.

C. Dictation containing mistakes

The given note material *Seit ich ihn gesehen* by R. Schumann included an extracted vocal melody containing mistakes and with a piano accompaniment (see Figure 3). Students listened to the correct melody, simultaneously marking and correcting mistakes.

FRAUENLIEBE UND LEBEN op. 42
L'AMOUR ET LA VIE D'UNE FEMME
 I. Seit ich ihn gesehen

Texte de
 A. von CHAMISSO
 (1781-1838)

R. SCHUMANN
 (1810-1856)

① **Larghetto**

Singstimme

Seit ich ihn ge - se - hen, glaub' ich blind zu sein;
 wo ich hin nur blik - ke seh' ich ihn al - lein; wie im
 wa - - chen Trau - me schwebt sein Bild mir

Figure 3. Fragment from the dictation cotaining mistakes

This type of a timbral dictation is aimed not only at the perception of timbre, ability to distinguish a melody and correctly write it down, but also at concentrating the attention and inner musical hearing.

D. Mixed timbral dictation

This is the most complicated kind of dictation, since it implies the ability to link the melodic pattern with its specific timbral embodiment. As an example of a mixed timbral dictation, musical fragment from a Mozart' symphony (see Figure 4) was chosen.

SYMPHONIE n° 22 K. 162
 I.

① Tonalité:
 Écrire les degrés aux endroits indiqués, jusqu'à la fin de l'extrait.

W. A. MOZART
 (1756-1791)

② **Allegro assai**

Oboi

Violoncello
 e Basso

Tempo of this musical fragment is quite fast, but the melodic line of string instruments and later the line of the wind instruments are quite simple – according to the sounds of a major triad and singing of the second degree by the oboes. Recording of this type of dictation reflects the interrelations between timbre and melody, its impact on the perception of a sound-pitch, which is one of the aspects of acquiring timbre, but the basic stress is laid on the timbral constituent of musical sounding. The main task of a timbral dictation involves not only recording of a sound-pitch, but also studying ‘sound portraits of instruments’, broadening conceptions about their expressive, register and articulatory properties. Students’ attention is directed towards the huge variety of instruments’ expressive facets.

In the frames of this study, indicators for diagnosing the level of development of timbral hearing during writing a timbre dictation have been worked out (see Table 1):

Table 1. Indicators for diagnosing the level of development of timbral hearing during writing a timbre dictation

LEVEL, NUMBER OF POINTS	INDICATORS
Low (1 point)	Less than 50% of a timbral dictation are written correctly
Average (2 points)	a) 60% - 80% of a timbral dictation are written correctly b) some mistakes in lengths and writing notes are permissible
High (3 points)	a) 80% - 100% of a dictation are written almost without mistakes b) insignificant inaccuracies are permissible in writing notes or rhythm

On the basis of the developed level indicators of for diagnosing the level of development of timbral hearing during writing a timbre dictation, it is possible to analyze the results of a diagnostic study and develop pedagogical strategies for the development of timbral hearing of future professional musicians.

RESULTS

After completing the first assignment – a timbral rhythmic dictation *La Grotte* by C. Debussy – the results were as follows (the highest number of possible points – 44):

- Nine students reached the highest level (among them one theoretician, two pianists, two drummers, one wind instrumentalist, two choir conductors and one accordionist);
- Six students attained the average level;
- The dictations of five students were rated as low.

This type of a dictation appeared to be the easiest one and according to the indicators – having the best results.

The completion of the second assignment – a timbral sound-pitch dictation – *Folksongs* by L. Berio - yielded the following results (the highest number of possible points – 40):

- Five students reached the highest level (among them two pianists, one wind instrumentalist, one string instrument player and one accordionist);
- 10 students attained the average level;
- Five students received the lowest number of points.

After the completion of the third assignment – a timbral dictation containing mistakes, R. Schumann's *Seit ich ihn gesehen* – the results were as follows (the highest number of possible points – 34):

- Only two students attained the highest level (among them one pianist and one choir conductor);
- 10 students reached the average level;
- Eight students got the lowest number of points.

After completing the fourth assignment – timbral mixed dictation, W.A. Mozart's *Simphonie* – the results were such (the highest number of possible points – 38):

- Four students reached the highest level (among them one pianist, one theoretician, one choir conductor and one wind instrumentalist);
- 10 students attained the average level;
- Six students got the lowest number of points.

The general results of the diagnostic study by level are presented in Figure 5:

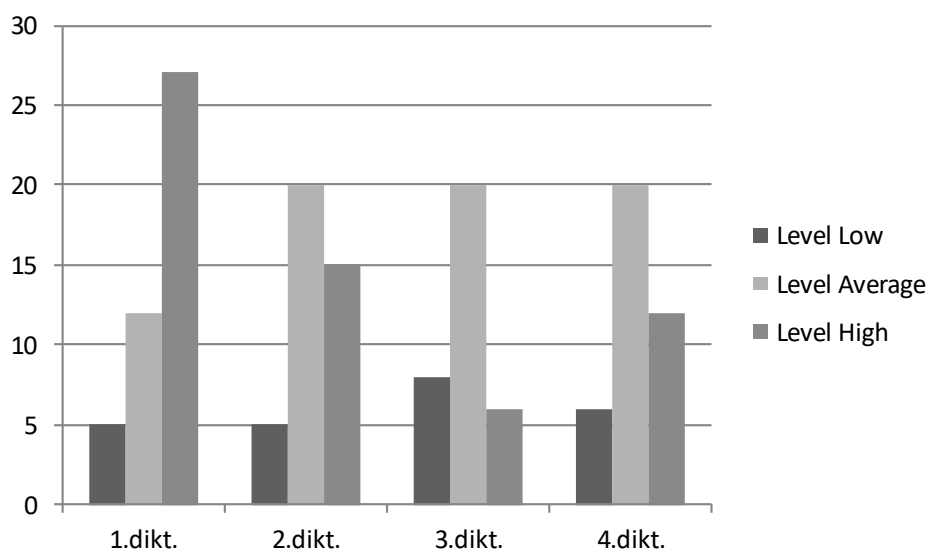


Figure 5. Results of the diagnosing research by levels

Analysis of the results of the diagnostic study allows us to state the following:

- The first task - timbre-rhythmic dictation - gives the best results. This testifies to the fact that the majority of students have quite a well-developed sense of rhythm and the change of timbers during perceiving and writing a dictation did

not impact on the quality of fulfilling the assignment. Such indicators can be attributed to the great work on the development of sense of rhythm among students in the preliminary courses. During the preliminary courses, at sol-fa lessons a lot of time was devoted to the analysis and carrying out different exercises on rhythm.

- Timbral-tonal (melodic) dictation is also performed relatively well. This indicator, too, can be attributed to the previous students' experience of writing melodic dictations.
- Complications were expected when writing mixed timbre dictations. This is a new type of a timbral dictation. Distinguishing instruments and differentiating melodic lines have to be based on a very important skill – ability to discriminate by ear a definite timbre from the context of music; however, this skill is not yet properly developed. Therefore, further pedagogical strategy towards developing timbral hearing should be based on considering this indicator.
- Unexpected difficulties arose when writing the dictation containing mistakes. Working mistakes into a musical timbral dictation involves very different aspects of hearing and various qualities of psychological activity:
 - thinking, providing comprehension of what was heard;
 - memory, giving the opportunity, through remembering, to specify what was heard;
 - inner hearing, ability to mentally hear and imagine sounds, rhythm and other elements.
- For successful work on this type of a dictation, close attention should be devoted to oral dictations. An oral dictation can develop quickness of reactions, concentration of attention, ability to quickly 'catch' and remember small fragments containing the most significant intonation difficulties, namely, all qualities that are required for the work on a dictation containing mistakes. Consequently, oral dictations should be included in the strategy for a further development of timbral hearing.

CONCLUSIONS

1. Timbre is a unique individual sound color, which belongs to a specific instrument. Timbre has assumed a special significance in a contemporary music, since it often comes to the foreground as one of the most important expressive means, and therefore during music lessons a close attention should be given to the development of future professional musicians' timbral hearing.
2. Diagnostics of the future professional musicians' musical aptitude is related to identifying and investigating the level of each student's timbral hearing. During this research, indicators for diagnosing the timbral hearing development level of the future professional musicians were worked out. Diagnostic assignments based on various type of timbral dictations were developed as well: rhythmic dictation, sound-pitch (melodic) dictation, dictation containing mistakes and a mixed dictation.
3. Analysis and summarising of the diagnostic results enable using the obtained data for further designing of pedagogical strategy and methodology for the development of timbral hearing.

4. A timbral dictation is an essential, but not the only form of developing students' timbral hearing. Along with timbral dictation, author can recommend other work forms: a comparative timbral auditory analysis, analysis with the accompanying questions, with score, creative assignments, cross-discipline forms of free use of timbral presentations (organization, arrangement a. o.).

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THE SIGNIFICANCE OF STUDY-TIME EXPERIENCES FOR DEVELOPMENT OF THE MUSICAL PROFESSIONAL IDENTITY OF CLASSROOM TEACHER STUDENTS

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Abstract

The purpose of this study was to determine which courses and study modules increase the willingness of classroom teacher students to teach music in their future work. We also asked the students for development ideas to renew teacher education. The basic population of the study were classroom teacher students from the Joensuu campus of the University of Eastern Finland in 2020 (N = 86).

This study is a follow-up to an earlier study examining the impact of teacher education curriculum reform on student attitudes towards music teaching (Mäkinen, 2020; Mäkinen, Eronen & Juvonen, 2020). We searched for more detailed information about studies, which students considered to be the most effective and strengthening of their self-esteem. The questionnaire included questions about the respondents' gender, age and hobby in music. 76% of them were women and 24% men. 36% had music as a hobby. About 32% of respondents had not been at all eager to teach music before they started their teacher training.

The respondents were asked to choose study modules that they found useful from 21 items, varying from educational sciences to integrated arts and skills and including lecture teaching and small group studies. Teaching practice periods and extracurricular activities were also included. Small group lessons were the most popular. They included playing of school instruments and the pedagogy of music education. The next most popular item was instrument playing studies (piano or guitar). Encouraging feedback from educators and fellow students was considered as important. The development ideas included a need to increase special pedagogy and the number of hours of instrument studies. Many respondents wished for as practical teaching and materials as possible.

Keywords: *professional growth, music education, self-efficacy, teacher training*

Introduction

The first author of this article worked as a music teacher at Joensuu Practise School in 2014–2016. The teaching practice in the autumn of 2014 revealed the outright fear

described by several classroom teacher students of teaching music. This sparked interest in finding out why students were reluctant to teach music, and whether their willingness could somehow be influenced during a teacher training programme. How can professional growth be supported to encourage future class teachers to teach music? On this topic, the first author conducted a PhD study in which she examined the professional growth of classroom teacher students during teacher training (Mäkinen, 2020). All students who participated in the study were students at the University of Eastern Finland's Joensuu campus during the academic year 2015–2016. For the present article, the research was supplemented with material collected from class teacher students at the University of Eastern Finland in 2020.

In Mäkinen's (2020) dissertation research, attitudes towards music teaching became more positive 1) in supervised teaching practice and 2) by offering new types of study units in skills (handicraft, physical education) and arts (visual arts, music) subjects. According to Mäkinen (2020), in teaching practice, team teaching was perceived as a very rewarding and encouraging way to teach music. Many respondents felt that their own sense of competence in music teaching increased with the support of another student. In addition, the guidance of practising school and university lecturers was considered important because the lessons became functional and varied with their help. The student's (sometimes modest) music skills could be used in many ways, and in this way, they received positive experiences in teaching music. Several students felt that they also gained strength and courage from pupils in the classes they taught (Mäkinen, 2020, 68-69).

The reformed (2015) teacher education curriculum also improved students' willingness to teach music in their future work. The revised curriculum was introduced phase by phase at the University of Eastern Finland in 2015. A particularly large change took place in the subjects of skills and arts, which were assembled into integrated teaching units, in which physical education, visual arts, handicrafts and music were combined under the heading TATA (meaning *taito ja taide* in Finnish, skills and arts in English). A new way of bringing together study modules between different skills and arts subjects, the reform of assessment of the whole course, an increase in independent work and a strong pedagogical approach all increased the students' ability to teach music. Music was still perceived as a challenging subject, but students' enthusiasm to teach it in their future work increased decisively and statistically significantly (Mäkinen, 2020, 70). We as researchers hope that the present study will provide more clarity as to which of the offered courses and teaching modules were perceived to increase the students' own competence and, on the other hand, their self-efficacy.

Background

This study discusses 'professional growth' because the term includes the idea of a changing professional identity that can be developed. Development does not stop when formal education ends, but growth continues throughout working life. Laine's (2004) brief description of the development of professional identity was chosen as the definition of professional growth (See Figure 1). According to him, professional identity is built on the basis of the past, present, and foreseeable future (Laine, 2004).

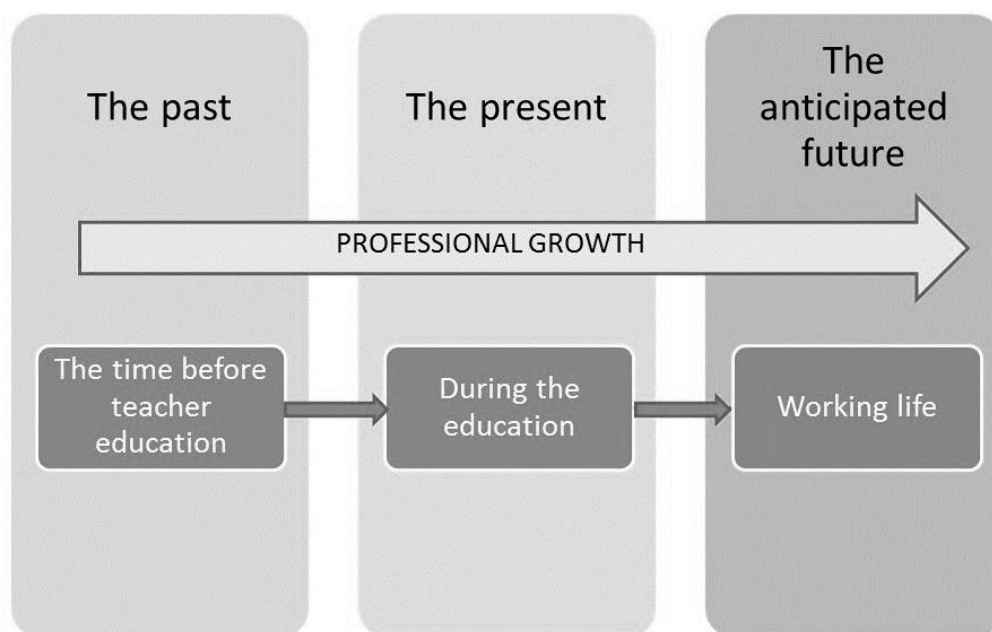


Figure 1. Professional Growth Model (Mäkinen, 2020, 51)

The past in the model describes the time before teacher education and is considered to affect a teacher's professional growth (Huhtinen-Hildén & Björk, 2013). According to Ivanova and Skara-Mincnea (2016), the development of professional identity also begins before education and is based on previous life experiences of teaching and personal experiences of being a pupil at school (see also Joseph, 2001; Laine, 2004; Ojanen & Lauriala, 2005). In their thoughts students have different teacher models that they have accumulated over a period of 12 years at school. Patterns are either conscious or subconscious (Huhtinen-Hildén & Björk, 2013). Ivanova and Skara-Mincnea (2016) emphasize that in addition to professional growth, students also develop their personality (Väisänen, 2004).

Väisänen (2004) also talks about the fact that the professional development of a teacher begins when the future teacher is still sitting on the school bench, so it differs from professional development in other professions (Laine, 2004; Väisänen, 2004). When starting teacher studies, the student already has an idea of the ideal teacher to be pursued (Laine, 2004; Russel-Bowie, 2010; Koski-Heikkinen, 2014). This model has evolved from teachers who taught the student during their school years before entering teacher training, some teachers whom they have liked, and some they have not. Many have had positive experiences of their own abilities in music or, on the other hand, experiences that they are not doing well, and that music is foreign to them. Some students may have in their background school experiences in music that have quenched their eagerness to study music (Juvonen, 2008; Hennessy, 2017; Mäkinen, 2020).

In her dissertation, Mäkinen (2020) describes the attitudes, hopes and beliefs towards teaching music that student teachers already had when they entered education. Respondents' past experience raised doubts about their own musical abilities and in some cases outright fears about teaching music. In some of the answers, the opposite idea could also be seen, and music teaching was considered to be interesting and

pleasant. The phrase *“A confusing and chaotic atmosphere has been left in my memory of my own music lessons”*, taken from the dissertation material Mäkinen (2020), describes the view of very many students that a negative attitude towards music had been adopted long before the start of studies (Henley, 2017, 479). Of course, the same phenomenon works the other way around. From the phrase *“However, I am personally interested in music and experienced it during school hours always in a positive light, so I hope to be able to provide the children with my own enthusiasm as an example”* (Mäkinen, 2020, 15) is seen as a positive effect of previous years. If the experiences have been positive and the student's own music teaching has been encouraging, the student perceives his or her past as a goal to become a similar teacher. In the situations described, we can talk about self-efficacy in music, which Juvonen (2008) has studied. According to him, it is related to a person's own perception of their musical talent and, on the other hand, their own musical abilities.

The present in the model reflects the effectiveness of education. Many scholars believe that there is a learning process, which leads to a profession and its identity. It is affected by an individual's cognitive, conative and affective areas (Kyrö, Mylläri & Seikkula, 2008). The attached model (see Figure 2) shows these three areas. The concept of readiness is at the top of the figure. It contains values and attitudes, as well as knowledge and skills that have been established in the student teacher even before further education, for example, in hobbies or school life (i.e. the past). Often students have in their mind an idea of the ideal teacher to be pursued. Such an ideal teacher model may also become an obstacle to learning and the development of one's own skills, as one's own personality may be forgotten. The term also refers to the teacher student's educability, i.e., willingness to learn (Kyrö, Mylläri & Seikkula, 2008, 276).

All the knowledge and skills needed in the teacher's profession are related to the cognitive area. For a teacher to be able to teach any subject, he/she must acquire sufficient content knowledge and develop his/her own skills in that area. The teacher must also be familiar with theoretical knowledge of educational science and teaching (Kyrö, Mylläri & Seikkula, 2008; Mäkinen, 2020). The conative realm is considered to include the concepts of motivation, self-esteem, self-image and self-regulation. All these together and separately affect the quality of learning (Koiranen & Ruohotie, 2001; Mäkinen, 2020). The affective area is related to human temperament and character traits as well as values and attitudes. Emotions are often subconscious ways of reacting to a thing or situation. Emotions can change depending on the situation, whereas a person's temperament (collection of traits) is often a permanent quality. All parts of the affective area affect the learning process and situations (Keltikangas-Järvinen, 2008; Huotilainen, 2008; Mäkinen, 2020).

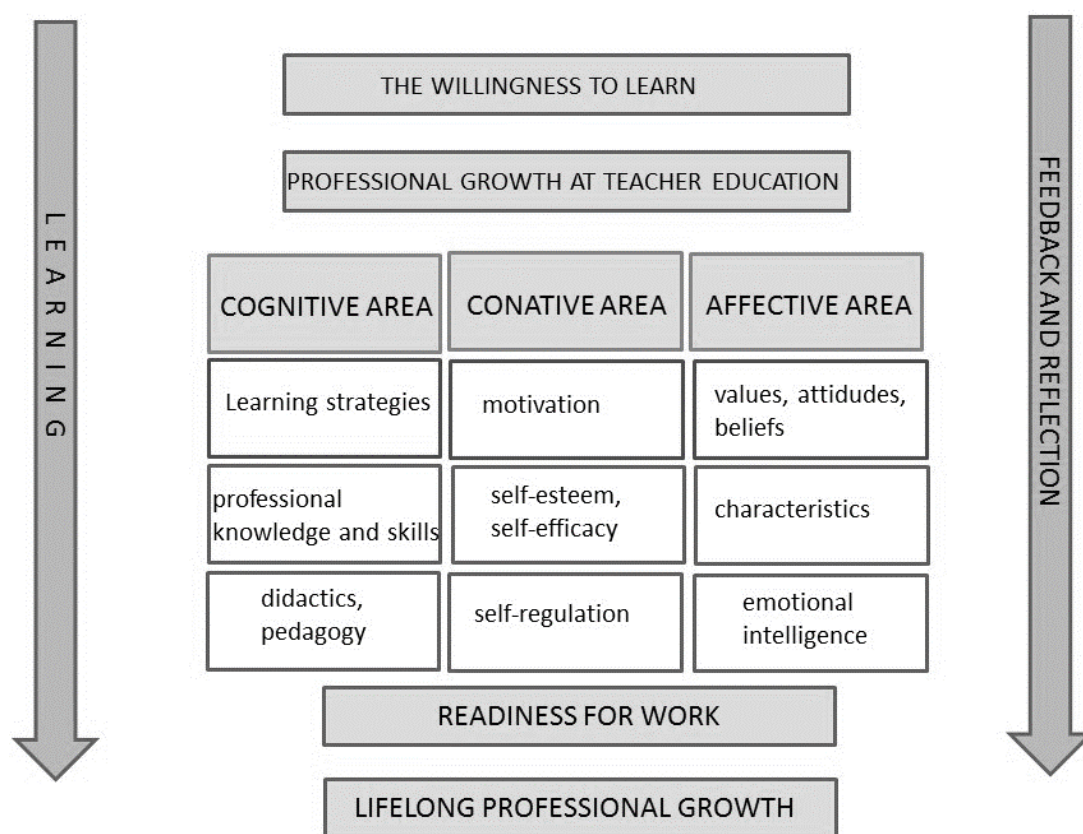


Figure 2. Parts of professional growth (Mäkinen, 2020, 28)

The process of professional growth is aided by reflection, i.e. in-depth reflection on one's own ways of working, and by feedback that can be obtained orally, in writing or indirectly. Feedback and reflection play an important role in, for example, creating and maintaining motivation. Professionalism develops through experience and one's own personality through reflection (Huhtinen-Hildén & Björk, 2013; Mäkinen, 2020). Reflection refers to a situation in which an individual takes his or her actions and personality under consideration, and is always associated with interaction. The objects of reflection are images of others and oneself. In self-reflection, on the other hand, the individual looks at his/her own internal states and experiences (Tiuraniemi, 2002; Moon, 2004; Boud, Keogh & Walker, 2005).

In professional growth, reflection plays an important role in relation to one's own values, attitudes and beliefs (Väisänen & Silkelä, 2000; Dogani, 2008; Huhtinen-Hildén & Björk, 2013). Jeskanen (2012) talks about recalling reflection, so that the pedagogical thinking should develop. It would also be important to reflect simultaneously with the activity (simultaneous reflection) and, on the other hand, to be proactive, forward-looking (Jeskanen 2012; Ivanova & Skara-Mincnea 2016). Without such a conscious and multi-directional reflection, teacher identity cannot develop. Jeskanen (2012) also wonders whether the development of teacher students' professional identity focuses more on technical skills than on the development of reflectivity. However, many studies have found that a personal and individual working theory can be constructed only by constantly studying one's own beliefs and practices (Väisänen & Silkelä, 2000; Dogani,

2008; Jeskanen, 2012; Huhtinen-Hildén & Björk, 2013; Körkkö, Kyrö-Ämmälä & Turunen, 2016).

The anticipated future in the model is represented by the concepts of readiness for working life and continuous learning. Working life readiness refers to the time a teacher graduates and enters working life. Professional growth continues and acquires new meanings in the communities in which the new teacher works. Continuous learning describes on-the-job learning as well as the training that maintains and complements the professional skills needed for a long career (Mäkinen, 2020, 28). The teacher has to understand the constant need to develop their work. Building a teacher identity is a lifelong project and process, to which education can only give direction, interest and initial impetus. Of course, it is not possible to produce ready-made teachers, but new perspectives open in different contexts of education (lectures, internships, discussions with different people, in one's own stories). Through these new connections of understanding, the professional and personal identity of the teacher is built (Väisänen & Silkelä, 2000; Fadjukoff, 2009; Mäkinen, 2020).

Previous Studies Related to the Topic

The development of a teacher's professional identity has been studied around the world, for example by Clarke and Hollingsworth (2002), Borko, Jacobs and Koellner (2010), Appova and Arbaugh, (2018). Poulou (2007), for his part, examined the professional growth of teacher students in his meta-research. The same question was also investigated by Körkkö, Kyrö-Ämmälä and Lakkala (2020) in their recent study, in which the student's lessons were videotaped in a supervised teaching practice and analysed together with the supervising teacher. The results showed that the students' reflection skills developed and their professional identity was strengthened. Eteläpelto and Vähäsantanen (2010) have also studied the development of professional identity, as have Koski-Heikkinen (2014) and Ruohotie and Koiranen (2000). Several studies have concluded that professional growth is a process which can be influenced, but that the individual has the greatest responsibility for their own development. Ruohotie and Koiranen (2010) have criticized the idea that research has focused too much on the skills required in the profession, although will and self-direction play a major role in development. This aspect should also be addressed during teacher training.

A considerable amount of research has been performed in recent years on student teachers' willingness to teach music. One important scholarly name for the 21st century is Hennessy (2000), who studied the perception of primary school teacher students in the UK about their own ability to teach skills (handicraft and physical education) and arts subjects. The results showed that music was felt to be the weakest of all.

According to Hennessy (2000), the sense of ability could be improved if the previous musical skills of teacher students were considered and supported in teaching practice. He also stressed the importance of peer support as well as the positive feedback from school pupils (Hennessy 2000). A recent study by Hennessey (2017), in turn, related to a degree programme offered at five British universities. The purpose of the programme was to strengthen students' musical skills and self-confidence to teach music in their future work. According to the study, community spirit, the training of one's own skills

and abundant internships in schools produced results. The support and guidance of music professionals was also considered advantageous (Hennessy 2017).

Henley (2017) also attaches particular importance to student teachers' previous knowledge of music and its mapping before learning something new. According to him, this is the only way to improve students' skills and self-confidence in teaching music.

Holden and Button (2006), in turn, examined the opinion of already employed teachers about their own ability to teach music. In the results, respondents rated music as the most difficult subject to teach out of the ten subjects listed. Many respondents believed that music should be taught only by someone who specializes in it. 2/5 of the respondents considered their own singing skills and knowledge of different aspects of music to be poor. The same respondents had little contact with music in their spare time, and those respondents who also played music outside working hours were more willing to teach music. To help with the situation, the researchers present team teaching, various ready-made teaching packages and the achievement of adequate musical skills already during the training (Holden & Button 2006, 36-37).

In Italy, Seddon and Biasutti (2009) designed an intervention that examined the effectiveness of a short intensive course to improve participants' musical skills. The surveyed teachers had learned to play blues by ear over the Internet. Such a course alone made respondents believe more in their own musical abilities. Baldwin and Beauchamp (2014) studied the integration of music into other disciplines in Scotland. Teachers who participated in the study found that teaching music integrated into another subject was easier and more enjoyable than teaching it as a separate subject (Hennessy 2017).

In Australia, Russel-Bowie (2009) investigated the willingness of pre-service teachers to teach music. They were asked to give their views on the status of music as a subject matter, on the resources provided, and on their own skills and tools. The biggest problem in all the countries under study was the teacher's own competence and the weak position of the subject (music) in school. The lack of planning time and weakness of tools (musical instruments, computers, iPads and music applications) were also widely reflected in the responses (Russel-Bowie, 2009). Russel-Bowie (2013) also studied the impact of a six-week intensive course in skills and arts subjects on teaching. The focus was on music for one week. The course included reading literature that was tested using a test on the Internet. Students were also given lecture-based instruction and video instruction in their own time. During the session, a learning diary was written and the subject's own musical skills were also practiced. The result was a more positive attitude among student teachers towards teaching music (Russel-Bowie 2013). Similar results were obtained in Italy in the 2015 summer course organized by Biasutti, Hennessy and de Vugt-Jansen.

The above-mentioned studies looked for ways to improve the students' generally poor willingness to teach music. Guided teaching practice for the development of the student's musical skills in the form of music courses given at the university and in particular the teaching methods were found to be good means. In her dissertation, Mäkinen (2020) obtained very similar results. Suomi (2019) has studied the willingness to teach music in Finland. Her study mapped the amounts of music teaching at five universities in Finland and asked student teachers for assessments of their own

music skills. The teacher training units in Rauma, Tampere, Helsinki, Jyväskylä and Joensuu were involved in the study. The units offered music studies in very different amounts, and Suomi (2019) as well as Begić, Begić & Škojo (2017) strongly criticized, for example, the low amount of instrument teaching. Students rated their own music teaching skills as moderate for grades 1-4, but only passable for grades 5-6. As many as 60% of respondents found, music teaching to be challenging or even impossible. In her dissertation, Vesioja (2006) explored the thoughts of in-service classroom teachers about their own music educator abilities and professional competence. The results showed that personal experience of deficient subject management skills weakened a teacher's inspiring teaching approach, differentiation skills and the use of diverse working practices. It also affected job satisfaction. On the other hand, even strong musical skills did not make a teacher experience himself/herself as a music educator if he/she was stressed or frustrated with the work of a classroom teacher (Hennessy 2017). Students would like to learn about piano teaching, school instrument playing, music in teaching practice, and music didactics during their studies. Shin (2019) studied Korean classroom teachers and their attitudes to music teaching. All the teachers interviewed considered their own modest music skills, lack of motivation of the pupils and the difficulty of teaching local folk music as an obstacle to teaching music.

According to Juvonen (2008, 2009, 2019), who had also conducted numerous studies on the musical self-esteem of student teachers and working teachers and on their relationship with music, the formation of a music-relationship as early as in childhood may be a key factor in how a student teacher perceives his/her own self-perception of teaching music (see also Pitts, 2009). If that relationship has become negative, for example, because of one's own school experiences, it is a challenging task for teacher education to turn the idea towards a positive relationship. Juvonen (2008, 2009) has also revealed indications that playing and singing tests during education have been perceived to be more detrimental than beneficial to one's own sense of self-ability in music. A small number of music lessons have also been criticized, especially in the area of instrument playing (Hennessy 2000, 2017).

Implementation of the Study

The aim of this study was to determine which studies the students perceive as having provided the necessary knowledge and skills to teach music in their future work. In addition, respondents were asked to make suggestions on how the current teaching could be improved. In previous studies (Mäkinen & Juvonen, 2019; Mäkinen, Eronen & Juvonen, 2020), authors investigated the effects of two different curricula on students' attitudes towards music teaching at the University of Eastern Finland. The studies were conducted partly as qualitative studies (narratives) and partly as quantitative studies. The first study was performed during the time of an earlier curriculum. At that time, music was taught in a very traditional way, i.e. instrument playing music pedagogy and one's own musical skills were studied in their own study modules, and all courses were given marks on the basis of examinations. The willingness to teach music was very low at that time: only 22% of the overall group (N = 82) were eager to teach music, 28% were hopeful but doubtful and as many as 45% were afraid. The study was repeated during the revised curriculum (N = 93). The studies were modified in such a way that all skills and arts subjects (physical exercise, music, visual arts, and crafts) were placed in the same study module and three courses were formed from them (5 credits, 8

credits and 8 credits). The first course aimed to find integrative contents in each subject, such as creativity, skill learning, assessment, cultural self-image and one's own relationship to skills and art subjects. The next two study periods (8+8 credits) then differentiated into their own contents for each skill and art subject, with an emphasis on subject-specific contents, pedagogy and the application of knowledge.

In the new measurement, the willingness to teach music had increased when looking at the entire material. Now 25% of respondents were eager to teach music in their future work and up to 49% of all respondents were hopeful. When we compared the willingness to teach music between those students who declared themselves as music enthusiasts and those who did not, there was a significant change. As many as 47% of music enthusiasts wanted to teach music, compared to only 28% in the previous survey. The proportion of fears in the entire material had also fallen sharply. In the new data, it was 24% (previously 45%). The number of enthusiasts among them was only 9%, compared to 45% previously. The reasons for the change were:

- The contents of different skills and art subjects support each other;
- Changing assessment away from skills assessment;
- Taking one's own responsibility for studies increased as the share of independent study increased;
- Diverse working methods (portfolios, essays, teamwork, lessons) courses increased reflection and a sense of self-efficacy (Mäkinen & Juvonen, 2017; Mäkinen, Eronen & Juvonen, 2020; Mäkinen, 2020).

Purpose and Question of the Study

This study examines the development of musical professional identity among prospective music teachers and the impact of learning experience on this. The research looks for ways in which students feel that their own attitudes towards music or its teaching have changed. According to Laine (2004), experience refers to a person's experiential relationship with his/her own reality, i.e. the world in which he/she lives. Experience arises in interaction with reality and embodies an individual's relationship to other people, culture and nature. The answers were analysed partly by calculating the amounts from different study options and partly by analysing the open answers. The research can therefore be considered as employing the mixed methods approach (Creswell, Plano Clark, Gutmann & Hanson 2003).

Research questions

- *Which study modules have an influence on the willingness to teach music?*
- *How should the studies in the teacher training study programme be developed?*

Research Ethics

The ethics of the research applies to all the research activities, from the data collection to the final report (Tuomi & Sarajärvi, 2018). When the material for the present study was collected, a cover letter was sent to the students by email informing them about the study, its authors and confidentiality. The response form was accessed via a link, which, if desired, could be left unopened and unanswered. Students' names were not collected,

only gender and age; gender may have also been omitted. The research material is stored in an encrypted cloud service. References and citations have been made appropriately and the studies of other researchers have been treated objectively (compare Vilkkä, 2007, 91). In addition, the theoretical foundations were prepared as broadly as possible so as not to overestimate the point of one researcher.

Research Organization and Results

Material for this study was collected in the spring of 2020 from students (prospective teachers) of the Joensuu campus of the University of Eastern Finland. By that point, all their music studies had ended. 86 responses (N = 86) were received from 192 potential respondents. The response rate was thus about 45%. The relatively weak response was partly due to a shift to distance learning due to the covid-19 pandemic. The students were overwhelmed with electronic material and virtual learning, so the questionnaire received little attention. The questionnaire initially contained open-ended questions to map the respondents' gender, age and hobbies. Respondents were also asked to select the statement that best described their own thoughts about teaching music before starting teacher training. 76% of the respondents were women, the rest were men. This distribution is typical of teacher education. 36% of the respondents reported having music as a hobby.

The statements were:

1. When I started my studies, I was not at all eager to teach music.
2. When I started my studies, I was neutral about teaching music.
3. When I started my studies, I eagerly awaited the opportunity to teach music.

The aim of the first question was to determine the student's preconception (compare Figure 1). As shown in Figure 3 one third of the respondents were not ready to teach music in their future job. However, more than half were neutral, so education would have a good chance of increasing students' sense of self-efficacy in music. It is also noteworthy that those who were neutral were in many cases non-musicians. The survey was continued with a list of different courses and study modules. From that list, respondents had to choose all those studies that they felt had increased their own skills and willingness to teach music. There was only one response saying that nothing had increased the respondent's willingness to teach music. As an explanation, this respondent wrote that he was non-musical, and that music actually irritated him. There are such students in teacher education on occasion. They have developed a solid perception (attitude) of their own weak musical skills and a sense that they are non-musical.

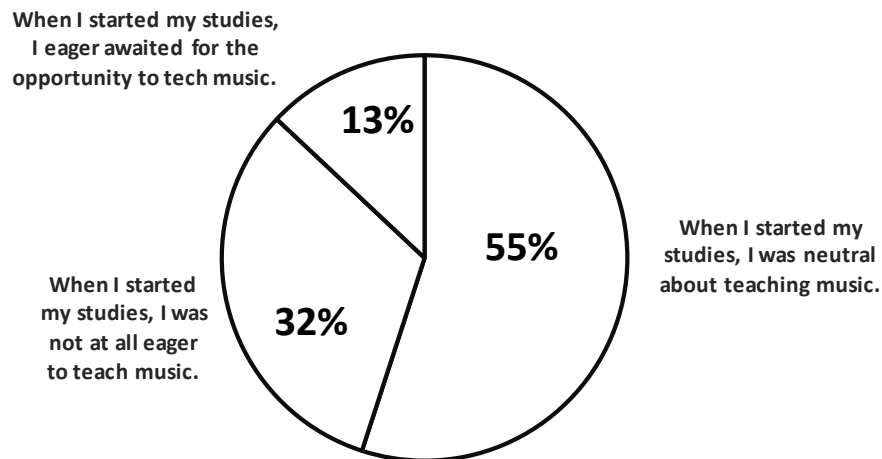


Figure 3. Student teachers' preconceptions about their willingness to teach music

A change in attitude would require a great deal of new, positive musical experiences and personal success in the area of music in order to turn such an attitude into a positive one (Puohiniemi, 2002; Juvonen, 2008; Hennessy, 2017; Mäkinen, 2020). An open-ended question was answered by one student as follows (M=man, W=woman):

"A student should strive to get rid of his or her own uncertainty about teaching music only because he or she is not musical in their own opinion. In piano exercises I have also noticed that practice makes a master, and one does not need to know everything beforehand. In teacher education, I think this should be emphasized to student teachers, as uncertainty and fear of failure sometimes stand in the way of learning." W#18

This respondent is at the heart of the assessment. An attempt has been made to respond to this point of view in the first study module of the new curriculum, in which the student's own relationship with skills and art subjects is considered. There are also various reflective tasks, for example in teaching practice, trying to make student's own attitudes visible (UEF-Curriculum 2014-2017). The following quote describes the achievement of this goal:

"In small groups especially Study 2 (8 credits), and in the portfolio, Study 1 (5 credits), I had the opportunity to unpack my own bad experiences with music lessons that were behind my negative attitude." W#52

Other respondents chose many items from the list. The following table summarizes the study subjects and the number of respondents. There was no desire to calculate percentages because respondents could choose from several options. Some respondents selected almost all the studies, some selected only a few courses, and the number indicates the popularity of the study module or study-related entity better.

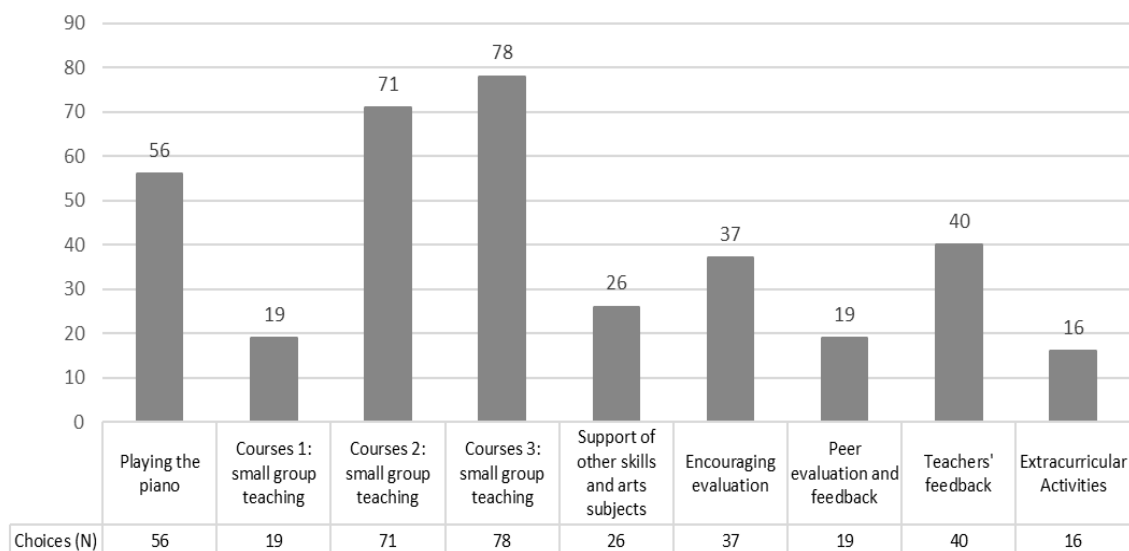


Figure 4. The study modules and issues, which had a positive impact on student teachers' attitudes

76 students responded to the open-ended questions, i.e. 10 respondents left the box blank or wrote that they had nothing to add. Table 1 shows nine learning-related entities, all of which received selections of 16 or more. The review clearly distinguishes between the integrated study modules of the new curriculum (Courses 1 and 2) and specifically their small group teaching. In these courses, instruction divided into subject matter and objectives, as well as the study of pedagogy. In both sessions, students can also apply their skills themselves and plan small teaching sessions (UEF-Curriculum 2014-2017).

The following answers represent a very large number of open answers. The respondents were satisfied with the teaching, praised its versatility, and considered areas for development.

"I think the current teaching has already been very practical and I hope you will find it that way too. The courses have also received a lot of material, such as teaching methods, activities, exercises, and other ideas that students can take with them into working life. Continue in this style and give as many ready-made ideas and materials as possible to the students, so that they can use them or customize them to look like their own." M#41

"Add to that the practice itself of making concrete school applications. We did a lot of them in class, but only so that the teacher had already edited the school application and we just played." W#19

"Teaching music theory from the beginning. At least the basic notes with their promotions and other expressions would be good to teach, because they are not familiar to many." M#32

"Additional materials for students with special needs in music lessons. Student assessment could also be addressed more." W#60

There are only four hours of small group teaching in Course 1, so its importance becomes very high. Perhaps by that time the students had a lot of theoretical studies and therefore special attention was paid to studying in small groups. Indeed, a few students wrote:

"I think small groups had a big impact on my own enthusiasm for teaching music, and through them I also learned the most and learned to perceive difficult music content for myself. I would continue to emphasize the importance of small groups and the community approach in guiding small groups." W#79

"Maintain practicality in small group lessons, because making music during the lessons has been more fun and thus more motivating and effective for learning than, for example, pounding theoretical knowledge." W#68

There is a total of 20 hours of instrument playing lessons in the new curriculum. The student chooses piano, guitar or school instruments. Learning to play the piano is the most frequently suggested, so this study also highlights its choice (UEF-Curriculum 2014-2017). If we add up all the options available for playing studies (piano, guitar, and school instruments), we get a figure of 68 (compare Tables 1 and 2). This perfectly reflects the students' idea that in addition to pedagogical studies, it is also important to develop one's own musical skills and especially accompaniment skills. There have been many suggestions for the development of instrument playing learning, which often dealt with the assessment, scope or teaching methods of various investigations of instrument playing. At the time of the survey, instrument learning was assessed by numbers, and piano students considered this assessment to be unfair. The following year, the curriculum was changed and numerical grading was omitted from playing studies. Similarly, the workload of playing studies was criticized and, on the other hand, more individual teaching of guitar was desired. At that time, the guitar was studied in groups of 20 students, whereas the piano was studied in groups of only three - four students (UEF-Curriculum 2014-2017).

"Even more teaching sessions, teaching the chosen instrument, such as the piano, for even longer." W# 85

"Equal Evaluation of Guitar, Piano and School Instruments." W#30

"I was in piano teaching myself, but I hear those on the guitar side would have liked more personal teaching, in the same style as there was in piano teaching." M#36

"There are few playing hours per se, but the number of hours of independent work is certainly at least double compared to visual arts or exercise." W#48

"Piano, guitar and school instruments are on an equal footing. Now the piano requires a lot more dedication." W#22

Although the evaluation of playing studies received negative feedback and suggestions for improvement, evaluation emerged as one of the motivating factors in this study (40 choices). According to the curriculum, the various study courses are evaluated in different ways, and the aim is to move from evaluation of skills to evaluation of pedagogical competence and reflection skills. In course 1 (5 credits), the review was either passed or rejected and was based on an extensive portfolio. Course 2 (8 credits)

ended with an electronic multiple-choice exam, in which the material could be presented and could be performed in a group, so the proficiency of an individual student was not measured in any subject (UEF-Curriculum 2014-2017). Such an assessment method raises the student's motivation, because although the achievement of a skill is in itself rewarding, it did not affect the student's grade or credit score (Ryan & Deci, 2004; Mäkinen, 2020). Assessment is not based on individual skills and the desired level of competence, but is flexible, individual-oriented and part of the learning process (Atjonen, 2007).

Teacher feedback received 40 mentions and peer evaluation, and feedback received 19 mentions. From the point of view of the teacher educator, this result is particularly encouraging. The fact that assessment does not need to judge anyone's ability to play or sing, for example, but can focus on assessing a person's teaching and the way they guide students, makes assessment easier to encourage. Of course, it must be remembered that the object of assessment must not be the student's temperament or character traits, but assessments must be made in the direction of the goals (compare Atjonen, 2007). Atjonen (2007) aptly stated: *"Evaluation is not the end of the learned statement, after which the roadmap of new tasks begins. Thinking out loud and listening to the views of others can shed light on new aspects of one's own activities and development needs"* (p. 230). The idea works in university studies, especially in peer review, although it could also be used in course evaluation. However, assessment discussions are often not possible due to the large number of students. In teaching practice, on the other hand, students often have access to assessment discussions.

Support for other skills and arts subjects (26 choices) and extracurricular activities (16 choices) were offered of 42 options and we believe they are partly related because they are not necessarily directly related to music or university music education. In her dissertation, Mäkinen (2020) studied the professional growth of teacher students from the perspective of music teaching, and in that study one of the factors strengthening the willingness to teach was the support of other skills and arts subjects. In this study, there were not quite as many choices as might have been expected, but the result was partly influenced by the division of courses in the questionnaire. Course 1 was optional, although it was based on the common goals and contents of the skills and arts subjects. There were 6 choices (lectures) for this course. Thus, there would be 32 choices. In both cases, there were about a third of the choices, i.e. the support of different subjects can be considered as significant. Extracurricular activities meant, for example, hobbies that were considered to have helped willingness to teach music.

Figure 5 summarizes the rest of the courses that could be selected. Finally, the other section is presented separately. It can be seen from the table that the lecture teaching has not been considered particularly effective. Furthermore, general education studies receive only 11 choices. On the other hand, it should be noted that people have different ways of learning and developing, and, for example, their own reflection skills, so these choices are also valuable from an individual perspective. The reason why teaching internships have received few choices is that only a small percentage of students get to teach music in a guided teaching internship. The amount is usually only 5% of the age group. From this one could conclude that all trainees felt that the internship had promoted their courage to teach music (compare Mäkinen & Juvonen, 2017).

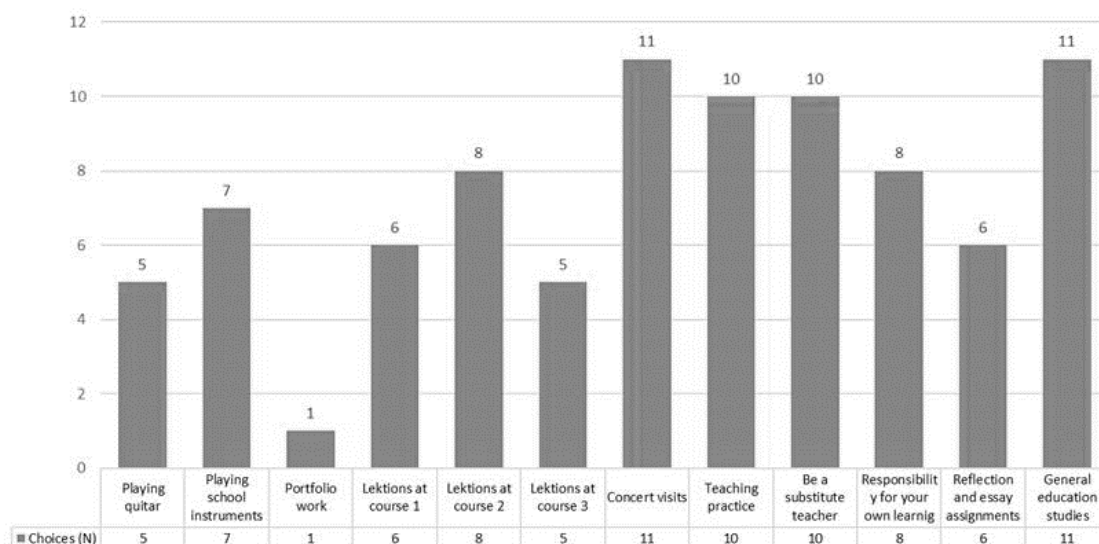


Figure 5. Less selected issues and study modules

The concert assignment could just as well be related to the extracurricular activities (16 selections) presented in the previous table. There were two concert assignments that year, one live concert and the other web-based. One was a concert of Western art music and the other of ethnic music. Both concerts were made into a short, reflective essay from a pedagogical point of view (UEF-Curriculum 2014-2017). Probably the voters have experienced the concerts as a variation and they have also produced a good mood for rather difficult studies, and therefore the point is ticked. Familiarity with a foreign genre may also have contributed to the choice.

Seven students had replies to the choice "Other". Two of them had mentioned the use of ICT in teaching, one had previous music studies in early childhood education, and one had played together in small groups. One student had received help from a list categorizing the subject areas and contents of the primary school curriculum, and another praised the fact that in course 1, his own relationship to skills and arts was made visible. This, he said, was of great significance. By contrast, another student wrote the following sentence:

"I don't necessarily have to be good at playing an instrument, for example, to be a good music teacher. A happy mind compensates for a missing intellect." M#65

That sentence nicely crystallized the whole idea of curriculum reform. The goals of the new curriculum do not focus on the trainee teachers' own musical skills, but specifically on the role of the music educator in guiding the student group, using diverse working methods and creating positive experiences for students in making music and doing things together and in the individual's well-being (UEF-Curriculum 2014-2017; Mäkinen, 2020).

Discussion

The aim of the present study was to identify which studies or study modules shaped a positive attitude of classroom students towards music teaching. Previous research had

found that integrative teaching of skills and arts, such as in the current programme, increased the enthusiasm of teacher students to teach music and their self-confidence in teaching music. The aim of this study was to investigate in more detail the study modules and study courses that were perceived to improve one's own ability. Music studies and, on the other hand, small group studies, which focused partly on developing one's own school instrument skills and partly on pedagogy and didactics, received the most choices. Encouraging feedback from teachers and fellow students as well was highlighted in the responses. Surprisingly, many choices were also made in extracurricular activities ($n = 16$), which of course cannot be influenced by education. There was a total of 21 items to choose from, and in addition the "Other" item. What was noteworthy was that choices were made at all points, which is a good reminder to the organizers of education: students are individuals who all have their own way of embracing new ideas and situations. Studies must be grouped in such a way that it is possible to use all kinds of learning styles, so that learning is effective for different learners (compare Kauppila, 2003). The students' ideas for developing education were sensible and justified, although not all of them were feasible, for example, due to financial issues.

On a general level, neutralizing students' fears and experiences of incompetence are important goals in any subject, but perhaps even more so in skills and arts such as music, where personal skills are easily discernible. Unravelling one's own past bad experiences is certainly therapeutic and should be practised in small groups. Feedback also highlights the relevance of small group learning. The general pragmatism of music studies also plays an important role in shaping students' attitudes.

Theoretical knowledge, and especially lecture teaching, has traditionally been considered burdensome and even unnecessary in classroom teacher education, but no doubt the scientific and theoretical approach also has its own important place in music education studies, even though philosophical and theoretical study modules are challenging when the studies are not yet finished.

It may not be possible to increase the number of teaching sessions held in small groups in the context of the current number of curriculum hours, as they take a lot of time from the already tight number of hours when implemented by each student. Likewise, more hours are always desired for teaching piano or other instruments, but when resources are limited, there is no possibility to add them. It would only be possible to increase online teaching, but then the need for one's own instrument would become a problem. Otherwise, independent training is not possible. While studying guitar it would be easier and cheaper to get your own instrument, but many students still feel that studying the piano is better for them. Any feedback also considers that the amount of work required to learn the tools is much higher than that required for the visual arts or exercises. This is, of course, partly due to the different talent structures of different people, but also partly to the experience, since every student entering teacher education has exercised a lot throughout his or her lifetime, regardless of whether physical activity has been a real hobby. The same is true to some extent for the visual arts. Playing instruments, on the other hand, is a less common hobby. Apparently, the criticism directed at one's own work mostly concerns students who have not played music in any form before their studies.

Music studies also offer students a wide variety of study materials that can be directly used in the transition to working life, which has also proven to be helpful. However, the idea is that students will learn to create their own study materials themselves, and not everything can be handed over to them on a tray. This also applies to school instrument adaptations, which students hoped to teach even more. This wish should be implemented as much as possible. It was also hoped to increase the teaching of music theory.

Apparently, the previous music education provided by schools has not created sufficient knowledge of music theory. Its study is connected to the curriculum of small groups, but apparently the subject divided into small parts does not help to comprehend the whole that the future teacher would find necessary (UEF-Curriculum 2014-2017). In Australia, Russel-Bowie (2010) also came to a similar conclusion. If poor knowledge and skills about music have been acquired in childhood and adolescence, teacher education has the difficult task of training enthusiastic teachers in a short period of time (Russel-Bowie, 2010).

The encountering of pupils with special needs also appears several times in the student feedback. There are a lot of special needs in today's schools, so there is clearly a need to direct teaching in that direction as well. This wish has come to the fore in the study satisfaction survey conducted every spring, and based on those surveys; the contents of teaching have been modified in each skill and arts subject. Apparently, however, these modifications are still insufficient for students. General special education studies Class teacher students currently have a five-credit online course. Overall, the development of music education in classroom teacher studies has been well received from the point of view of the collected feedback, and the changes already made to the curriculum have taken it in the right direction. From the point of view of the development of teacher identity, it is easy to see that courses focusing on the personal practice of small groups and trying things out on a practical level are of the greatest importance. The situation is probably the same for other skills and arts subjects: studies directly related to practice achieve a greater contact area for modifying teacher identity than theoretical subjects presented by reading. However, philosophical-scientific studies also have an important role to play in forming a kind of theory of the use of teaching, which supports the whole teaching work and develops and adapts as teaching continues to develop even after the completion of studies.

Apparently, practical advice, experiments and models, which became most important during the study period, appear to be the best gift, but pedagogical and philosophical as well as educational starting points and theories are becoming more and more important in later teaching and in the formation of teacher identity.

In order to be able to teach music to new generations in the future, it is important how one's own music teacher is perceived. In the Bergen and Demorest survey, 70% of respondents considered the model and encouragement given by their own school-time teacher to be the main or second most important reason, as well as the love of music evoked by teaching, to choose the profession of music teacher (Bergee & Demorest, 2003). It is therefore significant that classroom teacher education is perceived to teach sufficient knowledge and skills about the subject of music to be able to teach it and to be taught in future work.

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OPPRESSIVE EXPERIENCES IN MUSICAL INSTRUMENT LEARNING

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Abstract

This study focuses on student teachers' experiences of instrument teaching and learning from a psychoanalytical perspective. The data were collected from Finnish student teachers from the University of Jyväskylä (N=132) in 2011. They first read a short part from a book written by Juha Itkonen and were then asked to write a narrative about their own thoughts and experiences of instrument teaching and learning. The data were analysed using data-based content analysis, leaning on psychoanalytic theory.

The results show that although changes have been made in Finnish music schools' curricula, there are still many hidden elements in instrument teaching. This casts a dark shadow over the instrument students' learning. Teachers often use 'black education' methods by not giving the students any control over the programme or how to perform. Performance-centred thinking includes elements that destroy the joy, creativity and enjoyment of instrument training and practice.

Keywords: *Instrument teaching, Psychoanalytical point of view, Traumatic experiences*

Background

This article focuses on why many talented music students stop performing or stop playing an instrument after studying it for years (Garam, 2002). Why do so many music students learn virtually nothing from their studies? Tuovila (2003) explored the experiences of new music school pupils and their parents for four years and, following the longitudinal study, almost one half of the children found their studies exasperating. Also, the teachers' evaluations of the children's musical talent and advancement systematically changed for the worse as their studies progressed. What is wrong with the Finnish music school culture?

In many cases, music school and conservatory studies fail and destroy the student's interest and love of music. The reasons for this can be explored from a societal point of view and an institutional level focusing on the requirements of the institute and its curriculum, as well as at a grassroots level in terms of what happens between the teacher and the student. There has been some research into negative music

relationships and music restrictions (Kurkela, 1994; see Syrjäkoski, 2004; Juvonen, 2007, 2008b).

Risk of Art Education Becoming Poorer

The ever-continuing requirements for the acceleration of production in fields of education is one of the most important elements of being a human being, particularly those subjects, which do not produce immediate economic profit. They are pressurised and cut down and their living conditions are made almost impossible: they would rather be closed totally (Toiskallio, 2016a, 50). Toiskallio saw this phenomenon as part of Nussbaum's (2011) worldwide crisis crumbling democracy, where the way of speaking leads to a world of certain significances that aim to confirm the viability of current political and economic systems (Zizek, 2012). This is also associated with the change that has occurred over the course of time in the primary nature of praxis and action as the accomplishment has turned upside down (Arendt 1998). A human being is a unique subject, not a faceless performer who has been conceptualised and defined in a certain way (Levinas, 2003). Nussbaum (2011) is only production, a phenomenon which can be seen in the sociological development of the entire world. Lehtonen (2004, 9) critically assessed the Finnish music education system, calling it *power education*, in which the music school system has been recruiting as many children as possible at an early stage. Many pupils are encouraged to choose a career as professional musicians. The norms, demonstrations and examinations stated above create an exclusion orientation, which soon seizes the system and the selection of the most suitable and competent becomes more efficient with the progress. All the time the group gets smaller, eliminating the least skilled individuals at each stage (Lehtonen, 2004, 9). The Finnish music education system has produced a large group of internationally recognised musicians, singers, conductors, and composers, but has also left behind many variously traumatised and marginalised individuals.

The one-sidedness of the vocabulary used when speaking about education was noted more than two decades ago and a technological language started being used (Carr, 1989). Also, educational professionals have started using this economic-technological language (McMurthy, 1991) replacing *academies* with *accountable resource units* and students being referred to as *customers*. In place of profundity, originality and a high moral, ethical and skill level, came 'programme entirety' and the 'selling' of ideas, aimed at reaching the greatest number of applicants (read: customers). Many actors in the lead, administration and planning of universities and polytechnics have acquired this economic-technological discussion as the only proper way of speaking. Thus, teachers, professors and other actors who have been able to retain their imagination and visualisation feel that the educational field is an oppressive and restrictive working environment that forces people to adopt certain routines.

Imagination is seen as a well of our moral and ethical ideals, i.e., the basis of our ability to function (Rorty, 2008, 8-9). The economic-technological vocabulary contains concepts such as creativity, know-how and continuing learning, but it fundamentally refers to a unidimensional human being, which Marcuse (1964) referred to as early as the 1960s: the distortion of the human being and the ideal of a good life. Rorty (2008) noted that the greatest threat to the goodness of life is people who aim to achieve an autocratic position and the subjugation of others, imagining that they own the "only

truth". This kind of situation may take place between an instrument teacher and their pupil: certain teachers firmly believe that only they possess the right kind of know-how about teaching and learning a musical instrument, the kind of programme that must be chosen and how it should be used and interpreted. The student is not heard at all. Lehtonen (2004) speaks about a similar phenomenon 'epistemic sense of superiority', certainty of the superiority of one's own know-how. Scientific research does not support any of their ideas (Toiskallio, 1993, 2016b) but rather strives to understand that the same phenomena can be learned, understood, and explored in many different ways.

The Pressure on Music Schools and Academies to Change

Changes in the ways of action of music academies and music schools have been demanded over the last two decades. Many newspaper articles have criticised the Finnish music education system. The network of music education can be seen as a production machine that produces top-flight performers, but totally forgets the music hobbyists (Lehtonen, 2004). Music schools and conservatoires only value correctness, traumatising many of their students and branding them untalented. Changes to degree systems and curricula have been demanded and have also been made. There is a will to develop student-based and creativity-supporting ways of action. Nevertheless, it is very easy for a teacher to get into a rut of being only an indicator of mistakes. All it takes is a bad day to transform a pedagogue immersed in constructivism into the worst kind of anti-quoted maestro whose exterior has been polished with constructivism. At that time, the human being inside the student is forgotten as well as why music is taught and what targets it serves. Young teachers teach much the same way they have been taught. There is a tradition going back hundreds of years behind the pedagogic mechanism. Releasing from these teaching models towards wider student-based teaching and teacher's personality can only be achieved by becoming conscious of problems, which takes a long time. Instrument teaching has been considerably explored but not from the point of view of this research (see Baron & Henry, 2010; Davidson, 2010; Faulkner et al., 2010; Jäncke, 2011; Mol et al., 2005; Papageorgi et al., 2010; Shuter-Dyson, 2006).

Psychodynamic Starting points

According to Susanne K. Langer (1967/1982), music sounds like 'the life feels' because the profound power hidden in its non-narrative structures are true to the world of emotions in such a way that cannot be expressed in language. Kurkela (1994) has written about the psychodynamic structures of mind and powers in the study of music, teaching and performing, offering a depth-psychological context. Another important starting point is Lehtonen's (1986, 2007, 2010) view about music and psychoanalysis. This approach also comes from depth psychology. The dissertation of Lång (Psychoanalysis and its application in music research 2004) broadly addresses the same themes. Professor Hägglund (1984) wrote about the psychoanalytic concept of creativity in his article "*Creativity in light of psychoanalysis*". Also, in research on theatre and drama education, it is easy to find ideas about musical self-expression.

Psychoanalysis has been popular in research on arts and creativity. The presence of the subconscious dimension is obvious in the arts and psychoanalysis precisely explores

this part of a human being's psyche. Music, like all art, is essentially a mystery (Lång, 2004). Thus, psychoanalysis offers many opportunities for its exploration. Although we take music as a self-evident truth, we cannot thoroughly explain what it is and why people enjoy it as a hobby.

It would be easy to describe music as a sound organised by human beings, but a musical experience does not require a voice. Beethoven composed many of his compositions when he was deaf and all of us sometimes hear music playing inside our head (Lehtonen, 2004). Music making is not connected with the survival of the human species so evolutionary biology cannot be used as an explanation (Lång, 2004). Music has an enigmatic nature, and it touches something in our subconscious. The significance of music occurs in the subconscious mind. Music strives to explain the unexplainable. If we only explore what happens in the brain while playing music, something essential remains hidden (Langer, 1951, 1953, 1967).

A perspective on Creativity

Exploring of creativity could be likened to showing a beam of light to darkness. We do not get a complete picture of it. In creativity research, it is possible to focus on the creative product, artefact (behaviouristic approach) or highlight the creative processes (psychoanalytic, humanist psychologists). We can concentrate on everyday creativity, problem solving or creativity in the arts. Creativity is often seen in narrow terms and the conception strongly depends on one's own knowledge, attitudes and needs (Heikkilä, 1982, 1985, 1995). Some people focus on rationality (cognitive psychology) and others on emotional experiences (psychoanalytical) or flow experiences (Csikszentmihalyi, 1990, 1997, 2005).

Rational Creativity and Emotional Creativity

Clark (1979) presented four elements from which a synthesis forms creativity. These elements comprise thinking, emotions, sensations, and intuition. According to Clark's model, creativity can be separated as rational thinking and as a function of emotions (Heikkilä, 1985). Rational creativity is conscious problem solving while emotional creativity is activity that stems from the deeper subconscious mind. According to the perspective of emotion-based creativity, creativity is connected to emotional well-being, self-esteem, and the sense of safety of the individual. Emotional creativity is 'outside rational trying' (Heikkilä, 1985) and it cannot be stimulated by conscious efforts. In a creative process, both rational and emotional elements are always present. Music has a direct connection to emotional life and that is why research on musical creativity underlines the significance of the emotions. It is possible to approach the experience of making and experiencing music through the psychoanalytic concept of creativity, the mystery of music.

Psychoanalysis and Psychodynamics behind Creativity

From a psychoanalytic point of view, the origins of creativity are in early childhood, the early interaction between mother and child, and playing. According to psychoanalysis, music is a manifestation of the psyche's inner processes that can be perceived with the

senses (Lång, 2004; Lehtonen, 2007). A human being transforms inner experiences that cannot be articulated by words into musical communication. Psychoanalysis divides the psychic structure into three parts: id, ego, and super-ego. The id contains human instincts and subconscious issues; ego is a system of psychic processes that includes defence mechanisms, self-regulation and conscious thinking; super-ego is the voice of conscience that sets demands. The conscious activities connected to music belong to the ego's circle in which mastering, learning and skills play a key role. Music is also directly connected to the subconscious, in the area of the id. Music is also related to the super-ego that puts forward moral demands and doing things right. The super-ego includes norms, rules and ideals that have been adapted through identification from important people, parents, teachers, and peers. Society at large and culture also offer different norms to identity. The super-ego explains socialisation in a psychodynamic way. The super-ego is particularly present in music critique and music education (Rechardt, 1973, 1978; Lehtonen, 2007, 2010).

Psychoanalysis explores the opportunities for the contents of the subconscious mind to integrate with reality. It tries to make a human being conscious of the subconscious factors impacting the actions. These subconscious factors cause anxiety and activate defence mechanisms as they strive for consciousness. The defence mechanisms act as selective filters, reducing pressure on the ego by misrepresenting the reality. An individual who struggles in the middle of problems directs attention to issues that are favourable from own point of view and does not see their own fault in the problem. The defence mechanisms support our balance but are also the opposite of creativity because the energy which they require is used for repelling new ideas instead of examining them. Through becoming conscious of the contents of the subconscious mind, the individual takes it safely under the rule of ego. It means greater freedom of choice, flexibility of self-image, greater self-esteem, and sense of control (Kurkela, 1994; Lång, 2004; Lehtonen, 2007).

Psychoanalysis explores the process and creativity as an inner event of the psyche. This does not mean that creativity would occur without output. Creative processes always produce something: insight, experience, or concrete product. Creativity cannot be only measured, defined, or evaluated through the product. The starting point is the individual's internal emotional and thinking process, which gradually crystallises into a structure or product (Hägglund, 1984). Creativity is a novel combination of ideas, thoughts and emotional images and the ability to join ostensibly contradictory elements. The created combination is always more than the sum of the partial elements.

Hägglund (1984) divided creativity into three levels: the deepest level stems from the subconscious touching essential pre-vocabulary experiences; sort of basic truths of being. This is what happens when music moves something unrecognised inside our minds. A more superficial level of creativity is based on conscious and subconscious memories and experiences from childhood making them live again. It does not touch subconscious issues such as deep creativity. The most superficial level of creativity is a kind of cleverness or smartness; rational, conscious, problem solving. In a creative process, all levels are present.

In a creative product, there is a significant personal contribution of narcissistic energy invested in it. When an individual sings or plays a musical instrument, different parts of their personality are revealed and can be observed by the listener. The analytical self

can be seen in understanding the musical structures, logic and skilfulness; the motoric self can be seen in a technical ability. The emotional self is shown by emotional loading, and the way of performing shows different personality traits. Performance describes what the performer is like (Kurkela, 1994). The creative process offers the impulses from the subconscious an opportunity to enter the consciousness in the form of artistic expression, and the ego does not need to protect itself (Lehtonen, 2007).

What is Hidden behind Learning?

According to psychodynamics, the human mind is a playing field for the instincts. There are two basic instincts. Freud called them *Eros* and *Thanatos*. Kurkela (1994) called them *aggression* and *attention*. *Eros* means an endless drive to go forward, search and widen the territory while *Thanatos* and *attention* means an effort to achieve peace, safety, and stability (Lehtonen, 2007). Both powers struggle within us. This two-poled dynamic works as a basic setting in the world of the mind. Jung refers to the same powers using the concepts of *animus* and *anima*, highlighting their symbolic femininity and masculinity (Kurkela, 1994).

In this research, we use the concepts of aggression and attention. Aggression describes the fury of activity within us. It is not a model of behaviour but rather the motor behind it. The power of aggression is a primitive power of life: an infant first wants to eat everything that can be reached. Then it strives to move, stand on two feet and take possession of the world; first physically and then cognitively, through gaining know-how. The power of aggression is channelled into all areas of life and it shows as expansivity, meaning an effort to widen opportunities. Under the control of strong ego, it drives us into the pursuit of enjoyment and activities that produce a symbolic sense of success, as well as activities such as learning, working and hobbies (Kurkela, 1994).

The force of attention drives us to a mood of protection and shelter willing to store and hide, develop and mature in peace; to nurture and cherish. Attention erupts as hiding in oneself. In its most primitive form, it refers to hiding in the mother's womb and later on her lap. Psychic and physic self-protection last through the whole of life as a key aim of human life. Emotions of continuity and permanence are key factors in well-being since early childhood (Kurkela, 1994). Aggression and attention do not work without each other in a healthy mind. They modify each other. Aggression without the restraining effect of attention could show as a primitive greediness, killing, binge eating or obsessional sexuality. Attention without the driving force of aggression would erupt as an exaggeration of safety, withdrawal, or demand of invariance, in its most pathological form, as total spiritual and functional numbness (Kurkela, 1994).

These two opposite poles are mirrored in music making. Learning musical skills is a demonstration of power and control. It penetrates new areas and conquers them, creating satisfaction and enjoyment. In music making, a lot of protectiveness, controlling, waiting and maturing is waiting to emerge. It has a percussive force, belligerence and impressiveness, but also tenderness, turning inwards, compassion and warmth. Music can be a conquest, a haven, or it can penetrate new areas of one's own skills and expression. As the skills develop, it creates strong sense of succeeding and finding new issues. However, it may help as an auditory experience of safety and

continuity in preventing the fundamental fears that stem from silence and loneliness (Kurkela, 1994).

Creative Attitude or Performance Salience

In music making, two parallel realities are present. The senses include mastering of the instrument, musical style requirements and music conceptualisation. The emotions include the personal-emotional significance of music. Often, when teaching singing or playing a musical instrument, the focus is on the technic-instrumental sense world assuming that emotional expression and an emphasis on being immersed will come automatically. But how can a teacher require immersion, intuition or spontaneity if the teaching has only highlighted control, analyticity and being conscious of issues. These musical realities are parallel, and creativity lives inside both of them. They overlap each other and the creative attitude works as a transmitter. Widening of the borders of expression, musical interaction and becoming immersed in music, so-called stage radiation, are derived from creative starting points that mirror a creative attitude. In a teacher's work, these show as an indistinguishable undertone, a kind of basic setting which is more about how the teacher exists than what they do.

Technical demands and disciplined progress in controlling a musical instrument are not contradictory to the cultivation of a creative attitude. If the teaching conveys a creative attitude, the student sets the targets of studying. The claim that students will not progress if the lessons are fun reflects the Protestant work ethic and the power thinking of the music education system (Lehtonen, 2004). Blood, sweat and tears are not needed in music education because a child learns and develops by playing. The creative attitude also lives among adults in a reality which is reminiscent of playing or game reality. Creativity, the desire for self-expression, is a special human skill, and it has made us what we are. Creativity stems from the human mind's inner dynamics and helps us gain an insight into what music really can be – self-fulfilment, visiting other realities, conquering new worlds, or finding a haven in the wicked world.

Accomplishment is the opposite of creativity. It is lacking the freedom, being restricted from new ways of acting, the inability to renounce, stop something. There, the individual's power of life does not express itself and the content lacks authenticity and touch ability (Kurkela, 1994). Still, outwardly accomplishing performance may seem effective. Sometimes competing, a need to compensate for something and convulsive work generate more than a creative attitude. Nevertheless, the result of creative attitude-based work is more tangible in content (Czikszentmihalyi, 1990, 1997; Kurkela, 1994; Uusikylä, 2002).

The current learning conception in music instrumental pedagogy leans on a constructivist educational science approach. The learner is seen as an active information processor who mirrors new knowledge to already existing knowledge and applies it to practice, thereby building a jigsaw puzzle that is completed piece by piece. Learning is not about receiving information but understanding issues, changing ways of thinking, and seeing matters in a new light. Ultimately learning means changing the human being (Tynjälä, 1999). An important element is the student's intrinsic motivation, which makes learning a self-serving activity in which the ambition grows

through playing where the hunger grows while eating. Aims and targets are set by the student in the presence of intrinsic motivation is there (Tynjälä, 1999).

Symmetrical and Asymmetrical Thinking

Lehtonen (2004) describes the concept of asymmetry: asymmetry schematises and slices reality. It strives to classify, generalise, separate emotion, experience, thinking, imagination and intelligence from each other (Lehtonen, 2004). Symmetrical logic is the structure of subconscious mind thinking. It evaluates identity and symmetry. It includes identity, infinity and unity. According to Lehtonen (2004), the most fundamental of all the music world's negative phenomena is the contradiction in asymmetrical and symmetrical logic in music and overall contemplation. Intelligence has destroyed emotions and words have destroyed experiences. *"Music education has been verbally and logically analysed which is basically unmusical. It has merely become a collection of theories, techniques and survival strategies expressing music's surface structures"* (Lehtonen, 2004, 29). In addition to musical instrument teaching, the phenomenon can be clearly seen in music theory teaching at music academies. The myths of Western art music are also connected to asymmetrical thinking. Lehtonen writes (2004): *"Asymmetrical thinking separates the talented and the untalented, virtuosity and mediocrity, perfection and imperfection, total expertise and lack of expert knowledge, professionalism and amateurism. The desire to make definitions is endless. The conceptions about talent are holy unchallenged lore part of a primeval story"* (p. 45).

Musical talent tests in music schools only measure the perceptive skills of music's surface structure, which is only one aspect of musicality. The mythic reality of music education does not acknowledge the differences in children's developmental rhythm in which there could be major differences between individuals (Lehtonen, 2004). The dissertation by Tuovila (2003) confirms this claim as it shows that the results of musicality tests had no significant connection to success in studying music.

The competitive nature of musical instrument teaching is black education because it renews the existing cultural pain of pedagogue through socialising the student in it. The narcissistic tension is primarily directed at comparing students with each other because there is no strength or power other than in a relationship with others. According to Gothoni (1998), all that is needed to break an individual's self-confidence is a single word from an important person at the wrong moment. According to sociology, the education is socialising for society and different groups. Educational psychology defines education as the development of the personality in interaction between the teacher and the student (Hirsjärvi & Huttunen 1995).

The Narcissistic Economy

The starting point of narcissism is fear. There the individual experiences the biggest causes of fear: loneliness, being abandoned, death, destruction, disappearing into unfamiliarity and nothingness. A child with its fears depends on its mother and her nursing. As the mother answers to her child's needs and shows loving care, she brings comfort and wipes away the fear (Kurkela, 1994).

The outside world and the self-concept are interactive: when self-conception is defenceless, the outer world becomes more threatening; and the more threatening the outer world becomes, the weaker the self-concept. According to psychoanalytic theory, when threatened, the human mind turns to grandiose delusions of grandeur: the more threatening the world feels, the greater the demand for own greatness. Own greatness and excellence create a reaction to the threat (Kurkela, 1994). Power and strength are nurtured in order to help the fear and worry about one's own existence. The narcissistic economy describes how much an individual is willing to invest their energy in external targets (self-objects) in order to achieve a sense of safety. A self-object may be a performance, another person, a position, or something else. The narcissistic economy also acts as a psychodynamic of society. This is when a music school sets its goal of bringing glory and fame through the success of its students. This makes the teachers and students act in an accomplishment-orientated way (Kurkela, 1994).

The super-ego is different in different individuals regarding the degree of difficulty or severity. The super-ego is like a foreman who often disagrees with his/her subordinates (e.g., subconscious instinct demands). The super-ego of some individuals may allow longer 'food breaks' than others. At its best, the super-ego is like a manager who evaluates general appropriateness and adaptability. At its worst, it is a taskmaster and merciless tyrant maintaining an uninterrupted sense of guilt. The super-ego is strongly connected to socialising in music and the world of musical instrument studies.

Play and Creative Attitude

According to Clark (1979), creativity comprises thinking, emotional perceptions and intuition. Creativity is both rationality and emotion. In music making, a synthesis of these elements can be seen: a certain amount of rationality, cognition and logic problem solving, as well as a lot of emotion and intuition. In music, playing is the key word when we are looking for a creative attitude. *Attitude* means a way of orientation to life and oneself; a creative attitude offers the freedom to perform something new, specific and individual or it may offer freedom from performing anything. The creativity in a creative attitude is particularly derived from freedom (Heikkilä, 1985; Kurkela, 1994; Solatie, 2009).

In musical creativity, the musician's need to convey the images of their internal world to the listener is important (Lehtonen, 1986). Musicians and composers modify their musical images into sound pictures that create mental images in the listener (Immonen, 2008). Kurkela (1994) compares musical reality to the realities of play and game in which the joy and power of life are channelled into action. The everyday reality with its utilitarian viewpoints does not belong to joy and power. Musical creativity enjoys the same kind of freedom as children's play. And still, play is never mere 'play' because it manifests reality in an essential way. Similarly, music also expresses something that is essential and real to a human being (Kurkela, 1994). Everyday reality can destroy playing and game realities if the player does not stay inside the game reality but starts to think that winning and losing in the game show the player's ability in connection to everyday reality. Then the game becomes war (Kurkela, 1994). Everyday reality penetrates the game in a way that transforms the playing, the game or the music into a profession. This clearly explains why a musician, professional or student, who takes music seriously, but in the wrong way, can easily lose the joy and freedom of playing

music. Another point of view about what accomplishments in music culture should be oriented to is setting excellence and perfectionism as the principal aim, which plays a key role in Western culture. Then it is not a matter of the instrumental value of excellence but its principled value. Life becomes an instrument for achieving excellence and is no longer the target itself (Kurkela 1994).

What is it that drives society and an individual to aim for excellence? From a narcissistic point of view, the reason is a narcissistic crisis and the attempt to control it. Delusions of grandeur are an attempt by the human mind to survive this crisis. According to the psycho-dynamic theory, the aim of excellence is also an attempt to resolve the threat of the crisis on a societal and cultural level.

The Psychodynamics of an Individual

The harder an individual tries to do their best, the more their personality is invested in the task and the more it becomes experientially a part of the self (Kurkela 1994). The more threatened the outside world, the greater the need for perfection in relation to oneself. This is about unreasonable demands for excellence in one's own performances. Only perfection can save an individual from destruction when narcissistic tension grows disproportionately. And even if the skills were on a high level, the unreasonable ambitions that demand perfection can totally suppress initiative and creativity (Kurkela 1994). In narcissistic tension, a person cannot have freedom in relation to their own actions. Thus, the survival of the play reality becomes impossible and is replaced by fear of own survival. However, although the creative initiation would suffocate, the action can continue mechanically. This is one conceptual way of explaining what the accomplishment means.

A narcissistically more self-sufficient individual can admire and strive for perfection and excellence, but it is not related to human dignity and it is not sought for at any cost. This kind of person is not so heavily dependent on receiving critical feedback (Kurkela, 1994). Kurkela (1994) compares workaholic to drug addiction. Obsessional bustling and moving becomes an absolute value by itself and an individual can feel alive only through the action. Typical of a creative attitude is freedom and independence, while work narcomania is based on extremely heavy dependency (Kurkela, 1994).

Kurkela (1994) also describes the Little Red Riding Hood strategy as a part of accomplishment-orientated action. The student feels (because of transference) that the teacher is somehow weak or incomplete and needs to be happy. Every week, the student brings a present to the teacher in the form of good homework. The teacher is like the big bad wolf waiting in the cottage for the goodies. This is a trap for the teacher: it is possible to adapt the wolf's role and for the teacher to voraciously start waiting for new accomplishments from the student. The teacher starts to live through the student's performances.

"The well of musical creativity can only bubble from inside. Only real power and content can be channelled into action. Music is the target of the performer, not the instrument... Satisfaction comes from the music itself, not from the secondary benefits offered by it. The benefit is secondary if it is based on the parents' or the teachers' (or one's own) ambition. In other words, conditional love. When music is part of a child's primary needs, it becomes a part of their personality on the

level that the child regards as necessary. Then, the child must not have music as a hobby because the self-object demands it (the alternatives would then be abandonment or the horror of annihilation)” (Kurkela, 1994, 345).

In addition to its parents and the teacher, a child may also feel abandoned. This is a matter for the superego, whose tyranny shows in sheer panic if the child has not fulfilled its task, which means practising. This is a matter of secondary consideration regarding music (Kurkela 1994).

The Teacher's Part of Performance-centred Instrument Studying

Like any work for its builder, a pupil with the necessary skills may also be an own creation to the teacher (a self-object). The teacher hopes that their excellence would show through their pupil, who is the teacher's 'masterwork'. The more the pressure is related to the teacher's narcissistic economy, the greater the pupil's expectations: the pupil must not shame the teacher with their performances. If the teacher feels they are safe, they do not have to show their own excellence through the pupil (self-object) (Kurkela, 1994). At worst, the pupil is just a tool to combat the teacher's narcissistic emergency. The most traumatic scenarios could be seen in connection with the course examinations of music schools and conservatoires: the teacher abandons the pupil when they fail. The abandonment means that the teacher has to explain the pupil's failure as a lack of talent. This is how the teacher 'washes their hands' of the case.

In a teaching situation, both the teacher's and the pupil's narcissistic economies are always present. A teacher who is conscious of their responsibility makes the pupil's narcissistic balance a priority (Kurkela, 1997). A harmful situation for a free and creative attitude exists when the student puts the teacher's interests ahead of their own (The Little Red Riding Hood Strategy). Healthy music education means that the teacher does not act in the service of narcissistic emergency and its product, principled excellence.

According to the definition, the superego is the part of the mind structure that superintends, criticises and condemns. It is one of the key components of raising and teaching children. One of the aims of a healthy music education is that the teacher does not ally with the child's superego against freedom by feeding the student's concerns about practising and learning (Kurkela, 1994).

If the teacher conveys the idea that becoming a musician will require major sacrifices and commitment, this idea starts taking on a life of its own in the student's mind and they drift into a cheerless grind or stop playing the instrument altogether. Also, the 'cleanliness training' associated with classical music (Kurkela, 1994) is connected to strict shame and the building of a tied superego. Classical music emphasises controlling structure, stylistic cleanness, purity of tone and the nobility of the emotions. Thus, greater self-control is required than in popular music. This also shows in the concert behaviour of the audience and musicians. The demands for formal self-control eventually make the students rigid because of their sense of shame and fear. The idea of being ridiculed is in the background connected to the teacher's own socialisation in the world of music: Do they believe that the musician's highest ambition is to 'serve music' or vice versa? Is music created because of human beings?

The way of acting of an instrument teacher is always a result of socialisation to the surrounding music culture. The teacher's way of thinking may totally miss the idea of comprehensive education. Then the teacher only appreciates aiming towards a profession, not music as a hobby (see Blair, 2009; Creech & Hallam, 2010). The teacher might also have socialised to asymmetric thinking without ever questioning it. For this kind of teacher, the most important thing is to do things 'right', to represent a certain school in a purist way. The teacher concentrates on honing the student's technique instead of aiming at their overall development. This is essential in performance-centred teaching, which only focuses on technical realisation instead of wholeness or content. Then, the evaluation only targets correctness, fluency and efficacy, which are all parts of evaluating superficial fluency. A hypersensitive, tense and stumbling student only receives feedback about the number of mistakes they have made, regardless of other playing qualities. The criteria for the evaluation are the key issues that keep performance-centred teaching alive (Lehtonen, 2004).

Enthusiasm has been described as one of the most important qualities of an instrument teacher. However, sometimes enthusiasm is directed more at principled excellence than the actual music teaching. Many teachers cite their own qualitative standards to justify their inability to tolerate musical weakness and incompleteness in a student's playing.

Lehtonen (2004) described asymmetry as an entirety shattering quality. One aspect of cognitive learning in the basics of music is playing by ear. Sight reading involves complex issues that are not suited to teaching young children. If we compared sight reading with learning to read a book, it would be the same as starting to learn one's mother tongue using a written text. The easiest way for a child to start learning to play an instrument is by imitating what they hear without any analysis. According to Lehtonen (2004), western music has always been based on asymmetric rationalism where intelligent systems have overturned emotion and the vocabulary explanation of music has knocked over the experience. Music education has become in some way of looking unmusical.

Lehtonen (2004) connects the myth of musical talent with asymmetric thinking. For example, psychometric and structural areas of musicality sense the level of pitch, an 'infallible' sense of rhythm and a quick ability to think (Garam, 2002). Understanding the deep level requires musical imagination and ability to experience, which do not depend on surface structural qualities. The major focus on surface structural qualities in musical instrument learning significantly directs the attention towards the child's competence or incompetence. Anxiety about one's own sufficiency is one of the reasons why pupils drift away from creativity. In addition, highlighting the structural qualities of musicality, when evaluating a child's musical talent, can cause many children feeling a strong sense of injustice. Tuovila's (2003) dissertation showed that music school's entrance examinations points have no connection with the success of subsequent music studies. When musical instrument studies only target correctness, we are entering a dangerous zone. Avoiding mistakes and the wish to do 'right' lead to a superficial performance and all kinds of atrophy (Pleeth, 1982).

One of the manifestations of asymmetric logic is separating technique and music (Lehtonen, 2004). Symmetric thinking in the world of music is more unusual and the technique becoming self-serving is the essential element of performance-centred pathology and is more a rule than an exception (Pleeth, 1982). In performance-centred

teaching, the aim is not wholeness but trying to do things right, with quality and at a high level without caring at all about the growing disintegration of the musician's uniqueness. In performance-centred teaching, nobody understands that on each skill level, wholeness, uniqueness and unbrokenness should be present. Harmonious musicianship can only develop from these starting points. When addressing performance-centred thinking, the most important issue is to avoid mistakes. Intellectual, conscious knowledge must also be present in music making but it must grow from functional execution in relationship to the musical ideas. One manifestation of asymmetric thinking is that experiencing music and free expression stiffen as a prisoner of different conventions and institutions. Asymmetric thinking simplifies the versatility of the surroundings and destroys musical creativity in music, suppressing the will of the performer. Asymmetric logic is the opposite of a comprehensive (symmetric) musical experience that music education has suppressed for so long (Lehtonen, 2004). The question of an imagined theory about a finger's movement can grow so important that every musical idea must pay homage to it. The nucleus of music is destroyed and the noble primitive instinct stops working. Before long, the whole reserve of means and technique will wither (Pleeth, 1982).

Another reason for the self-serving nature of technique may be the fact that such a reliability on playing is being sought that does not exist at all. This may manifest as mechanical honing of the composition although the necessary technique has already been acquired. This is an action that is not based on a creative attitude. According to psychoanalytic thinking the narcissistic economy leads to ensuring after ensuring the technique to maximise the success of the musical performance as the superego requires diligence and trying. The uniqueness of music playing has been broken and the pitiful development of a dropout increases instead of developing into a musician.

Aim of the Study and Research Questions

In educational science the concepts related to a performance-centred education are among other theories describing motivation, orientation and learning direction. Different ways of orientation are, for example, performance orientation and task orientation. Different levels of learning are, for example, surface and deep-orientated learning, as well as holistic and atomistic learning strategies. The concept of meta-cognition is also related to performance-centred thinking. These ways of perceiving do not explain the reason, width or dimensions that are essential to performance-centred thinking.

The context of the present research touches upon many central conceptions of educational science: education, socialisation, educational profitability compared to process-like action, as well as concepts of education, growth, learning, learning strategies, development, as well as depictions of man, morals and values. According to this, the concept of performance-centred thinking and teaching penetrates all research targets of central educational science, as well as many of the questions addressing the issue of being a human being. Regarding educational science, the research is part of educational psychology, in the area of music psychology in music education.

This research has not restricted the subject to a specific era, skill level or level of music studies. Performance-centred teaching is about something that is common to all skill

levels of music. Something breaks together with performance salience in performance-centred thinking but remains unbroken when dealing with the opposite: creative attitude, wholeness of the musician, uniqueness (Pleeth, 1982).

The research questions are as follows:

1. *How does performance-centred thinking show in musical instrument studies?*
2. *Why does a pupil, student, teacher or music institution drift into performance-centred teaching?*
3. *What kind of thinking and values assist, support or prevent performance-centeredness?*
4. *What are the consequences of performance-centred teaching and thinking?*

The Data and Method of Analysis

The data comprises 132 short narratives of Finnish student teachers about playing musical instruments and learning to play an instrument. Before writing their narratives, they read a short part of a book written by Itkonen (2005) about playing and studying a musical instrument. The student teachers reflected on their own experiences concerning the themes of the story and wrote about them. The data were collected in 2011.

In the data analysis, we used a narrative approach, which has become increasingly used in many fields of science (see, for example, Bruner, 1987, 1991; Burr, 1995; Czarniawska, 1998; Hyvärinen, 2004). In a narrative research an individual is seen as an active and significance-seeking actor who develops a self-concept in interaction with the environment and others. The research approach is based on social constructivism according to which the individuals build their own identity by developing narratives about themselves and the environment (Riessman, 1993).

The data include the narratives of 121 girls and 11 boys, which adequately reflects the distribution of student teachers at Jyväskylä University. The analysis was conducted using data-based content analysis through which the views of the respondents are mirrored in the theoretical approach of the article at searching for similarities and differences. The narratives were grouped and put into different categories according to their contents before analysing their message thoroughly. The most descriptive expressions were selected to be presented in the text.

Results

In this chapter we answer the research questions in the order that we presented them, adding the respondents' quotes to show the original example responses. After analysing the results, we connected the findings to the theoretical background and the research literature.

How does performance-centred thinking show in instrument studying?

Performance-centred thinking shows in almost all of the respondents' narratives. It is closely connected to the objectives of music schools, which are oriented towards becoming a professional musician. Those students who only want to play for pleasure

and as a hobby are not suitable for this aim at all and they are dropped out of the system destroying their music hobby, as the following quotes show.

"If the hobby's main target is to perform a series of pieces as well as possible, what's the main reason for having such a hobby? I played piano for nine years until I stopped playing because of a lack of enthusiasm... What's the benefit of knowing each note by heart? Why should I play only what the teacher wants me to play and what the requirements say? I didn't start playing the piano because of the teacher. But now afterwards it seems so." (T1)

Having piano lessons for nine years without deriving any pleasure from them and not knowing the reason for having lessons point strongly to the superego's action; superego harasses the individual to act the way the student has been convinced to believe: Instrument learning requires intense training without joy or playfulness.

Lehtonen (2004) referred to this kind of Protestant work ethic and the power system of music education. Also, learning musical pieces by heart has been described as being useless and a burden. The respondents could not influence the programme they had during their lessons. The lessons totally destroyed the student's intrinsic motivation. This seems to be the main reason for ending their lessons: the student may not be aware of their own role in the decision making about the programme. Maybe this explains why only elderly people attend symphony orchestra concerts and young conservatoire students are rarely seen at such concerts. After their lessons, they put their headphones on and listen to their favourite music, which is certainly not the music they are learning to play in their lessons. Juvonen called this paradox an *orientation crisis* (2008a, 68; 2008b). This may also be caused by other contradictions between the student and the teacher, not only about choosing the programme to be played.

"It feels like the society is connected to playing, which causes at least one reason for losing the pleasure of instrument learning. Teachers should not be embarrassed about making mistakes in performances. During a performance it's easy to start thinking about your own sufficiency when you're not able to play everything perfectly." (W4)

In their responses, the student teachers reflect on performing from the point of view of developing the whole of society. The embarrassment of their teacher or parents as a result of their making mistakes in playing was also mentioned, which strongly supports the previously mentioned 'cleanness training', referring to only concentrating on playing the right notes and not making any technical mistakes in classical music teaching, which strives for technical perfection and is based on the teacher's asymmetric thinking in which the target is not the student's comprehensive growth, but a total indulgence in perfecting the technical details in music. This is a typical example of the asymmetric logic described by Lehtonen (2004), in which a piece of music is split into unconnected sections from which the most important issue is highlighted: faultless and technically accomplished playing by heart forgets the wholeness of the music: the intellectual mind totally dismisses the emotional side and musical enunciation. The students' concern about their own insufficiency appears to always be present in nearly all the respondents' narratives about their musical instrument hobby. The phenomenon is caused by the narcissistic economy: the threat from the outside world is perceived as being very strong and contributes to reducing one's belief in one's own success. The demand for achieving greatness that could answer the requirements of the outside

world is very significant and creates a sense of insufficiency. This is one of the main reasons for discontinuing lessons. Also, the previously described embarrassment of parents, teacher, or even the entire musical institute, through making mistakes in an important performance shows the psychodynamic narcissism of society: the key focus is on bringing glory to the teacher, parents and music institute instead of being able to enjoy the music and its creative expression.

"I have been playing musical instruments at a music school since I was six. After the entrance exam, I started playing the violin and later changed to piano and guitar.

Although I enjoyed playing, the mandatory tests and performances, qualifications and music theory tests together with continuously changing teachers (some were good and some were not so good; one even told me to stop playing the piano because of my lack of talent) took away the pleasure of playing... When I played my homework at the lesson, I was constantly thinking: will I make the same mistake again in a certain place?" (W9)

The entrance exam, that was taken at least a couple of years ago in music schools, showed the students that they were being assessed and that their talent was constantly being compared to that of other students. The mandatory tests in the spring and autumn and the increasingly demanding course examinations with different sections (prima vista, scales, triads, cadences, etc.), together with the demand to simultaneously progress in the music theory examinations, destroyed the joy of studying music.

The requirement to study music theory must have been one of the main reasons for ending music hobby. Also, this is proof of the existence of the asymmetric logic in music studies: music theory has been detached from live music. It has become a superficial expressing structure, and the student cannot understand its connection to music making when playing a musical instrument. Many teachers have a way of teaching whereby they interrupt the student when a minor mistake is made, meaning they are teaching the pupil to stop playing at certain points in the music. These are the points that the pupils are already afraid of when they start to play.

When certain teachers tell a student to stop playing because of a lack of talent, it shows both cruelty and the teacher's total irresponsibility towards the student and their psychic and emotional well-being. Almost all music students can remember at least one teacher who used to make them cry a lot. Also, this can usually be explained by imagining the teacher's high demands on the student. This goes on although making demands is different to disrespectful behaviour. Unfortunately, this kind of behaviour is often passed down from one generation of teachers to the next one. This may also mean that the teacher uses the student to repel the teacher's own narcissistic anxiety: when the student fails, the teacher abandons them and tells them to stop playing as a hobby because of their lack of talent, 'washing their own hands' while trying to save the credibility of their own superior talent and giftedness.

Why does a music institute, teacher or student drift into performance-centred acting?

Because music institutes enjoy economic support from the state, they have been forced to justify their role as educators. When the peak performances of western art music

have been the guarantee of teaching quality and its most important target, performances and examinations have naturally been the measurement that has formed the basis of evaluating the music institute's learning results (Tuovila, 2003). The examination- and performance-centred focus has produced thousands of professional musicians in Finland and Finnish music education has been globally acknowledged. The aim of music education has been to attain a professional skill, which has been the primary target of studying.

There is also a flip side to this coin. While the most talented and motivated students have enjoyed a high-quality music education system that is suited to their aims and characteristics, many music students dropped out thinking to be failed music students (compare Anttila, 2004; Lehtonen, 2004). The examination-centred teaching culture's relatedness to practical music making has also been criticised. The life-long pedagogue Karhilo describes this phenomenon in the music journal *Rondo* as follows: Finland is full of well-educated pianists who are not even able to accompany songs in a family gathering – because it was not part of their music school's curriculum (see Kuusisaari, 1997).

Perhaps, even stronger criticism than against the instrument teaching, has been directed towards teaching the “basics of music”, which has been separated from the music itself. The *Rondo* journal in 1989 featured many articles criticising music theory and solfege teaching, describing them as unnecessary relics of the past that had no connection with practical music making (Koivisto, 1989; Vapaavuori, 1989; von Creutlein, 1989). Vapaavuori (1989) also raised the ever-current questions: *What has happened to the ability to add chords to a piece of music, or free accompaniment skills? What about improvising skills?* Forcing pupils into the same examination tube does not make it possible to address each pupil's personal needs and aims. In the worst cases, examination-centred teaching was like a continuous qualifying session: the most talented and most motivated students, as well as those with the strongest mental qualities, could achieve the ‘goal’ and the others had to abandon their hobby and drop out. According to Heino and Ojala (1999), the pedagogical quality or music schools' ways of action had previously never been questioned. If the pupils did not achieve the given objectives, the fault was automatically their own.

A performance-centred teaching was also criticized in the 2000s. Changes have been made, which can be seen in the Curriculum 2002 as broadness and removal of the SML's (Finnish Music Teachers Association) examination criteria and model programmes. The current official line of learning conception is based on a starting point in which the goal of teaching is to develop a positive music relationship. This does not mean that previous issues are automatically forgotten. Almost all adults today received their music education in a performance-centred learning environment – the old traditions live on in their memories and possibly also in teachers' conceptions of teaching. Despite the official changes, the old values and ways of action live on as an institution-centred and teacher-centred teaching, guiding the teaching in the everyday life of music schools.

These days, music schools have many ways of flexibly applying a broad curriculum. The duration of instrument lessons can be changed and there can be years free from general subjects (music theory, solfege etc.) or group playing (Pohjannoro, 2010). These flexible solutions have also been criticised.

"...I think that even elementary schools are more flexible than music schools and that's strange! Isn't it possible to find different paths for hobbyists? They are usually not found. I also think that this broad curriculum could be flexible. And mandatory music theory studies must be more flexible. What is most important is that the urge to play an instrument and the love of music should be kept alive. The hobby should continue and not be stopped by all these study modules. And there should be an opportunity to choose optional subjects and not just say: we have this curriculum – take it or leave it. This is often the way things are done and I cannot accept it." (W21)

As the quote shows, the organisation of studies is dependent on the actual education institute or music school. The studies depend on the attitudes and values behind the planning. On an institutional level the changes are slow and, by simply studying the official papers, you could believe that the changes had already taken place. However, music education in music schools is like a large ship that turns slowly because the old methods of teaching and old practices of organising the action are deeply rooted in the culture and everyday life of the institutions. Nevertheless, it is possible to change a course. The principals of the music schools are ready and capable of reacting to the changes taking place all around us.

The performance-centred thinking in music institutes is based on the fact that the curricula were originally designed for educating students to become professional musicians and there was no room for students with music as a hobby who had no major targets for their studies. Conservatory-level institutes in particular had a clear focus on educating professional musicians.

"Also, the rigidity and dullness of the curriculum did not make studying interesting. The teaching should be more motivating and meaningful in order to retain the student's enthusiasm. There should also be more room in the learning process. Creativity should also have more room in the learning." (W4)

When a joyful instrument playing hobby turns into an exam-focused grind, it gives birth to a narcissistic emergency. The narcissistic economy of an education institute, as well as teachers and students, tell us something about their anguish. When a student struggles against it enough, the whole notion of playing an instrument may be associated with too many negative issues. Nevertheless, this does not open enough the performance-centred thinking and drifting away from a creative attitude. Pleeth (1983) spoke about the disappearance of instrument playing's creativity as a breaking of unity and comprehensiveness. The fear of being laughed at is constantly present, based on a world in which the teacher had socialised during their own studies.

"The perfection associated with the classical music genre is particularly merciless: completeness must be targeted in both technique and expression; in other words, the required technical performance must be mastered perfectly before moving on to expression. I mean it must be completely perfect and faultless. I had to spend many hours practising one trill or scale because in my next lesson it had to be mastered perfectly." (W9)

"I played viola for eight years and one reason for stopping was the performance-centred thinking aimed at the next qualification exam. It was not possible to

simply play for the sake of enjoyment. This is a matter that should be taken into account because the endless performing started making me anxious.” (W44)

Playing an instrument requires great technical skill, virtuosity and precise motoric abilities. Still, technique and musical expression are two quite different issues. They do not differ from each other in what happens in performance-centred playing. They are completely separated from each other. This can be compared to children's speech learning. A child learns speech sounds, words and clauses in their various contexts, expressing the intrinsic ideas in speaking in which no part of it is separated from what the child wants to say and express. For example, a child can practise the letter R separately but, as a whole, the child does not miss the connection with the expressed idea. Every skill is utilised right away, no matter whether the child is not sufficiently capable of expressing the intrinsic ideas. In instrument playing and practising, one may practice one simple phrase hour after hour as long as the connection to the context disappears from sight. In performance-centred action, the performance and technical part become self-serving. The student practises to reach such reliability in playing which does not exist. The narcissistic economy results in confirmation after confirmation in order to ensure the maximum success of the performance according to the superego: making of repeated attempts again and again. Pleeth (1983) spoke about the oneness and completeness of concepts, both of which mean the same thing in this context. Separating technical performance from expression in music happens quite easily when learning to play a musical instrument. It is rarer for it not to happen.

“...My biggest fear in matinées and concerts was forgetting the order of the notes; everything else was secondary as long as I didn't forget how to play the piece. Of course, my fears became true and I had to start playing from the beginning and then made a mistake in the same place in front of an embarrassed audience and teacher. That was my last matinée because I stopped playing the clarinet after three years at this point.

I couldn't see that learning to play an instrument at music school was worth the trouble as the pieces were dull and did not reflect my own musical taste.” (W17)

To Kurkela's (1994) definition of creative attitude we can add the unity of the above-mentioned mental images, intelligence, musical thinking and movements. Then the music becomes a target for the subject, not an instrument for carrying out the parents' or teacher's ambitions. In performance-centred action it often jams or blocks, but the activity still continues on some meaningless level. The activity does not happen as part of a student's primary needs but for secondary reasons based on the fear of being abandoned.

“I played piano in my childhood but after a couple of years I didn't like it at all. Because my parents pushed me, I kept playing for a few years until they let me stop. My memories of concerts: a piece of music learned by heart was played by one pupil after another and nothing else was important as long as I didn't forget what I was playing. These concerts are not part of my fondest memories.” (W15)

“Music is mostly about emotion, innovativeness and expressing oneself...My experiences from childhood do not include any of these and I believe they have been lost in the performance-centred thinking that predominates... When you

completely commit to a hobby, the fears, pressure and feelings of enforcing start emerging. Are we allowed to fail sometimes?" (W1)

Why would anyone agree to continue such irrational activity? The narcissistic economy and superego can explain part of it. They reduce freedom and sane faculty to judge; the individual submits to the performance-centred, self-built and guarded slavery influenced by narcissistic economy and superego. Making music in slavery is not performing anymore. In performance-centred action, the guard of the slavery is the individual self. According to the psychodynamic framework, the guard is the individual's own superego and the driving force is the narcissistic emergency.

"When I attended elementary school and lower secondary school, I studied piano two times a week at music school. I loved playing music but I got frustrated at always having to learn everything by heart. Learning to play an instrument in a music school is a very solitary and disciplined activity – you practise music for the examinations and concerts – not for your own pleasure. When I stopped having piano lessons, I didn't touch the piano for many years. Nor will I ever accompany or play together with others because it makes me uncomfortable. My music studying years have left both good and bad memories." (W67)

The original reason for studying music – at least on a profession-targeted level – is, of course, love of music. This is often followed by intrinsic compulsion and desire to learn to play a musical instrument. A young student may give their all, in order to achieve the target – but the development process needs a lot of musical nourishment and joy. Often, teachers do not have enough to offer; they may have lost their own joy of playing music and have become petrified technocrats who now write technocratic prescriptions for playing. A young student obeys them because they believe that the teacher knows best.

According to the individual's psychodynamic idea, performance-centred action is something within which the creative initiative has diminished but the action continues mechanically. According to Lehtonen (2004), the asymmetric schematising and dichotomies related to art music suffocate the performer's own instinct. This is primarily due to a loss of self-confidence, which happens in performance-centred activity. The performing is self-guarded slavery. But the agreement to become a slave requires the loss of self-confidence). According to Lehtonen (2004), asymmetric thinking always searches for dichotomies such as talented/not talented student or first-class student/miserable student. The dichotomic thinking ultimately crushes even those who think they are safe inside it. Often, the first thing a pupil learns in a music school is that they are not talented enough to study music.

"The pieces of music were given by the teacher (all of them classical music, of course). The piano lessons were directed at exam situations and I got 4/5. Well done, give a little more nuance to your playing. Year after year you attend matinées with a red face to admire how the others play like it was coming directly from their spinal cord. When it was your turn to play, your only thought was: "Don't forget anything..." Year after year the same lonely grind supervised by the same teacher." (W14)

Lehtonen (2004) speaks about musical talent concepts and concepts of learning connected to asymmetric thinking. Self-concept is also reduced by the myth of talent.

According to the myth of talent, classical music can only be learned by those who have an overwhelming natural, inborn musical talent.

"Many hobby-based music schools have entrance exams, which mean that music as a hobby is only meant for those who have an inborn musical talent and there is not room for pure amateurs... When you are completely committed to the hobby, fears, pressure and a sense of being, forced start to emerge. Is there a reasonable chance you will fail? If the most important thing about the hobby is to perform a series of pieces as well as possible, what is ultimately the main reason for having such a hobby?" (W1)

The basic skills of a musician may be attainable for many larger groups of people than has been traditionally estimated. One student needed to repeat the same piece 5000 times in order to learn it, while another student only needed to repeat it 500 times. Nevertheless, if the result is the same, we can reasonably say that everyone is capable of learning. And even if everyone is not able to achieve surface-level smoothness as well as some other levels, their music making may still include some interesting and dignified elements.

What kind of contemplation and values assist, support or prevent performance-centred thinking?

One issue connected to the talent myth is the definition of musicality. A music school selects a child who is approximately eight years old, who can sing reasonably well and repeat a rhythm that is clapped to them. Lehtonen (2004) saw these skills as structural perceiving abilities and added that they are only a part of musicality, not the whole truth. These skills mature at varying rates in children's development. A child who has a lively musical imagination and ability but who does not sing correctly may be excluded from a music school. A child who is able to sing correctly is allowed to study because there is no focus on any other deeper musical talents or lack of them.

Another myth pertaining to learning, which affects an individual's self-confidence, is that it is not worth starting to learn to play an instrument at an older age, for example, during puberty. Most children become (if at all) hobbyists, not professionals. Why could an enthusiastic music lover aged 15 not be accepted at music school in the same way as an eight-year-old child who has good pitch? Moreover, there have been cases where an individual who started playing piano at the age of 20 reached a professional level by the age of 25.

Music school curricula state that the aim of the school is to offer an opportunity for children and youngsters to enrich their life with music. Nevertheless, there are age limitations redolent of the former Soviet Union's efficiency education. Music schools justify their early starting age with their examination system: a 15-year-old student may not be able to complete their training programme in sufficient time. However, the entire system has been built; it did not create itself and it should serve people, children and youngsters who want to learn to play a musical instrument. Some steps have already been made in this direction.

"Because I didn't take lessons in playing an instrument or singing, I didn't dare start playing an instrument because I thought I was meant to start at a much younger age.

I had thought it was performance-centred and that all hobbyists of my age should already have years of experience behind them. In reality, you can start a music hobby at any age... Music as a hobby is not just about focusing on examinations; at its best it offers musical engagement and enjoyment to the hobbyist." (W18)

The starting age has also lost its significance because of recent global brain research. Currently, researchers are interested in all the changes engendered by music studies in a child's brain, even within a short time frame. According to the research, the impact concerns very early developmental stage periods, even the foetal period (Huotilainen, 2009). Music is more significant than all the positive changes that it causes to the thickness and organisation of the cerebral cortex. Thus, only focusing on the significance of music studies in babyhood and early childhood creates a new risk in connection with the hard value thinking of music education.

What are the consequences of performance-centred thinking?

What is the connection between narcissistic anxiety, compulsive intellectualising and asymmetric thinking? Asymmetric thinking may be one way to control the narcissistic anxiety. The simplification of reality creates the illusion of controlling life. This is connected with the compulsive need for a definition but life cannot be controlled by intelligence. The individual's soul withers, if the life is seen mostly intellectually by defining issues. Using the concepts of depth psychology, we could state that there are many components in the slavery that individuals build for themselves. Metaphorically speaking, the narcissistic economy requires a driving force where the super ego works as a foreman; and asymmetric thinking with its myths creates misleading signs along the road.

"In instrument teaching we should remember that not everyone needs to become a professional musician. Some people just like to play for pleasure. This appears to have been forgotten by many teachers. Of course, learning to play a musical instrument requires practising and discipline. However, in order to retain the motivation and the joy of playing, the practising should be meaningful, experiential and should give more room for creativity." (W9)

"The most important issue is not about just hitting the right notes in a serious mood but rather doing things together, creating something together and being together in the here and now. We are present and enjoy music making. What could be better than sharing this feeling with others who enjoy the same experience?" (W11)

At worst, creativity and innovativeness are drowned by performance-centred thinking and playing. The first respondent points out that not everyone needs to become a professional musician. The music schools' entrance exams already give the impression that music studies are only for the most talented individuals. When the student has become deeply committed to the system, this is when a sense of fear, pressure and coercion emerges. There is no room for failure, which kills all kinds of creativity of the activity. There is good a reason for considering playing an instrument as a hobby, learning each note by heart, and selecting a programme to be played. The second writer

misses doing things together and creativity. Playfulness, joy and working according to the child's needs would bring joy to learning to play an instrument. The teacher should be there for the child and try to retain their interest in playing music throughout their life.

"In music there is always some kind of competition and performance-centred thinking which aims to accuracy. In orchestras there is competition about being amongst the best musicians or getting into an even better orchestra. When you play a musical instrument, you are also competing against yourself, as you are required to attain different skill levels – and every performance must be perfect. If you make a mistake during the performance, everyone hears it and this will impact how others see you as a musician. In the world of music, perfection should be forgotten and musicians should be given an opportunity to evolve based on their own interests." (W2)

The writer above notes the element of competitiveness in music studying, which can be seen not only in competing against oneself but also competing against others. In addition to competitiveness, music studying involves a lot of envy and jealousy (Lehtonen, Juvonen & Ruismäki, 2011). When taking different levels of examinations, the competition focuses on playing accurately, striving for perfection and avoiding mistakes. The mistakes create a sense of disgrace and feeling that others no longer regard you as a good musician. The fear of envy and jealousy often present in the musical world causes students to underachieve, feel disinclined to perform and refuse to participate in competitive situations (Lehtonen & Shaughnessy, 2008). Also, the next writer thinks that the pupils' opinions should be heard much more and be taken into account.

"...It feels like society is circling around performing, which is one reason for losing the joy of learning...Children in particular should be taught that life is not about performing and teachers should bring more joy into teaching music...Schools also need teachers who are patient and don't get frustrated in their ongoing work. Pupils quickly notice if a teacher is not interested and gets frustrated when working. This is reflected in the pupils and they may lose their motivation. This shows the importance of the teacher's attitude to what is being taught." (W4)

More room is needed for creativity, rather than performing. The aforementioned respondent views performance as a cause for losing the joy of learning, leaving a sense of inadequacy. The respondent expands the horizon to include the school level. A teacher who loses interest in teaching is one reason for the lack of pupils' motivation.

"I played piano when I was younger and my parents started my interest I music. I don't believe I would have started playing the piano if my father hadn't inherited a beautiful piano from his grandmother. Although I didn't like playing the piano at first (mostly because of difficulties with sight reading and problems concentrating), I was eventually grateful that it led to my interest in music. This is because, over the years, playing the piano became a way of relieving stress and handling issues when I was worried about something. I would sit at the piano and start playing. As soon as I started playing, I forgot all my worries and concentrated only on the music. I strongly believe that children should not be pressured into learning to play an instrument because there's a risk they might

lose interest in music and what otherwise would have been a joyful activity becomes compulsive playing.” (W25)

The above respondent was initially negative about playing the piano, because sight reading was difficult. However, everything worked out well in this particular case and the writer learned to enjoy piano playing and started to use it as a means of relieving stress.

Conclusion

Because the data of this research is almost 10 years old, some changes have taken place in the instrument teaching during this time. There have been many renovations in the curricula of independent music schools showing good will to change the traditional situation and the problems caused by those matters and issues mentioned in this article. Still, the problem is not only at the curriculum level, it is in the thinking, attitudes and ways of acting during the real-life instrument teaching situations. With this we mean teachers, who have been teaching in their own way for decades and who cannot easily change their ways of thinking and acting. This is the real reason for problems: changes can be made in curricula, but they cannot be made inside the teachers' heads. Every change in this deep level takes time, maybe even decades to occur.

There are also doctoral researches being carried out on the current situation in Finnish music schools and conservatoires, as well as in higher levels of instrument teaching on the same issues.

Like the longitudinal research by Tuovila (2003), the results of this research strongly suggest that when performance-centred activity takes place in the context of playing an instrument as a hobby, the hobbyists quickly lose their sense of playfulness and enjoyment. This can be attributed to the structure of the music school system. The system was originally designed to produce musicians for Finnish orchestras, which had been established in most towns. From the system's point of view, the entire curriculum is aimed at the efficient production of professional musicians. This means that those hobbyists who do not take their studies seriously enough are quickly dropped out of the system. Because society at large supports the music school system, it puts pressure on the music schools, which becomes more specific in terms of measuring the number of students and the quality of teaching. The results strongly support Lehtonen's (2004) ideas about moving from inclusion-emphasised teaching to exclusion-emphasised teaching when a high number of students have committed to instrument learning. The narratives in this research clearly mirror the paths that Lehtonen has described, and which traumatise many former hobbyists.

Also, an economic-technological discourse has gained ground in many areas of music education institutes, including universities. Despite much talk about creativity and continuing learning, there is a one-dimensional picture of a human hiding underneath, which has very little to do with a genuine, happy and self-expressive image of man. In many ways, the narratives analysed in this research describe autocratic and domineering teachers who think that only they “know the truth”.

I sang in a choir until the second year of upper secondary school and played piano for more than ten years. I always wanted to become a good pianist but too rigid

teaching and the pressure of performing destroyed the joy of playing and I completely stopped playing the piano for several years. Now, because I can play whatever I like, I eagerly practise. (W92)

The 'epistemic sense of superiority' described by Lehtonen is mirrored in many narratives when the respondents described their teachers.

Some narratives show the pleasure and enjoyment of music that the respondents discovered when they stopped having lessons and started playing what they wanted to play. Self-determination and a sense of mastering their own activities are factors behind the motivation and should be given greater consideration in instrument teaching. From a psychoanalytical point of view, it could also be a question of subconscious being interwoven with reality (integration) in which a process of becoming conscious of the subconscious when an individual has taken the subconscious safely under the rule of ego. This is followed by greater freedom of choice, enhancing the flexibility of self-image, strengthening self-esteem, as well as strengthening the sense of experiences of control, resulting in the ability to enjoy playing an instrument again.

Many of the narratives described the lack of creativity and the need to increase it in the entire instrument playing experience. The creative process always engenders something new (inspiration, experience or a specific object). The definition of creativity is always an intrinsic process that crystallises in some handiwork (Häggglund, 1984). This is what the respondents seem to miss. The three-level division of creativity by Häggglund starts with the subconscious, which is based on early preverbal experiences, the basic truths of life. A more superficial level makes the pre-conscious memories from childhood live again, although it does not reach the depth of the previous level. The most superficial level of creativity is cleverness, the conscious resolution of problems. However, in a creative music-making process, all three levels are present. A musically creative product contains great amount of narcissistic energy, and the performer reveals their technical, emotional and personal traits. The creative process offers the elements of the subconscious an opportunity to become consciousness in an artistic form when the ego need not take cover (Lehtonen, 2007).

In music making, the aggression and attention are clear. Learning skills show power and control as they conquer new areas in order to gain satisfaction and enjoyment. However, music also involves tenderness, compassion and warmth brought by affection. These offer a musician strong sense of success and finding something new.

Both intelligence and the emotions are present in music making. Nevertheless, the teaching is often focused on the techno-instrumental side. The expression of emotions often stays unnoticed. The creative approach requires both sides to be present. According to the respondents' narratives, this appears to be missing in instrument teaching, resulting in the loss of joy and enjoyment when playing an instrument.

The maintenance of playfulness and a creative attitude through gamification is part of a human being's special abilities and is derived from an individual's intrinsic dynamics, self-expression and journeys to alternative realities and conquering new worlds. Kurkela (1994) spoke of the creative attitude (position) as he highlighted that the focus is not in the performance or product; it is in the ability to be open to new issues, like a small child when building their own imaginary world, regardless of the opinions of others.

Performing is the opposite to the above because it misses freedom, it closes new possibilities and it lacks the authenticity of content that is untouchable (Kurkela 1994). When playing an instrument, what is most important is the student's intrinsic motivation, which makes learning a self-serving activity and the targets and aims are set by the students themselves (Tynjälä 1999).

The competitiveness and performing in instrument teaching are 'black education' because in such education, only existing cultural pain is renewed and the student is socialised into it. This is related to the narcissistic economy, i.e., how much the individual wants to invest their power in extrinsic targets in order to gain a sense of safety. The narcissistic economy also works as society's psychodynamics when a music school puts as the most important target searching for its own honour through the success of pupils.

The student teachers' narratives about instrument learning expose a harsh reality and black education. Centuries-old traditions hang like an unwritten curriculum above the teaching, shadowing the joy, playfulness and creativity of playing an instrument. The methods and procedures from the past are easily revealed behind the ostensibly constructivist teaching-learning conception and the teachers' hidden objectives cast a shadow over the instrument studies of many talented students. Much has been done to develop the sphere of instrument teaching in music education, but there is still considerably more that needs to be done to make all the hidden elements visible and then reduce them to the barest minimum. They should be replaced by the genuine joy and delight of playing, playfulness and creativity, from where the music originally stems.

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THE INVESTIGATION OF VOICE ERGONOMICS FACTORS IN THE PROFESSION OF CONDUCTOR

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Abstract

Conductors are professional voice users who need a good voice, and knowledge of voice ergonomics may help prevent voice disorders.

The aim of the study was to investigate the knowledge of voice ergonomics and factors that impact on the voice among choir and ensemble conductors.

An online survey was sent to Latvian choir and ensemble conductors. The survey was operationalised through a Questionnaire of voice ergonomics risk factors, included questions concerning the conductors' working practice and vocal self-assessment scales. The questionnaire was completed by 155 choir and ensemble conductors.

The data concerning general and vocal health, workload, noise, air quality, body and head posture, vocal load, stress, and fatigue during and after rehearsals were obtained and analysed.

The survey outcomes provided valuable information about factors of voice ergonomics amongst choir and ensemble conductors and it highlighted ways for improving vocal health in this group of professional voice users.

Keywords: *voice ergonomics, conductors, vocal symptoms, working practice, online survey*

Introduction

In Latvia, choral music has old and well-established traditions, which are maintained, cherished and handed down, first and foremost, by a choir conductor, artistic leader - a charismatic personality, who is a leader, guide, teacher and advisor of a collective in one person. A choir conductor is responsible not only for the conceptual selection of artistic programs and planning the work of the collective, for technical and artistic rehearsing and performing these programs at the concert, but also for inspiring, guiding and stimulating the collective for a collaborative process of creation, joint artistic communication among themselves and with listeners, and the wider society.

Vocal communication is like an intermediary between human relationships and the development of a personality. Therefore, practitioners and theoreticians from different

fields of activity (music, medicine, psychology, and pedagogy) have always been interested in the possibilities of human voice expression.

Voice is a personality's means of expression since it can betray our deepest feelings. Despite different predispositions and genetic qualities, a personality characterised by a constant, internal subjectively dwelling 'Ego' develops during interpersonal communication. The individuality of any person develops through the interrelations that occur between people, which contend that each person's uniqueness results from being together with others (Eckert, 2008). Though voice properties are anatomically and acoustically determined, the voice reflects an individual's personality and emotional state. At the same time, human voices are unique within the individual context and as a means for conveying the most profound ideas of musical composition and individual emotional experiences. This aspect of voice is in the centre of a choir conductors' and vocal ensemble leaders' attention.

An illustrative example of the reflection of emotions in a voice can be seen in the latent voice messages frequently used in music therapy, for example, "voice betrays my feelings". Under the influence of strong emotions, such as mourning or anxiety, the voice changes, frequency vibrations emerge, and we perceive them as trembling voices. The fact that our voice can betray our feelings becomes evident when the speaker needs to hide his emotions (Paipare, 2021). The human voice is referred to as a performative phenomenon and an aesthetic object. These two concepts express the aesthetic power of the influence of voice.

Aesthetics of voice is tightly related to vocal health. Vocal disorders influence the sounding of voice by changing its tone, loudness, and timbre. In cases of disorder, voices sound tired, expressionless, and sometimes even annoying for other people. In many professions, voice is the primary working tool, as in those of actors, teachers, and the clergy. For these professions, it is essential to address the audience, and arouse their passion and inspire them. The profession for which a charismatic, highly professional voice is almost a compulsory prerequisite is that of a choir conductor.

The development of any profession is based on the skills and competencies necessary for professional activity. The profession of a choir conductor requires deep and comprehensive knowledge of music, special abilities of a conductor, and demands a considerable effort of mind and nerves, and physical strength (Linderbergs, 2012).

However, it is worth noting that choir conductors are one of the voice professions for which the knowledge about how to keep one's voice good and the possibilities of preventing vocal disorders are vital. A healthy conductor's voice is essential because giving the singers instructions can positively affect the singers' voices. Unfortunately, vocal problems are quite a widespread phenomenon among choir conductors. The conductor who has not acquired conducting methods and techniques well enough may harm his/her voice (Smith & Sataloff, 2013).

Voice is the conductor's work tool with universal application features. The requirements set for a conductor's voice are specific – it should be ready for rapid changes in functions, namely, for the transition from speaking to singing, from a low compass to a high compass, from soft dynamics to loud dynamics, from one style of singing to a different style of singing, for the development of clear diction a. o. The conductor's vocal load is closely related to the auditory load. When working with a choir, the conductor tries to hear clear chords, intonation, correct voice leading, diction, pronunciation of different languages, changes in timbral nuances and dynamics of choir sounding, and in listening to music

performed by the choir, the conductor's vocal folds show motor activities (Davidova & Sersnova, 2012). Additionally, during the rehearsal, such changes in activities – explanation (speaking voice), demonstration (singing voice), careful listening, repetition of a musical thought – take place innumerable times (Rehder & Behlau, 2008).

For a significant number of choral singers, the conductor is an essential vocal teacher, and they expect the conductor to be their authority on singing, the art of choral singing and the fundamentals of music (Smith, 2018). The research done in Finland, involving a survey of 319 choral singers, revealed that 63.2% of singers obtained their knowledge of voice and its use from their choir conductors (Ravall & Simberg, 2020). The task of a conductor requires not only teaching choral music but also demonstrating healthy ways to create it through one's singing voice (Webb, 2007). The choir conductor is required to know the basic principles of developing a free and natural vocal sound, risk factors for voice disorders, the development of a vocal apparatus. Furthermore, the conductor should be aware of the singers' voice problems, peculiarities, and specificity. This means that a conductor has to perfectly know and study the anatomy of the voice producing system and physiology of singing voice to train singers' voice and bear in mind their vocal health.

Voice ergonomics has been developed for improving voice and speech as tools for communication. It consists of all factors and measures that increase the possibilities of good voice and speech production. Voice ergonomics is concerned with personal and environmental factors (Sala et al., 2019). In choir conductors and choirmasters, factors of voice ergonomics involve conductors' knowledge about voice and different aspects of its use, vocal load (duration, continuity, and intensity of using the voice), acoustics and air quality in the rehearsal rooms. Such ergonomic factors as satisfaction with work and stress are also of great importance, since they are closely related to the internal microclimate of the choir (mutual understanding, creative atmosphere, discipline at rehearsals, a.o.).

The scientific literature has provided research on voice ergonomics in different representative vocal professions (teachers, call centre operators, fitness trainers, etc.). However, factors of voice ergonomics among different styles of singers have not yet been studied extensively, and within the context of the profession of conductors, these issues have been studied even less. Self-assessment questionnaires, where the respondents describe their subjective feelings and objective measurements of the room acoustics and vocal load, can be used to explore issues of voice ergonomics (Hom, 2013; Phyland, 2015; Rezende et al., 2015; Renket al., 2017; Ravall & Simberg, 2020). Studies on occupational voice disorders emphasise the necessity to adopt a more bio-psycho-social approach, with a particular focus on addressing the current gap in our knowledge that would support the existence of the link between voice disorders and environmental conditions (Behlau et al., 2014). An excessive vocal load is one of the principal factors responsible for functional dysphonia (Whitling et al., 2017; Zabret et al., 2018). Work environment, workload, and psycho-emotional state are ergonomic factors which leave their imprint on the voice.

Since the research on choir conductor's vocal health and conditions of using voice has not yet been done in Latvia, **the aim** was to elucidate the conductors' knowledge about voice ergonomics and factors impacting voice.

Methods

The research was carried out within the frame of the project “Choir Conductors’ Vocal Load within the Context of Voice Ergonomics” (Nr. lzp-2020/2-0250). The resolution from the Clinical Investigation Ethics Committee of The Development Association at the Pauls Stradiņš Clinical University Hospital was received for the implementation of this research.

This study was a cross-sectional study utilising an online questionnaire survey. The Questionnaire of voice ergonomics risk factors (Sala et al., 2019) was supplemented by questions that complied with the specificity of choir conductor profession to clarify the state of respondents’ vocal health and factors of voice ergonomics. The questionnaire included the following blocks of questions:

- Demographic information (age, education, work experience, type of voice etc.);
- Health (laryngeal pathologies, general health condition);
- Knowledge about voice ergonomics;
- Workload (the number of rehearsals, concerts, length of rehearsals, the number of choir participants a. o.);
- Factors of environment (noise and reverberation, quality of the air);
- Body posture and the position of the head during the rehearsal;
- Working practices;
- Stress.

Three self-assessment scales were also included in the questionnaire.

Vocal Symptoms Scale (VSS) (Simberg, 2004) was a screening tool for voice disorders, it included seven vocal symptoms, and the respondents were supposed to answer how often they have experienced them during the recent year. Two or more weekly or more often occurring vocal symptoms might testify to having voice disorders.

The Voice Handicap Index (VHI-10) (Rosen et al., 2004) consisted of ten statements characterising the impact of voice disorders on the person’s physical, functional, and emotional state. By applying the five-point Likert scale, the respondent evaluated to what extent each of these statements applied to their own experience of using voice. The Singing Voice Handicap Index (SVHI-10) was developed on the example of the Voice Handicap Index and included ten statements related to singing voice (Cohen et al., 2009).

The questionnaire was sent electronically to 700 addressees, included in the register of Latvian amateur choirs and vocal ensembles. Unfortunately, there was no information on how many addressees had received the invitation to participate in the study and how many of those addressees who received the invitation to participate in the study were conductors. Thereby, it is impossible to establish the response rate. The questionnaires were filled by choir and vocal ensemble leaders – conductors and choirmasters. A total of one hundred fifty-five completed questionnaires were received.

Software SPSS 16.0 for Windows was used for the statistical processing of data. Methods of descriptive statistics were applied to establish the distribution of different voice ergonomics factors in conductors. The research data did not correspond to the normal distribution; therefore, non-parametric data analysis methods were used. A Mann-Whitney test was applied to compare the two independent groups. The Chi-square test was used to compare dichotomous values. The correlation between the parameters was established by using Spearman’s correlation analysis.

Results

In Latvia, there are 418 choirs registered in the Latvian culture database (LR Ministry of Culture, 2021). Questionnaires were received from 155 respondents, out of which 115 were women (74.2%). The distribution of respondents by age is shown in Table 1. Out of all respondents, 19 were smokers (12.3%). In addition, conductors with different lengths of service participated in the research: the length of service of 17 respondents (11.0%) was less than five years, for 20 respondents (12.9%) – 6 to 10 years, for 30 (19.4%) from 11 to 20 years, 42 (27.1%) from 21 to 30, 29 (18.7%) – from 31 to 40 years, and for 17 (11.0%) longer than 41 years.

Table 1. Respondents' mean age in female and male groups

CRITERION	n (%)	M	SD	Min	Max
All respondents	155 (100)	47.4	13.8	17	75
Gender					
Females	115 (74.2)	48.0	13.3	20	75
Males	40 (25.8)	45.5	15.1	17	75

Most of the respondents (88%) had higher levels of education in music, including those with a doctoral degree ($n = 2$). Sixty per cent of respondents had obtained their education in the profession of a conductor, and 56% - in the profession of music teachers. The respondents' responses testified to the fact that higher education was also received in such professions as vocalists, instrumentalists, musicologists, and conductors of symphonic or wind orchestra. During the process of higher education, most respondents had obtained several professions.

The analysis of conductors' involvement with a choir showed that most of them work with mixed choirs (72.3%), whilst those who worked with boys' choirs were in the minority. Almost thirty-five per cent of respondents were conductors of vocal ensembles (see Table 2). The obtained data indicated that in 57.4% of cases, one conductor worked with two or even more collectives.

Table 2. Types of choirs conducted by the respondents (female, male)

TYPE OF A CHOIR	TOTAL (N = 155)	FEMALE (n = 115)	MALE (n = 40)
	N (%)	n (%)	n (%)
Mixed choir	112 (72.3)	73 (63.5)	39 (97.5)
Vocal ensemble	54 (34.8)	43 (37.4)	11 (27.5)
Female choir	45 (29.0)	41 (35.7)	4 (10.0)
Children mixed choir	36 (23.2)	25 (21.7)	11 (27.5)
Girls' choir	24 (15.5)	22 (19.1)	2 (5.0)
Male choir	21 (13.5)	7 (6.1)	14 (35.0)
Boys' choir	15 (9.7)	9 (7.8)	6 (15.0)

Respondents represented different voice groups. In the female voice group, 40% were sopranos, 24% - mezzo-soprano, 35.7% - altos; in the male voice group, 25% were tenors, 57.5% - baritones, and 17.5% - basses. Along with conducting, 79% of conductors sing in different music collectives themselves - in choirs, ensembles or solo.

General and vocal health

The analysis of the data obtained on the general state of health showed that the most significant number of conductors complained about shoulder and neck muscle pains (59.6%), lower back pains - (35.1%) and about carpal channel syndrome, which appeared as numbness of palms and fingers (22.8%) (see Fig. 1). Furthermore, a Spearman's correlation analysis indicated a statistically significant correlation between shoulder and neck muscle pains and sense of vocal effort during rehearsals and tiredness after rehearsals ($r_s = 0.181, P = 0.024$; $r_s = 0.218, P = 0.006$); also a statistically significant association between lower back pain and vocal effort during the rehearsals was found ($r_s = 0.254, P = 0.001$).

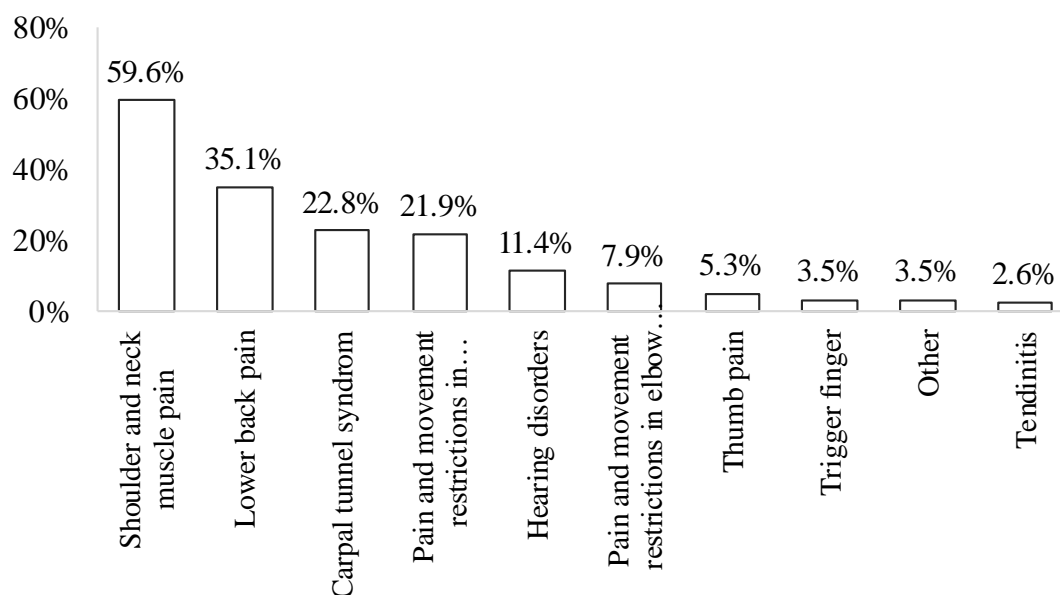


Figure 1. Health problems in conductors

The scores of the Vocal Symptom Scale indicated that 41% of conductors had marked two or more vocal symptoms, which occur weekly or more often and might testify to voice disorders (Simberg, 2004). However, only 19.4% of conductors marked laryngeal diseases in anamnesis (vocal nodules, polyps, phonasthenia, and dysphonia). The mean score of the VHI-10 was 8.6 points (SD = 6.0) in the whole group of respondents, the mean score of the SVHI-10 was 12.2 points (SD = 6.5). A statistically significant strong correlation between the scores of the VSS and VHI-10 ($r_s = 0.471, P < 0.001$) as well as between the scores of the VSS and SVHI-10 ($r_s = 0.448, P < 0.001$) were observed.

Conductor's workload

A conductor's workload assessment included collecting data about the number of rehearsals per week, the number of singers in the choir, and gathering information about the number of concerts a year, since the preparation and performing at concerts involve an increased physical and psychological load. Most respondents (70%) worked as choir or ensemble conductors and teachers at schools; therefore, the mean number of hours per week in the schools was clarified.

Table 3. Workload factors

WORKLOAD FACTORS	M	SD	Min	Max
Choir rehearsals per week (n)	3.3	2.6	1	20
Mean number of choir singers (n)	29.7	12.0	9	84
Number of concerts per year (n)	12.9	12.9	0	80
Pedagogical work per week (h)	15.4	14.0	0	46

Knowledge about voice ergonomics and application of this knowledge in everyday life

Respondents were asked to assess their knowledge about voice ergonomics by using four options – “very good”, “almost good”, “almost poor”, “very poor”. The assessment received from 7.7% of respondents was “very good”, from 54.2% respondents – “almost good”, from 33.5% respondents – “almost poor”, but 4.5% of respondents assessed their knowledge about voice ergonomics as “very poor”. Though female knowledge about voice ergonomics was better than male, statistically significant differences between the gender groups were not observed ($Z = -0.6$, $P = 0.548$, Mann-Whitney test). In assessing the application of knowledge relating to voice ergonomics in everyday situations, 18.1% of respondents responded that they did not use voice ergonomics knowledge in everyday life, 36.8% of respondents answered that they occasionally used it, but 45.2% stated that they used knowledge about voice ergonomics in everyday situations. Similarly, to the previous results, statistically significant differences between males and females concerning the use of knowledge about ergonomics were not observed ($Z = -1.194$, $P = 0.233$, Mann-Whitney test).

Noise and reverberation in rehearsal rooms

Respondents answered questions concerning the noise in rehearsal rooms. Fifty-two per cent of conductors maintained that the noise coming from different engineering-technical systems (ventilation, air-conditioners, and lamps) was heard in rehearsal rooms. In addition, the noise coming from outside was mentioned by 62.6% of conductors, saying that the noise coming from traffic, adjoining rooms or corridors was the most frequent one. Thirty-one per cent of respondents had noticed reverberation in rehearsal premises.

Air quality in rehearsal rooms

The respondents' highlighted three principal factors related to inner air quality: dry air during the heating season (63.9%); the presence of objects gathering dust – long curtains of the hall, hangings (36.8%); too high or too low temperature in the rehearsal premises (25.2%). Nineteen per cent of respondents mentioned heavy and stuffy air in the rehearsal premises, but 17% noted the presence of draughts. A statistically significant correlation was found between objects gathering dust in the rehearsal rooms and throat clearing and coughing when speaking ($r_s = 0.227$, $P = 0.005$).

Body and head posture

However, most of the respondents (81.3%) evaluated their body posture during the rehearsal as being comfortable. During the rehearsal, conductors were usually in an upright position (75%). Forty-two per cent of conductors noted that their bodies are relaxed during conducting, but 54% of conductors indicated strain and tension in shoulders, hands, or legs. The correct body posture during conducting – a stable standing position on both feet, distributing the weight equally between both feet was observed in

48% of conductors. The survey results demonstrated that such body positions as an extension of neck muscles, keeping head in a turned position and tensed and risen shoulders, which are harmful for voice production, were frequent in the practice of the conductors.

Vocal load during the rehearsal

The responses from the questionnaire revealed that 65.8% of respondents considered that they speak in a loud voice, but 22.6% stated that they speak in a loud voice even when not working with the choir, for 9% of conductors it was challenging to speak in a soft voice. The participants were asked to assess the average loudness of their voice during the rehearsal by applying the five-point Likert scale where the minimal value corresponded to a relaxed and quiet voice and the maximal value to a very loud voice. The mean loudness of voice during the rehearsal appeared to be 3.36 points (SD = 0.63). In the same way, by using the Likert scale, the vocal effort during the rehearsal was assessed (minimal value – not at all, maximal value – very much). The conductors evaluated the mean vocal effort with 3.53 points (SD = 0.98). A statistically significant moderate correlation between the voice loudness and vocal effort during rehearsals was found ($r_s = 0.376$, $P < 0.001$) (see Table 4). Previous studies have shown that voice loudness is related to activity noise; therefore, the respondents were asked to evaluate the activity noise during rehearsals using a five-point scale where the maximal value corresponded to very loud noise and minimal to a very silent. The activity noise created by choir singers was scored as 2.39 points (SD = 0.8). A statistically significant weak correlation between the activity noise during rehearsals and conductors' voice loudness ($r_s = 0.269$, $P = 0.001$), as well as a moderate correlation between the activity noise and vocal effort ($r_s = 0.339$, $P < 0.001$), was found. (See table 4).

The second component characterising a vocal load was the voice using duration. The excessive and continuous voice use during the day was mentioned by 58.7% of conductors. Pauses, allowing the voice to have a rest, were taken by 78.7% of conductors. The data obtained showed that the average duration of rehearsals was 133 minutes (SD = 32.4). The length of rehearsals was within the range of 60 to 240 minutes. During the rehearsal, the break was made by 64% of conductors.

Stress and fatigue

The participants were asked to evaluate stress during rehearsals and vocal and general fatigue after rehearsals by applying a five-point Likert scale where one point corresponds to the minimal display of the factor, while 5 points – to the maximal expression of the factor. The mean stress assessment score was 2.2 points (SD = 1.06), the mean vocal fatigue score was 3.29 points (SD = 1.10), and the mean assessment score for general fatigue after rehearsal was 3.25 points (SD = 0.98). Spearman's correlation indicated a statistically significant strong correlation between vocal and general fatigue after rehearsals and between vocal fatigue and vocal effort (see Table 4). In addition, the analysis of the data indicated that stress had a significant correlation with vocal and general fatigue, vocal effort, and activity noise during rehearsals (see Table 4).

Table 4. The correlation of stress and fatigue with the voice loudness, vocal effort, and activity noise (Spearman's correlation)

CRITERION	(1)	(2)	(3)	(4)	(5)
Stress during rehearsals (1)					
Vocal fatigue after rehearsals (2)	0.480**				
General fatigue after rehearsals (3)	0.450**	0.570**			
Voice loudness during rehearsals (4)	0.153	0.266**	0.228**		
Vocal effort during rehearsals (5)	0.440**	0.659**	0.379**	0.376**	
Activity noise during rehearsals (6)	0.264**	0.344**	0.144	0.269**	0.399**

** $P \leq 0.001$

The knowledge of voice ergonomics and vocal symptoms

Two respondents' groups were formed based on the Vocal Symptom Scale scores. Conductors with two or more vocal symptoms occurring weekly or more often were included in the voice disorders' group (41%). The voice disorders' group participants had higher scores on the VHI-10 and the SVHI-10 than respondents without self-assessed voice disorders ($Z = -5.8, P < 0.001$; $Z = 5.514, P < 0.01$ Mann-Whitney test).

A Chi-square test showed a significant difference between conductors with and without voice disorders in knowledge about voice ergonomics. A more significant number of conductors with voice disorders indicated their knowledge of voice ergonomics as "very poor" and "almost poor" in contrast to conductors without voice disorders, the majority of whom evaluated their voice ergonomics knowledge as "very good" and "almost good" ($\chi^2 = 6.587, P = 0.01$) (see Fig. 2).

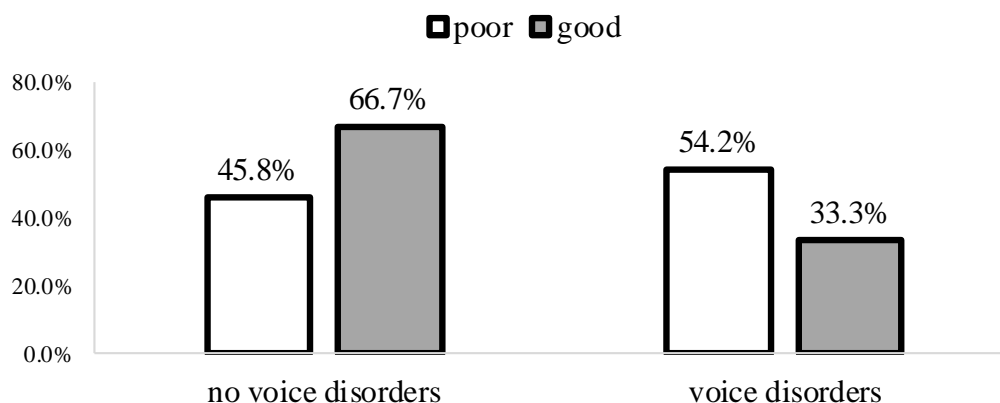


Figure 2. Knowledge of voice ergonomics in conductors with and without voice disorders

Risk factors of voice disorders among conductors

The demographic and voice ergonomics risk factors ($N = 90$) were compared in both respondents' groups using Chi-square test analysis. The results indicated that female conductors had voice disorders more frequently than males ($\chi^2 = 4.229, P = 0.04$). Self-assessed voice disorders were observed in 46.1% of female and 27.5% of males. Table 5 demonstrates factors that were found to have a statistically significant impact on the conductors' voices. The data analysis indicated that self-assessed voice disorders in conductors were related to medical factors, body and head posture during rehearsals, prolonged and excessive voice use, and dust in rehearsal premises. Moreover, we found

that voice disorders were related to the stress ($Z = -4.756, P < 0.001$), to vocal effort ($Z = -5.678, P < 0.001$), and to activity noise during rehearsals ($Z = -3.157, P = 0.002$). Voice disorders were rarer among the conductors who used knowledge of voice ergonomics in daily practice and rested voice during breaks (See Table 5).

Table 5. Factors impacting on voice disorders (Chi-square test)

FACTORS	NO VOICE DISORDERS n (%)	VOICE DISORDERS n (%)	$\chi^2(1)$	P
Laryngeal diseases in anamnesis	10 (33.3)	20 (66.7)	9.882	0.002
Lower back pain	17 (42.5)	23 (57.5)	5.844	0.016
Hearing disorders	4 (30.8)	9 (69.2)	4.570	0.033
Girls' choir conducting	7 (29.2)	17 (70.8)	10.224	0.001
Solo singing	26 (78.8)	7 (21.2)	6.972	0.008
Good knowledge of voice ergonomics	64 (66.7)	32 (33.3)	6.587	0.01
Use of the knowledge of voice ergonomics in daily practice	50 (71.4)	20 (28.6)	9.009	0.011
Interior decoration materials collecting dust	26 (45.6)	31 (54.4)	6.378	0.012
Head tilted forwards	18 (43.9)	23 (56.1)	5.042	0.025
Head in a turned position	26 (46.4)	30 (53.6)	5.455	0.02
Tensed body during conducting	1 (16.7)	5 (83.3)	13.147	0.001
Prolonged and excessive voice using	45 (49.5)	46 (50.5)	7.794	0.005
Breaks during rehearsals	65 (65.0)	35 (35.0)	4.6	0.032

Discussion

The study allowed an insight into the daily life of choir and vocal ensemble conductors and highlighted the problems of vocal health and working conditions in this professional group. Like that of teachers, the conductor's voice quality may be impacted by different risk factors, such as neglecting voice ergonomics, indoor acoustic and air environment factors, and medical psycho-social factors (Trinite, 2017).

Previous studies have shown that an increased vocal load is one of the main factors of voice problems (Behlau et al., 2014; Trinite, 2017; Whitling et al., 2017). An increased vocal load may be caused by the conductors' working schedule, repertoire, and indoor environment where the rehearsals take place. Our study indicated that a considerable number of conductors worked as music teachers or lecturers in schools and universities, choral rehearsals usually took place in the afternoons or evenings, and performances were organised on weekends. Furthermore, the study showed differences in the intensity of conductors' work; for example, the number of rehearsals per week varied from 1 to 20, and some choirs had concerts very often (up to 80 concerts a year). The number of singers in choirs and ensembles was also different – from nine to 84. The diversity of working

conditions leads to the conclusion that the working load of Latvian conductors varies. Our study did not find associations between self-assessed voice disorders and the number of rehearsals, concerts and singers in choir or ensembles. However, associations between voice problems and prolonged and excessive voice use were found and, quite possibly, strongly related to the conductor's duties in the choir and pedagogical work.

One-fifth of respondents maintained that they had laryngeal illnesses diagnosed by otorhinolaryngologists. However, we observed that a considerably larger number of conductors (41%) had two or more vocal symptoms that occurred weekly or more often. Furthermore, the Vocal Symptom Scale scores had a good correlation with the scores of the VHI-10 and the SVHI-10, which implies that vocal symptoms essentially impact speaking and singing voice as well as on individuals' physical and emotional well-being. This tendency is alarming since it shows that voice disorders among conductors have not been adequately studied and identified, and the present minor problems might develop into severe disorders in future.

Neck, shoulder and lower back muscle pains, syndrome of carpal channel and pains in shoulder and elbow joints are common in the conductor's profession, along with sensorineural and conductive auditory disorders (Smith & Sataloff, 2013). Our research revealed that these specific health problems are not unfamiliar to Latvian conductors. The three most frequently mentioned health problems were shoulder and neck muscle pains, lower back pain and syndrome of a carpal channel. Data analysis indicated that illnesses relating to shoulder, elbow or palm problems do not impact voice quality. The number of vocal symptoms was more significant for those conductors whose body posture during conducting was tense, and head position was inappropriate from an ergonomic point of view. A statistically significant correlation between lower back pain and vocal effort during rehearsals and between shoulder muscle pains and vocal fatigue after rehearsal was also identified. Several studies showed that a muscular imbalance caused by a wrong body position inflicts pains in skeletal muscles and affects voice production (Rubin et al., 2006). Our study confirmed these statements - conductors working in non-ergonomic postures for a longer time had complaints about pathological tension in body muscles that inflicted pains. Singing and speaking with poor body and head posture during the rehearsal increase vocal fatigue and increase the vocal effort necessary for achieving the intended result. Thereby, an increased vocal load could be a potential risk factor for voice disorders. Our study indicated that conductors with hearing disorders have a more significant number of vocal symptoms than those without. This finding agrees with Sataloff and Linville's statement that hearing disorders cause voice tension and a louder voice when speaking (2005). Consequently, this is another additional factor creating vocal load and potential risks to vocal health.

Body posture has a vital role in the profession of conductors since choir singing is conducted not only by moving hands but by the whole body. Our study aimed to explore to what extent factors of voice ergonomics are considered in the practice of conductors. However, exploring the causes of identified problems would be another task for future studies. Why do conductors use non-ergonomic body posture? Is it possible to look for the cause in the work environment (location of the choir, stage height, position of the piano) or among psychological and emotional factors since stress can also cause muscle tension in the body?

The analysis of ergonomic factors related to noise and acoustics demonstrated that though the conductors mentioned the noise heard in the room or outside it during the rehearsal, it does not affect the appearance of vocal problems much. These results

partially correspond with the conclusions drawn from the research on voice ergonomic factors among teachers. Like conductors, teachers identified background noise during a lesson, but unlike conductors, the association between noise and voice problems was found in teachers (Trinite, 2017, 2019). We can therefore hypothesise that these differences could be attributed to the fact that when the singers fill the room with the sound of singing, background noises seem insignificant, and the conductor does not perceive them as an obstacle. The research showed that the activity noise, i.e., the noise created by singers during rehearsals, affects the conductor's voice quality. Increased activity noise could occur in song learning when all conductors's attention is given to one voice group, but all others are bored. Following other studies, activity noise is closely related to the number of singers in the room – the more singers, the higher the level of activity noise. In such situations, the Lombard effect is observed, i.e., the conductor's voice becomes louder as the activity noise increases. It is clear that speaking or singing in a noisy environment requires more vocal effort. Such a problem could be eliminated by improving work organisation, i.e., dividing a choir into voice groups and working with each group separately. Such a practice is common in female, male, and mixed choirs, but not always in children's choirs. Conductors of children choirs should find a way how to involve all children to avoid noise-provoking situations. We found that voice disorders were more common in girls' choir conductors. This is probably because the average number of singers in the girls' choirs was higher than in all other choirs ($M = 35.3$, $SD = 16.8$). In addition, the mean score of activity noise during rehearsals was higher in girls' choirs than in other choirs ($M = 2.5$, $SD = 1.0$).

Surprisingly, only 31% of respondents noted the presence of reverberation in the rehearsal rooms. Reverberation enhances music perception and is one of the most critical acoustic criteria for rehearsal rooms and music halls. Although the recognition of reverberation is independent of the existence of any respondent's background in acoustics (Giron et al., 2020), i.e., the assessment of the subjective perception of reverberation can be provided by any user of the room, we consider that conclusions about the acoustics of a rehearsal room and its suitability for choir singing should be based on objective measurements of reverberation. The impact of room acoustics, especially reverberation time, on conductors' vocal load should be investigated further in the future.

The vibratory capacity of vocal folds is directly impacted by the indoor air quality and relative humidity in rehearsal rooms. Dry air in a room increases the concentration of dust, especially if rooms have many dust collecting interior items. We found that conductors who work in dusty rooms more likely had a cough and had more vocal symptoms. These results were in line with other studies stating that a dust concentration in the air is strongly associated with the number of negative vocal symptoms (Simberg et al., 2005). In addition, dust promotes coughing, injuring the mucous membrane of the vocal folds and reducing secretion, causing dryness of the mucous and contributing to inflammation (Marcelino & Oliveira, 2005).

One of the aims of this study was to investigate the knowledge of voice ergonomics in conductors. Most of the respondents (61.9%) stated that their knowledge about voice ergonomics was good. A pretty similar questionnaire study about voice ergonomics in choir singers was carried out in Finland. Results obtained from the survey demonstrated that 55.9% of choir singers had basic knowledge about voice ergonomics (Ravall & Simberg, 2020). Responding to the question concerning using knowledge of voice ergonomics in daily practice, 45% of conductors gave a positive answer; while 37% answered that they do it only occasionally. Though on the whole, conductors had

knowledge about voice ergonomics and implemented this knowledge in daily practice, there was a significant number of conductors (41%) who had two or more vocal symptoms appearing weekly or more often. The study carried out in Finland used the same Vocal Symptom Scale, and only 21% of choir singers had vocal problems (Ravall & Simberg, 2020). So, significantly lower number of voice disorders was found amongst choir singers compared to conductors with almost the same level of knowledge of voice ergonomics. These results can be explained by the fact that singers do not have such extensive and prolonged voice use as conductors do. Although generally, the study showed a statistically significant correlation between a better voice quality (no vocal symptoms) and better knowledge of voice ergonomics, nevertheless in both groups of conductors (with and without voice disorders), many respondents assessed their knowledge about voice ergonomics as being poor. Moreover, frequent vocal symptoms were observed in the group of conductors who scored their knowledge of voice ergonomics as very good and almost good. This observation leads us to conclude that probably the knowledge about voice ergonomics is superficial, and a dearth of understanding does not enhance the use of this knowledge in everyday practice.

Conclusions

Knowledge about voice ergonomics is essential for professions where voice is the principal tool of work. For the choir, a conductor is something more than merely the leader of the collective. He/she is simultaneously a teacher, advisor, guide in the world of music and an inspirer. He/she is the one who demonstrates the model of correct voice production and singing and sees to it that every singer should acquire and follow it. Our research characterised the conductor's working environment and revealed those factors of voice ergonomics that impact the conductor's voice. The research outcomes indicate the fact that knowledge about voice ergonomics needs improving among conductors. Therefore, teaching voice ergonomics should be brought into choir conductors' educational programs, the standard of professions and post-diploma education.

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