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DOES CURRICULUM CHANGE HAVE IMPACT ON STUDENTS? A COMPARATIVE RESEARCH OF FINNISH TEACHER EDUCATION STUDENTS' WILLINGNESS TO TEACH MUSIC

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Abstract

This research focuses on student teachers' willingness to teach music. The base group consists of second-year students at the University of Eastern Finland (UEF) from the years 2015 (n=82, 78% of the students) and 2016 (n=93, 74% of the students). We explore how students' willingness to teach music changed after the curriculum was reshaped in 2015. We focus on students' thoughts about music teaching, challenges in the subject, and the influence of music hobbies. Our earlier research (Mäkinen & Juvonen 2017) showed that 45% of the students were not willing to teach music in future. The first data was collected in 2015, when the subject-based curriculum was in use. The second data was collected in 2016 after changes in curriculum. We compare two curriculum models and their impacts.

This research uses mixed methods and the data consists of closed and open-ended questions and narratives written students. In earlier research we found four music teaching attitude-based groups, which we use also in this research. They were: 1) "Enthusiastic", 2) "Hopeful but qualified" 3) "Doubtful and fearful" 4) "Others". The student teachers have a clear concept of their musical skills. This was measured by their own evaluation.

After the curriculum change, the students understand that they can teach music without being specialists in music. The changes in curriculum have made a strong impact on the students' division into the attitude-based groups.

Keywords: Comparison of attitudes, music orientation, willingness to teach music, music skills

Introduction

There has been a lot of research made about a generalist becoming a skillful music teacher (Greunke 2016; Ballantyne & Packer 2004; Hardgreaves, Welch, Purves & Marshall 2003; Hamann, Baker, McAllister & Bauer 2000; Harrison 2004; Russell-Bowie 2004; Teachout 1997; Hallam, Burnard, Robertson, Saleh, Davies, Rogers & Kokatsaki 2009; Hennessy 2000). In this article we focus on teacher students' willingness to teach music and factors having impact in it. We analyze the influence of several background factors for this (musical self-concept and orientation; self-assessment of own music skills; music hobby; teacher's professional growth and identity), but our most important point of view is comparing the impact of curriculum changes among two groups of students. We explore how the changes in curriculum influence students' attitudes and their conception of music teaching class teacher's characteristics. Usually the impact of curriculum changes is quite low and does not have statistically significant effect on students. Most of the studies are qualitative case studies which cannot show heavy evidence of the impact of curriculum change. (Tshiredo 2013; Passmore 2016; Flores 2005; Sumi 2016; Lorenza 2018; Blackmore & Kandiko 2012; Davis 2009.)

There are some researches which somehow try to open the student teachers' problems and attitude to music teaching. (Schmidt 1998; Sætre 2014; Allen 2011; Welch & Henley

2014.) They all notice same type of matters in the teacher student's experiences about music teaching: Teaching skills, motivation, classroom management, music instrument skills, musical self-concept, general professional skills of a teacher, and the role of music at school.

Teaching music causes considerable anxiety and even fear among teacher students (Mäkinen & Juvonen 2017; Barrett, Zhukov & Welch 2019; Dawn 2019; Hennessy 2017; Henley 2017) Our interests focused on students' willingness to teach music after they become qualified. In Finnish university entrance examinations, there are no tests on music, arts or skills. Research participants come from the Joensuu campus and do not have minor subject studies in music. They have only studied music during their multi-sectoral studies in school subjects. We collected the first data set from second-year students in the spring of 2015. The same data was used in our earlier research (Mäkinen & Juvonen 2017). Questionnaire and students' written narratives on personal attitudes toward music teaching in 2015 and 2016 comprised the comparative research material for this study (Barrett & Stauffer 2009; Clandilin 2006; Connelly & Clandilin 2006; Ollerenshaw & Creswell 2002). The arts and skills were differentiated as individual subjects in the old curriculum. In spring, 2015 the teacher education curricula were renewed to better suit the new national curriculum in Finland. The new teacher education curriculum took effect in the autumn of 2015. It focuses on finding similarities within pedagogy of art and skill subjects.

We collected the second data set in the spring of 2016 from students following the new curriculum. They had completed study modules Basics of pedagogy in art and skill subjects 1 (Taito- ja taideaineiden pedagogiikan perusteet (in Finnish) abbreviation: TATA 1) and Basics of pedagogy in art and skill subjects 2 (Taito- ja taideaineiden pedagogiikan perusteet (in Finnish) abbreviation: TATA 2). In this study we compare students before and after the curriculum change. The teachers did not change between data collection periods.

Background

The new Finnish national curriculum was written in 2014 and was carried out in primary school beginning in 2016 and secondary school in 2017. The new national curriculum was built around nine targets in school subjects. The contents, evaluation and sectors of wide-range learning are built upon them. In music education, the significance of singing, playing musical instruments and listening to music in groups are underlined. The pupils are guided to express their musical experiences through moving, dancing and other ways. Musical invention and improvisation are mentioned as targets already at class levels 1 and 2. Music theory is taught through learning note writing and the signs used in music. Also, the cultural and historical points of view are present together with the significance of music for human well-being. Setting personal targets and reaching for them are learned beginning in 3rd grade. From these targets, the contents are formed for each class. The evaluation can be given written to the 8th grade. The councils decide where numeral evaluation starts.

Compared with the old curriculum (OPS2004), there are two areas (in curriculum 2014) in music that were not present in the earlier: musical invention (improvisation) and music and movement. Otherwise, the contents are quite similar to the earlier curriculum. The children are guided to develop their voice by singing and finding rhythm originating from

their own body through listening and later by using chord and melody instruments. The well-being aspect of music is mentioned at several class levels. The repertoire is selected versatilely from different music styles starting from Finnish national music culture and traditions. More functionality and music playing are underlined as the ways of working. Music technology arrived as a newcomer in the curriculum and it is also in the content of the subject. The evaluation underlines self-reflection and peer evaluation. The teacher is guided to a positive and respective direction in the evaluation (OPS2014). In Finland a class teacher usually teaches all subjects for his/her own class.

Welch and Henley (2014) write about teacher students' reasons for being afraid to teach music. Although many class teachers enjoy music, they often seem to think that music is a "specialist" subject that requires advanced competence on a musical instrument. Underlying this perception is a lack of confidence in their own musicianship, also linked to the mistaken belief that innate human musicality is unevenly distributed in the general population, and a lack of knowledge of how to bring music into their everyday teaching. These are same problems also we have jumped into.

If the teachers do not trust their own musical skills and have an anxious attitude, the teaching goals are difficult to reach (Hallam, Burnard, Robertson Saleh, Davies, Rogers & Kokatsaki 2009; Hennessy 2000; Holden & Button 2006; Russell-Bowie 2011). Although the technology may offer some help, the teaching of, for instance, the "kantele" using merely a computer, CD-record or iPad, is impossible.

In the renewed UEF teacher education curriculum, the study modules were divided in a new way in arts and skills. Each study module forms wholeness, where pedagogical similarities are searched for in arts and skills. The studies begin with the module TATA 1, which all students participate. The students are challenged to find pedagogical models suitable for learning arts and skills. The study module offers 5 credits and it can also be carried out through distance learning. The TATA 1 module includes 135 lessons, of which 34 in major groups and 6 in minor groups including 95 hours of independent work. During the module, a written portfolio forms the basis for evaluations. The system of evaluation is to pass/fail (UEF, Syllabus 2014–2015).

The studies differentiate into school subjects in TATA 2. The study module is 8 credits and it includes the contents of all art and skill subjects. The music studies contain 2 hours in the major group and 30 hours in the minor group. The students learn to sing and get to know school songs, percussion and school instruments, band instruments, general music knowledge and music technology. Individual teaching contains 8 lessons in piano playing. Music lessons for school instruments like the guitar or other school instruments are taught in minor groups. The student selects one module. The student's own work comprises 22 hours and the course is evaluated on a scale of 1–5 (average of all four subjects). Music studies continue in the TATA 3 module, which includes 2 hours of major group teaching, 24 hours of minor group teaching and 28 hours of independent work. Evaluations are based on a small teaching demonstration using a scale of 1–5. Individual instrument teaching contains seven hours of teaching. There are also optional courses in Voice training (5 credits) and Music technology (5 credits) which can be chosen in 3rd year of studies.

In the first part of the research (2015 data), the art and skill subjects were taught separately. The students received 6 credits including 96 hours of contact teaching. The amount of the student's own work was 66 hours. It was obligatory to choose one instrument course: 16 piano lessons, 16 hours group guitar playing or 16 hours playing in the school

orchestra. The school instruments were played in lessons where music didactics and pedagogy were taught. The courses “The Basics of Music Pedagogy” (1 credit) and “Me and Music” (1 credit) were obligatory. Also, the students selected optional courses for three credits: “Listening Education”, “Voice Training”, “Leading a School Choir”, “Music Technology”, “Music Theory” and “Music History” or “Playing Band Instruments”. (see Table 1). (Interview 16th February 2015, Hulmi). (UEF, Syllabus 2013–2014.)

TABLE 1. The differences in curricula contact teaching between 2015 and 2016

The way of teaching	Curriculum 2015 Hours of contact teaching	Curriculum 2016 Hours of contact teaching
Contact teaching	96h	98h of which 40h common with all arts and skills
Own work	66h	145h
Instrument teaching	16h	15h

Musical self-concept and musical orientation

Musical self-concept (Greenberg 1970; Spychiger, Gruber & Olbertz 2009; Demorest, Kelley & Pfordresher 2017) and musical orientation (Browning 2017; Kratus 1991; Juvonen 2000) are important background concepts in this research. Teacher’s professional development (Hargreaves, Welch, Purves & Marshall 2003; Garet, Porter, Desimone, Birman & Yoon 2001; Makovec 2018) and the development of teacher identity (Beijaard, Meijer & Verloop 2003; Rus, Tomsa, Apostol & Rebegea 2013; O’Connor 2008; Hsieh 2010) play also an important role. Juvonen and Anttila (2003, 13) state that only when the music attitude is positive, musical skills can be further developed. This means that the person has a positive orientation to musical operations. To be able to teach music, a teacher should believe to be sufficiently skillful in dealing with music. Music orientation is built through musical activities and experiences in individual’s homes, dealing with peers, and in the kindergartens and schools (Juvonen 2000; Russell-Bowie, McInerney & Yeung 2001, 7–8; deWries 2011; Hallam et al. 2009; Hash 2009).

Musical orientation may also be neutral or negative by nature. In these cases, musical activities in childhood have been rare, causing a low level of musical understanding which also lead to low musical self-concept, which shows in music orientation. Because of the lack in musical experiences, singing and playing musical instruments, music has gained only a little significance in their life. When getting encouraging experiences from music, a neutral or negative music orientation will gradually turn positive. This means a change in attitude toward music. In such cases it is possible to start playing the music instrument, which means that music has become a hobby. This means that passive music orientation becomes active (Anttila & Juvonen 2008, 12–13). Here is the chance where teacher education eagerly wants to be engaged. The students in teacher education are selected in entrance examination according to their motivation and they are expected to be eager to develop their skills in all weak subjects. One of them quite often happens to be music.

Because of the low amount of lessons in all arts and skills in teacher education, students’ earlier hobbies and interests are very important. Earlier music studies have a big role in developing music teaching skills. Students have developed music orientation, which reflects their conceptions of musical activities (Juvonen 2008, 13; Juvonen 2000). When music orientation is positive, the attitude towards music is open and musical competence can develop further (Juvonen 2008; Juvonen 2000). This requires a belief in one’s own musical abilities, at least on some level. When students have positive experiences and

success in music, musical orientation becomes more positive (Juvonen 2008,13; Anttila & Juvonen 2008; Cabedo-Mas & Diaz-Cómez 2012).

Childhood and school experiences play an important role in a music relationship. They form the basis of music orientation, musical self-concept and musical worldview (Juvonen 2008,11; Sava 1993; Barton 2018). The students' musical self-concept, conception of their own musical competence and the structure of musical talent have a strong impact on the music relationship. Students' attitudes, fears and expectations concerning their willingness to teach music is tightly connected with these conceptions.

The teacher's identity and professional growth

Becoming a teacher means changes in students' knowledge, mental images and behavior. Students' conceptions, observations and beliefs are clarified and become visible as their teaching skills develop. Their professional competence strengthens with theoretical studies and practice study modules as the students find their own personal ways of teaching. The cognitive processes develop simultaneously with the growth of professional self-confidence (Kagan 1992; Kramarski & Michalsky 2009; Väisänen & Silkelä 2000).

The intrinsic development of expertise means professional growth where the individual's professional self-concept advances and widens. Critical self-reflection leads to changing attitudes. This can be seen in varying occasions throughout the developing of didactic-pedagogical skills (Shandomo 2010; Saric & Steh 2017; Väisänen & Silkelä 2000; Väisänen 2002, 2003). Becoming a teacher means acquiring and building the operating theories and professional knowledge and skills needed for everyday work. The technical skills require the creation of one's own vision of education (Gay & Kirkland 2003; Väisänen & Silkelä 2000; Väisänen 2002, 2003). Teacher expertise can be observed both as a cognitive question and content. It is a socially building phenomenon, which refers to forms of interaction and intercourse, which are used in building competence. A teacher's competence is understood extensively, and not only as the development of knowledge and separate skills needed in a teacher's everyday work (Hogan & Rabinowitz 2009; Shulman 2000; deWith 2015; Väisänen & Silkelä 2000, 19–21; Väisänen 2002, 2003).

Personality and self-concept form the foundation for teaching. A very important role among other factors in teacher's professional growth processes is self-reflection (Klassen & Tze 2014; Väisänen & Silkelä 2000, 22–28; Hall 1999). One must recognize their own values, attitudes and beliefs to reach an advanced teacher identity (Väisänen & Silkelä 2000, 22–28; Hall 1999). The objective of teacher education is to generate a personal, individual pedagogical approach. This should be constructed on comprehensive theoretical and professional know-how. One's beliefs and professional practices should all the time be under reflection. (Väisänen & Silkelä 2000, 35–40; Fadjukoff 2009). To build a teacher identity means a life-long progression where the teacher education only offers track, awareness and compulsion. Personality is the most important element in a teacher's work (Väisänen & Silkelä 2000, 23–27; Fadjukoff 2009).

A teacher's professional growth is divided into cognitive, social and personal development. The development of teacher-personality means understanding one's self and finding a personal style of teaching. Future teachers must have strong, realistic self-esteem. Through building the teacher identity, students learn to understand themselves and others. Similarly, their own professional identity and professional roles are built (Väisänen & Silkelä 2000, 23–27; Saastamoinen 2006; Väisänen 2002, 2003). In the modern school, teach-

ers need sensitivity to change, the tolerance of uncertainty and technological skills. Teachers need good human relation skills, a desire and ability to surrender in the action. Creativity and good all-round education are needed together with decision-making skills (Väisänen & Silkelä 2000, 22–28). Naturally, teacher education is not able to produce complete teachers, but in different lectures, practice study modules, conversations and in the students' own narratives, it can open new points of view (Väisänen & Silkelä 2000, 22–28; Fadjukoff 2009).

What are the factors behind music teaching?

The attitudes, values and fears are behind the student teacher's motivation in music teaching. A person is protected from danger by fear, which is a rudimentary human emotion. It helps the individual stay safe, alive and survive. (André 2004, 101–106). Fear belongs to social phenomena, it is a part of individual's social life and has multiple meanings. The fear reaction becomes controlled by will through experiences and the reaction slows. The beliefs and knowledge about opportunities to avoid danger by different behavior have effect on the reaction. When uncontrolled fear appears, it can change an individual's actions in an irrational way. In this article we handle fear from music teaching point of view.

Internalized selection facility which feels important and it is strived for is a permanent value. Values are modified through education and experiences. Values born when there are requirements to be fulfilled, they can help in reaching some target. Attitudes and behavior are controlled by values. (Rokeach 1973, 18–19). Rightness, persistence, honesty, nature and human relationships or health can represent absolute values. Some other targets are reached for by instrumental values. A good example of instrumental value is money. It is possible that an instrumental value changes to become an absolute value. This change is not controlled by a moral value or a virtue.

The values are also connected to motivation: if an individual appreciates music teaching and sees it valuable, he/she is probably more motivated in music teaching than those who have different values.

The Aim of the Study

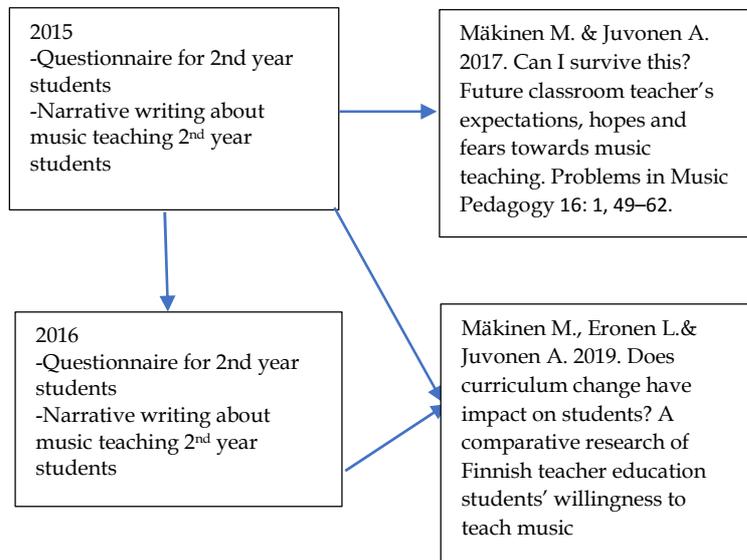
The target of this research is to open teacher education students' attitudes to music as a school subject – the fears and expectations associated with teaching music in a future teacher's work. This research investigates how the prejudices, fears, expectations and conceptions of the students' own musical talent differed between the year 2015 and 2016 (Mäkinen & Juvonen 2017). Between these measurements, a radical change was made in the teacher education curriculum of the arts and skill subjects. We explore if there is a connection between the student's self-assessments of musical skills and willingness to teach music and if this differs between the two data sets. We explore the willingness of former music hobbyists and non-hobbyists to music teaching in their future profession. All this is compared between students from the year 2015 (obeying the old curriculum) and students from the year 2016 (obeying the new curriculum).

The research questions

1. What kind of attitude do the students have in music teaching?
2. How does the former musical hobby show in the attitudes of the students?

3. How does the change in the teacher education's curriculum impact the results between the two data sets (2015 and 2016)?

The research design



Picture 1. The Research design

Methods and Materials

In this research we use both qualitative and quantitative methods in data analyzing, the method can be called Mixed method. Choosing the methods was based on research questions. At first, we survey a large number of respondents with an e-questionnaire, then follow up with narratives which the respondents write to obtain their specific language and voices about the topic. In this research, the advantages of collecting both closed-ended quantitative data and open-ended qualitative data prove advantageous to best understand a research problem. (Creswell & Creswell 2017.)

Because we explored values, attitudes and musical self-concept, we chose to use a qualitative method side by side with quantitative method because emotional phenomena and experiences are difficult to be measured with only quantitative measures. The qualitative methods target to describe a phenomenon, to understand selected operations or they offer a theoretic explanation of the research target (Eskola & Suoranta 2005, 61; Guba & Lincoln 1994). Our method is inductive as we research the data piece by piece and from various viewpoints. In addition, quantitative approach is used in certain areas. They are used in explaining the differences in comparison between the two quantitative data from the questionnaires. We also quantified the qualitative data through analyzing it by two researchers separately and forming the quantitative classification (Dasgupta & Lahiri 1992; Chi 1997).

Perttula (1995a, 41; 1995b) considers qualitative methods appropriate for the investigation of matters concerning consciousness. These phenomena exist as meanings in the human beings' experienced world. Teacher students' views about their musical abilities and music teaching skills are subjective and the consequences build on individual experiences. The challenges in the qualitative part of the research are in various interpretations. Because in the narratives free language was used, the categorization was done using content

analyses. Arguments and metaphors were picked from the narratives and used in choosing the categories. Next, we showed the thoughts of the students as numbers in the categorization. Using a direct questionnaire, we would have lost the students' own self-reflection. When exploring attitudes, hopes and expectations, a mere number value cannot describe human thinking. The quantification in this research supports the qualitative data by making the interpretation easier. The grouping of men and women and having a music hobby or not, also helped in the work. (Dasgupta & Lahiri 1992; Chi 1997.)

The qualitative research is subjective, which is its weakness, too. The interpretation of our data is done as openly as possible. We start with data analysis based on the texts and analysis originating in data: there is not any hypothesis stated and we have recognized our own subjective viewpoints. (Eskola & Suoranta, 2005, 14–20). We identify our own presumptions and their impact on the analyzing work, which raises the objectivity of our research.

The data

Our research data consisted of questionnaires and narratives written by second-year students from the UEF Joensuu Campus in the spring of 2015 (N=82) and in the spring of 2016 (N=93) (See Picture 1). The results do not describe the situation throughout Finland. The data reliability among the students on the UEF Joensuu Campus is high, thanks to the high percentage of respondents from both 2015 (78%) and 2016 (74%). The criteria of our data are not only the quantity of the data, but also the coverage of the conceptualization (Eskola & Suoranta 1998, 15–18).

The answers were examined from several points of view. The gender in our data did not have a significant connection to the willingness to teach music. The most important factor, still, is activity in the field of music; we call it a music hobby although the definition of a hobby is not an easy task. In this, we trusted in the students' own judgement. We used an age categorization divided into a five-year difference in our comparison. Age was not shown to significantly impact our comparisons, probably because most of the respondents come from the age group 20–25.

Students' own rating of their musical abilities was described with an average from eight questions answered by the students. The variation was from one to five, number one meaning the worst skills and number five meaning the best skills. These questions included several different elements of musical skills. The areas estimated were: singing, instrument skills, rhythms, music style knowledge, notation, composing, dancing and moving, enjoying music.

These questions aimed to get a picture of the students' own conceptions about their abilities in music teaching. According to these answers, a self-assessment of musical skills was counted for each student. It is an arithmetic average based on the students' own thoughts. The self-assessment values were then classified: 5–4 "very high musical skills", 4–3 "quite high musical skills", 3–2 "average musical skills" and 2–1 "poor musical skills". Each category contains its lower bound bounds.

The other data set was collected using narratives written by students. In addition, their background information was collected at the same time (music hobby, interests, earlier music studies, etc.). There was also one open-ended question where the respondents could write their own ideas about music teaching and learning. The idea was to explore the students' feelings, thoughts, fears and expectations about music teaching.

Ethical points of view

The students were free to decide if they wanted to participate in this research. The research and its' results did not have any connection to the marks from any music courses in teacher education. The students did not receive any consideration for participating in the research. All their writings and answers were handled anonymous, and it was impossible to recognize any of the respondents from our article.

Description of the respondent groups

There were 7 (9%) men and 66 (81 %) women in the 2015 data. Of the respondents, 9 (11%) did not wish to indicate their gender. The second data from the year 2016 included 19 (20 %) men and 63 (68%) women and 11 (12%) did not indicate their gender.

The students were asked: "Do you have music as a hobby?" The question allowed them to decide if they have a music hobby. Having music as a hobby means that they have an active music orientation. In the data from 2015, 40 (49%) of respondents reported that they had a music hobby (2 men, 35 women, 3 gender not known). In the data from 2016, 43 (46%) responded that they have a music hobby (9 men, 28 women, 6 gender not known). Those respondents without a music hobby were in the state of passive musical orientation. The students with a music hobby were developing their musical skills, playing some instrument and gaining knowledge about music theory, history and other dimensions. This also impacts their musical worldview, which manifests as musical taste.

Table 2. Student's self-assessments of their skills in music

Area	Mean 2015	Std. Deviation 2015	Mean 2016	Std. Deviation 2016
Singing	3.37	0.90	3.24	0.89
Instrument playing	3.13	0.94	3.22	0.93
Rhythm	3.48	0.91	3.35	0.96
Styles	3.52	0.80	3.73	0.80
Notification	3.34	1.06	3.35	1.17
Melody invention	2.80	1.14	3.00	1.13
Music movement	3.80	0.90	3.74	0.95
Enjoyment	4.62	0.60	4.59	0.68
Mean of self-assessments of musical skills	3.50	0.60	3.53	0.64

The results

We used text analysis for the written narratives' analysis. In analyzing the results, when classifying the respondents according to their willingness to teach music, we used the same scale as was used in an earlier study (Mäkinen & Juvonen 2016). The qualitative analysis of the written narratives offered four classes (the same as in the research in 2016) of teacher education students considering music teaching. We recognized the respondent's attitude to teaching music from their sentences which were found in the narratives. In most of the written stories it was easy to recognize the writer's attitude to music teaching.

They were: "Enthusiastic"

I'm enthusiastic about music and want to try everything.

I'm interested, and I am ready to work hard to learn.
I am excited, and it shows in my teaching and it drives pupils to become interested.
 "Hopeful but qualified"
I'm not musically talented, but the lack of skills can be compensated by enthusiasm through experimental touch.
One can offer funny and good music lessons without an earlier musical hobby.
Although I feel uncertain, I can compensate with my zest.
 "Doubtful and fearful"
I am never able to give a strong musical performance.
My trust in my musical skills is poor.
I fear music teaching.
 "Others" (Their narratives did not show what they think about music teaching)

ing)

In the following chapter, we present the results of two data sets from the years 2015 and 2016 (see Table 3 and Table 4).

Table 3. Respondents, their self-assessments of musical skills, and having music as a hobby. (Data from 2015)

The number of respondents	Men	Women	Gender unknown	Music as a hobby				%	Self-assessment of musical talent when music is a hobby	Not music as a hobby				%	Self-assessment of musical talent when music not as a hobby
				All known	M	F	Un			All Unknown	M	F	Un		
82	7 (9%)	66 (80%)	9 (11%)	40	2	35	3	49%	3,0-4.8	42	5	31	6	51%	2.1-4.0
"Enthusiastic"				11 persons				28%	3.4-4.5	7 persons				17%	3.3-3.8
"Hopeful but qualified"				8 persons				20%	3.3-4.8	15 persons				36%	2.1-4.0
"Doubtful and fearful"				18 persons				45%	3.0-4.3	19 persons				45%	2.1-3.5
"Others"				3 persons				7%	3.6-4.0	1 person				2%	3.0

The results from the year 2015 show the high level of students with a music hobby (45 %) in the group "Doubtful and fearful", which indicates their uncertainty about music teaching. Their self-assessment of musical talent was between 3.0 and 4.3 meaning that they believe they have quite a lot of musical abilities and skills. It is difficult to explain why students with a music hobby and good belief in their own musical skills are not willing to teach music at school. The reason may be found in their conception of music teaching, or lack of pedagogical knowledge about music education. In the group of students without a music hobby, the amount in "Doubtful and fearful" students were equal (45%), but their self-assessment of musical talent was lower, between 2.1 and 3.5. Still, it is nice to notice that in the group "Hopeful but qualified" there are many students without a music hobby (36%). This is clearly more than in the other group (20%). This is strange, because the self-assessment of musical talent is higher among those who have a music hobby (3.3-4.8) than among those who do not have a music hobby (2.1-4.0).

Table 4. Respondents, their self-assessments of musical skills, and having music as a hobby. (Data from 2016)

The number of respondents	Men	Women	Gender unknown	Music as a hobby	%	Self-assessment of musical talent	Not music as a hobby	%	Self-assessment of musical
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				All known					when music is a hobby	All Unknown					talent when music not as a hobby
				M	F	Un				M	F				
93	19 (20%)	63 (68%)	11 (12%)	43	9	28	6	46%	3.0-4.9	50	10	35	5	54%	1.6-4.4
"Enthusiastic"				20 persons				47%	3.3-4.9	3 persons				6%	2.3-3.6
"Hopeful but qualified"				17 persons				40%	3.3-3.8	29 persons				58%	2.6-4.4
"Doubtful and fearful"				4 persons				9%	3.5-4.0	18 persons				36%	1.6-3.6
"Others"				2 persons				4%	4.0-4.3	-				-	-

Compared with the first data, data from the year 2016 shows a sharp drop in the number of students with a music hobby in the group "Doubtful and fearful" (9%) compared to 45% in the data from 2015. The same trend also occurs among students with no music hobby: there are less (36%) students in the "Doubtful and fearful" group than in the earlier data (45%). It seems that the changes in the curriculum have caused this big jump toward better willingness to teach music. This trend might be caused through building better pedagogical approaches or building better musical orientation and self-confidence for the students. The teachers were the same for both student groups, groups, so the cause is not likely related to the teachers.

The quantitative testing of the data

We ran some quantitative testing to find out reasons for the notable change that occurred after the changes in curricula. The first test was a cross-tabulation between the two respondent groups about the willingness to teach music (TEST 1). The first test showed a statistically significant difference between the two respondent groups in the willingness to teach music. There were more "Hopeful but qualified" students in the data from 2016, and at the same time less "Doubtful and fearful" respondents. Cohen's (1988) suggestions for phi are generally 0.100 (small), 0.300 (medium), and 0.500 (large), which means that the effect size ($\phi=0.257$) was close to medium.

Next, we tested if the change was based on the difference between the self-assessment of musical talent with the Mann-Whitney test (TEST 2). The Mann-Whitney test was used because the factor "willingness to teach music" does not show a normal distribution. The test showed that the self-assessment was not the reason for the change in the results. After this, we tested if the difference in gender had caused the change in the results with cross-tabulation, but it showed that the differences in number of students in two genders were not the reason for the change in results (TEST 3). The next test (TEST 4) showed a statistically significant connection between having a music hobby and belonging to the group "Enthusiastic" in the data from 2016, and the effect size ($\phi=0.531$) was large (See table 5).

Table 5. Testing the data.

Result	Test (result)	Background information
There is a significant difference between the two respondent groups in willingness to teach music	$\chi^2(2) = 11.16, p = .004, \phi = 0.257$	TEST 1
The gender distribution between the two respondent groups was not a statistically significant difference	$\chi^2(2) = 5.137, p = .077$	TEST 3
There was not a significant difference between the two respondent groups in the self-assessment of musical talent	Mann-Whitney test ($U=3719.5, p=.779$)	TEST 2 Musical self-assessment was built to form a summary-factor ($\alpha=.820$)

Having a music hobby has a significant connection ($p < .001$) in being in the group "Enthusiastic" in the 2016 data	($\chi^2(3) = 26.226, p < .001, phi = 0.531$)	TEST 4
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Conclusions

Teacher education students at UEF are quite active in music hobbies. In the data from 2015 there were 49%, and in 2016 46%, of students with the music hobby, which means that their musical orientation was positive and active. They have the potential to become teachers who will eagerly teach music. Still, the basic idea in Finland is that all teachers can teach every subject. Earlier, it was usual for students to only specialize in their comfort zone, choosing their strongest subjects. The renewed curriculum seems to encourage students to step out of their comfort zone more often to gain more self-confidence in their general teacher's professional characteristics, which helps them also to teach music without especially developed musical skills. The students with a positive attitude and willingness to learn missing skills will be able to teach music nicely when qualified as teachers.

A little more than half of the students (51% and 56%) were in a passive mode concerning music orientation. Yet, this doesn't mean that their musical orientation would be negative. Only those students who had developed a belief that they were unmusical will probably never teach music at school. It is difficult to change this belief during teacher education, because their attitudes toward music learning and values are not positive. Still, the curriculum renovation changed the situation significantly: in 2015, 45% of all students would probably never teach music (almost half of them had a music hobby), but in 2016 the amount was only 24%. The biggest change occurred on the level of attitudes and values, and most of all in students with a music hobby. The new curriculum succeeds in showing that it is possible to give good music lessons without being especially skilled in all musical areas. This means that the students are on a path toward building a professional way of thinking as they give up their earlier thoughts about their own musical abilities.

Having a music hobby has a significant connection ($p < .001$) to being in the group "Enthusiastic" in the 2016 data.

I feel music is a welcome variety in teaching. Music lessons have always been pleasant for me, I have been singing in a choir and I feel I am good at music.

I can play the piano somehow and I eagerly want to try my skills. My strength is determination...

In the data from 2015, this connection did not exist, suggesting that the renewed curriculum increases willingness to teach music among students with a music hobby. This is the right direction because music hobbyists have better skills already before starting the education in instrument playing and singing compared with students without a music hobby. In the data from 2016 there was also a connection between students without a music hobby and being in the group "Doubtful and fearful".

My confidence in my own musical skills is weak...

My musical skills are poor and my singing voice is pitiful...

My lack of musical skills frightens me and I don't have any strengths in areas of music...

The group "Doubtful and fearful" in the 2015 data represents a certain kind of thinking: they believe that they don't have musical talent, and that is the explanation for being afraid of music teaching. They don't have an eagerness to learn music and they believe that they might just barely survive if forced to teach music. The members of this group

have much earlier jumped to the conclusion that they have no musical talent and are un-musical.

I feel I am a bad musician compared with the ideal picture...

I will probably never teach music...

Everything in music frightens me because I am not musical.

The group "Hopeful but qualified" in the 2016 data believe that although their abilities and skills are not good, they still can give good music lessons. The positive attitude shows clearly although they seem to believe they do not have musical abilities. This group seems quite satisfied with music studies in teacher training. This group believes in getting by with quite low skill levels, because they have found self-assurance. Clearly, many have stepped away from the group "Doubtful and fearful" into the group "Hopeful but qualified". This is the biggest change between the two measurements, and it shows the way toward developing professional thinking.

I am not especially musical, but the lack of skills can be compensated with enthusiasm and a phenomenal touch.

I feel uncertain, but my eagerness beats the uncertainty.

I feel a little precarious about applying theory to practice...

The results show that the eagerness to teach music raised significantly after the curriculum was renewed. This may be caused by the change in the students' conceptions about teaching music. The new curriculum focuses more on the ability to teach arts and skills (including music) although the teacher does not have excellent skills in piano playing, music theory or other specific areas. The new curriculum has clearly lifted the students' self-concept in music. Professional development was encouraged better in the new curriculum compared with the old one.

Music teaching is challenging, but I will survive...

Music is not my strongest area, but I'll do my best.

There are challenges in handling big groups of pupils and keeping them peaceful, but since I am an adult, I will handle it.

The music courses were taught by the same teachers during the measurements, so the teachers have not likely caused the changes in music teaching willingness. On the other hand, the number of students' own work increased in the renewed curriculum from 66 to 145 hours, which may be one reason for the change. The curriculum change did not make a big difference in the amount of contact lessons, except that 40 hours were changed from individual subjects to major group teaching. In the old curriculum, these lessons were subject-bound demonstrations.

The renewed curriculum offers fewer opportunities for students to choose courses, but this did not affect the attitudes. It may also be that the students in the later measurement might have taken better advantage of electric devices like iPads, etc., compared with the earlier measurement. Also, the amount of instrument teaching remained almost the same and it did not seem to have any impact. Both student groups had not made their practicing studies, so this likely did not impact the results. Our samples were rather big (82 and 93), making the possibility of accidental change quite small.

It may be that the teachers have consolidated their teaching, making it easier for the students to absorb. Also, the big idea of finding common principles in teaching art and skill subjects may be one reason for the better results. Maybe the students have realized that the arts and skills can be taught without being a virtuoso in skills. The other art and skill subjects also offer help in music teaching.

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