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# Student Teachers' Guided Autonomous Learning: Challenges and Possibilities in Music Education

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## Abstract

This study focuses on connecting student teachers' formal and autonomous learning to solidify their music education paths. The data were collected through observations, interviews and student teachers' questionnaire responses. The study seeks a new implementation to support processes enabling student teachers to teach music in grades 1 to 6. The findings confirm those of previous research on the diversity of student teachers' knowledge and abilities. Additionally, the paper presents an instruction model for integrated music education. The model's core ideas are applicable to other subjects which require both training skills and understanding about the concepts essential in the phenomenon discussed.

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## 1. Introduction

This investigation focuses on class-teacher education in Finland where one challenge is how student teachers learn to teach various subjects in basic education. Music is one of the most challenging subjects because of its limited compulsory lessons in general education. Additionally, music as a subject to teach and learn in basic education requires a lot of knowledge about music as a phenomenon and skills in singing and playing, for example (see

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Finnish National Board of Education (FNBE), 2014). Music studies on class-teacher education consist of both face-to-face learning situations and autonomous training periods. The major issue involves designing how these periods should be implemented, especially guided. The student teachers' previous experiences and possible studies outside formal education should also be exploited in terms of their construction about their path as upcoming music teachers at the lower levels of education. Krokfors et al. (2006) have studied some student teachers' parallel use of their work as teachers in training and their studies in the teacher education programme. In this regard, the research question of this paper is how students' autonomous training is guided and connected with learning during contact lessons. The findings in the current study support Krokfors et al.'s (2006) findings to some extent, specifically in addressing student teachers' diversity in transforming the knowledge they acquired in daily teacher practices to benefit their studies and vice versa. Plenty of research has been undertaken about blended learning and informal and non-formal learning, which are defined in the next section (e.g., Bonk & Graham, 2012; Eshach, 2007; Kerres & de Witt, 2003; Watson, 2008). However, no in-depth studies have been conducted on teacher educators' ways of guiding student teachers to relate their previously achieved competence to their knowledge and skills learnt during the academic courses in contact and autonomous learning periods. The current study focuses on describing four teacher educators' (the authors') experiences and aspirations in connecting student teachers' informal and non-formal knowledge (Eshach, 2007; Werquin, 2008) and skills in music with both contact and autonomous music learning periods, with the use of appropriate guidance.

## 2. Purpose, practices and challenges in music studies in Finnish class-teacher education

Class-teacher education in Finland is organised in universities, which means that the graduates obtain a master's degree qualification in educational sciences. As defined in the Government Decree on University Degrees (Government Decree, 2004), the Finnish class-teacher education shall include multidisciplinary studies in the subjects and cross-curricular themes taught in basic education. The purpose of these studies is to provide student teachers with professional competence in teaching the core subjects included in the basic education core curriculum (Government Decree, 2004). Finland is undertaking a renewal of its core curriculum for basic education. The National Core Curriculum for Basic Education (FNBE, 2014) has been published and will be implemented in August 2016. This means that the education of the incoming student teachers will be based on the new core curriculum. From the music teaching viewpoint, it is clear that as long as pupils in grades 1 to 6 (an important period in children's musical development) are taught by classroom teachers, the teaching will be quite heterogeneous. There are no musical skill requirements for class-teachers, and their studies in the relevant subjects can be very limited. However, in most schools, music teaching is mainly assigned to the teachers who have the best abilities and skills to carry it out. In the future it may be expected that class-teachers will increasingly undertake teaching in grades 7 to 9, too, and subject teachers will handle the lower grades as well. In some ways, this may have a positive impact on music teaching in comprehensive school (Partanen, Juvonen & Ruismäki, 2009).

In the National Core Curriculum for Basic Education (FNBE, 2014), music as a subject can be considered a combination of the following approaches: singing, listening, playing instruments, composing or connecting music with for example physical movement, picture and/or technology. Theoretically, in Finland, class teachers are responsible for each subject during the children's first six school years. Thus, diversity, highlighted in the new core curriculum, requires class teachers to have wide-ranging and in-depth competence in all subjects. However, in the beginning of their studies, many student teachers have erroneous concepts of their abilities in teaching various subjects (Collins & Ting, 2010; Krokfors et al., 2008). As Hietanen and Koironen (2014) and Ruismäki and Tereska (2008) have found out, many student teachers feel and say that they lack any kind of skill or knowledge in music. Their ways of thinking about their weak abilities in music causes uncertainty, even fear of teaching music (Hietanen & Koironen, 2014; Ruismäki & Tereska, 2008). Nonetheless, the authors have noticed that most of the student teachers belittle their real competence in music. In most of the cases, they have not recognised their existing informal and non-formal knowledge and skills in music. In the current study, *formal learning* occurs in situations organised by educational institutions and is based on the objectives defined in the curricula (Eshach, 2007). Werquin

(2008) highlights that formal learning is acquired in formal education, which usually leads to a qualification. *Informal learning* is never organised or planned and may happen spontaneously everywhere, also without intentions (Eshach, 2007; Werquin, 2008). Between these two types is *non-formal learning*, which occurs mostly in organised activities and often has objectives but is not directly connected to educational institutions and the objectives in the curricula (Eshach, 2007; Werquin, 2008). An example of non-formal learning could be learning during a student's free time by participating in a choir as a singer. According to Watson (2008) and Bonk and Graham (2012), *blended learning* combines various event-based activities, including self-paced online learning, live e-learning and face-to-face classroom learning. The process of connecting the informal, non-formal and formal learning experiences to achieve professional competence to teach music requires knowledge and competence in music (see Krokfors et al., 2008), which means that music educators as experts in the phenomenon and the curriculum have to guide the process.

### 3. Dialogical perspective

Allowing and enhancing student teachers' recognition and exploitation of all the knowledge and skills they have achieved call for a dialogue among all the participants in the learning situations, especially between student teachers and their educators. Schmidt (2012) considers the dialogue as a deconstruction process and conceptualises the dialogue as comprising three elements:

- De-territorialisation, along with the aim and starting point of dialogue, emphasises the importance of adaptable learning. Learning is thus constantly expanding.
- Positive conflict maintains dialogue and is articulated as a productive and perhaps a necessary element of critical commitments. Positive conflict is associated with the concept of *potenza*, which means creative power rather than commanding power.
- Provisionality is a recurring process that maps the dialogical practices, pushing them in different directions. Dialogue aims to create an expansion of the perceptions of cumulative learning.

According to Schmidt (2012), an error in the communicative process may represent a crucial moment for a dialogical interaction. In other words, the dialogue is critical by itself. Fundamentally, the dialogical approach is about emphasising the active nature of student participation in the learning process and helping students challenge, participate in and question the format and content of the learning process (Schmidt, 2012). A large part of music teaching concerning its communication aspect is non-formal in nature. Sometimes, non-formal communication may reveal clues that convey the difficulties among the participants in the interaction. According to Jorgensen (2008), this type of communication is dialogical and inclusive, which requires intelligent listening to others. In a dialogical approach, it is essential that other people's views are valued in communication.

A key feature of dialogue is its inherent unpredictability, and due to its uncertain end result or outcome, the change that the participants hope for may not be in their favor (Heath et al., 2006). The unpredictability of the learning outcomes is one of the major challenges of class-teacher education in music. On the other hand, this unpredictable nature is an interesting and innovative element in studying the musical phenomena. Another question is which way unpredictable results fit in the curriculum interpretation. Learning is not necessarily linear or cumulative. Learning can progress or regress, and it is also possible that neither would happen. A useful reminder, as O'Neill (2012) emphasises, is that a curriculum is a means, not an end. She writes that a curriculum should be regarded as consisting of items in the cultural toolkit that should be used as a means to carry out activities of personal and social significance.

The dialogic approach offers one possibility to seek students' different perspectives on music as a phenomenon and to study the ways to strengthen music learning and understanding. This requires a solid commitment of both teachers and students. Commitment is one of the three rules of dialogue, as proposed by Burbules (1993). Burbules (1993) points out that the engagement of this type of communicative relation must allow the conversational flow to be persistent and extensive across a range of shared concerns. This principle also requires sufficient commitment and confidence. Building trust is therefore essential and a prerequisite for dialogue. Without willingness, dialogue

cannot be brought to fruition. In some cases, the commitment may pose a challenge for the Finnish class-teacher education, where students have to study all the subjects taught in school. Specifically, the learner's life history may influence how he or she is committed to studying music. Bronfenbrenner's *Bioecological Theory of Human Development* (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006) takes into account the complex layers and interactions among a learner's family/school/community or immediate environment, the society and wider culture in which it is situated, and the learner's own level of maturity. Changes or conflicts in one layer create a ripple effect throughout the other layers. Commitment to studying and tolerance for the uncertainty in learning and unpredictability of the learning outcomes are the requirements, which have been mastered by students in music studies.

#### 4. Research method and description of the data

This qualitative study, carried out by four music educators (teacher educators/authors) in two Finnish universities, is based on a constructive approach. It supports the student teachers' processes that enable them to teach music in comprehensive schools. The focus is on exploiting students' guided autonomous and contact learning periods in parallel with examining the demands of music as a school subject. The paper describes the teacher educators' previous experiences and the research based on their observations, reflections and various data collected from student teachers concerning some music studies in the class-teacher education context. The constructive approach models an innovative, unknown way to guide student teachers and support their music education path (see Kasanen, Lukka & Siitonen, 1993; Labro & Tuomela, 2003).

##### 4.1 The data: University of Lapland

The data had been collected in various situations and over several years. The data collected in the University of Lapland consist of six independent parts:

- Data 1. Student teachers' answers in the semi-structured questionnaire after the first compulsory music course in February 2012 (N = 15). The student teachers were instructed to assess their activities in music studies from an entrepreneurial approach (Hietanen, 2015). The essential part of data 1 in the current research includes what they report about their feelings during their communal autonomous learning moments.
- Data 2. Five teacher educators in several school subjects recorded their 50-minute discussion in August 2012. The discussion focused on entrepreneurship education and the diverse learners in class-teacher education. The essential part of data 2 in the current research describes how the educators evaluate the student teachers' abilities in self-determined learning and participating in contact lessons (Hietanen, 2014).
- Data 3. The student teachers' responses in the semi-structured questionnaire after the optional advanced music studies programme (25 credit points [cps]) in May 2013 (N = 11). The integral part of data 3 in this research reveals the student teachers' assessments about their diversity in group participation during the contact lessons.
- Data 4. Four teacher educators in music recorded their 35-minute discussion in August 2013. The discussion focused on the student teachers' diversity and the teacher educators' aspirations and ways to support it during the advanced music studies programme (25 cps) in the 2012–2013 academic year.
- Data 5. The student teachers' answers in the semi-structured questionnaire after the first compulsory music course in January 2014 (N = 47). Some questions were about the respondents' understanding and acceptance of themselves as future class teachers who will teach music. Other questions pertained to the guidance they received during their first compulsory music course (Hietanen & Koiranen, 2014).
- Data 6. An interview with one fifth-year student teacher, conducted by two teacher educators (authors) in music in June 2015. The interview aimed to find out the materials and ways that the student had autonomously and self-determinedly searched for (mainly on the Internet) and applied to facilitate his music learning in contact lessons.

#### 4.2 The data: University of Helsinki

The data had been collected from the written feedback of two groups of student teachers. One group (N = 16), consisting of students taking minor studies in arts education, wrote about their 5-cp music course (October 2014–January 2015). The other group, comprising student kindergarten teachers (N = 100), reported about their compulsory 4-cp music course (February 2015). They submitted freely written reflective essays about their learning processes in music didactics and their own relationship with music during the study year. They were also asked to write freely about their experiences in the e-learning environment if they had used it. According to the results collected from the 16 students who were guided to use the blended learning environment in their group-composing project, blended learning worked especially well in the creative working and group-planning processes. They were asked to reflect on their music learning and group-composing process and the role played by Rockway (a music e-learning environment) in it.

The content analysis of all the presented data has been theory guided (Krippendorff, 2004). The theoretical background and research questions of the current study have driven the authors to search for features of the student teachers' self-determination (e.g., Deci & Ryan, 2000) and informal and non-formal learning (e.g., Eshach, 2007) to support their progression in formal learning situations, as the means employed during the contact lessons.

### 5. Forms of learning in students' learning process in the class-teacher education cases

This section describes the previous forms of learning and guidance in both of the class-teacher education cases. Its purpose is to gather as many needs as possible for modelling a way to guide the student teachers in constructing a solid path towards becoming music-teaching class-teachers. Two teacher educators come from the University of Helsinki and the other two come from the University of Lapland.

#### 5.1 The case: University of Lapland

The class-teacher education programme at the University of Lapland is based on an inclusive approach and follows the principles of research-based teaching (Faculty of Education, 2015). Here, research-based teacher education focuses on educating reflective class teachers in the course of their development (see Lauriala, 2013). The purpose of music studies is to encourage student teachers to exploit their minor or major background in music and to develop their skills, knowledge and competence in music education, based on each student's individual experience and knowledge in music.

In the class-teacher education at the University of Lapland, the extent of the compulsory music studies is equivalent to 5 cps, including instrumental studies, mainly in piano, and many kinds of group exercises. Between the contact lessons are autonomous training periods covering some given tasks. Additionally, it is possible to take optional music studies. As optional studies, the present curriculum includes the advanced music studies programme (25 cps) and music and media (3 cps). The advanced music studies programme deepens and broadens the student teachers' competence in music and music education. Music and media is a multidisciplinary course, which includes elements from music, music technology, the native tongue and the arts, among others. All the contact lessons in music are based on student activities, which means that knowledge in music is reflected in practising music, primarily playing instruments and singing (see Elliott, 2005). Even listening to music is considered active practice when it will be reflected somehow (Swanwick, 1979). One of the main principles in the reflection processes is to encourage each participant in the contact learning situations to participate in reflective dialogue (see Burbules, 1993; Jorgensen, 2008; Valli, 1997).

Teacher-centred methods have been used to some extent in contact lessons to confirm the contents and methods used to focus on the knowledge and skills needed in teaching music according to the national core curriculum. More often, the educators have asked appropriate questions, encouraging the student teachers to think and reflect on their learning processes. The teacher-centred approach to confirm the 'right' contents and methods refer to technical reflection, which Valli (1997) defines as taking care of some external instructions, for example, curricula.

Furthermore, Valli (1997) differentiates between personalistic reflection, which emphasises that each participant's voice be heard, and deliberative reflection, which weighs different participants' rights and benefits in various learning environments. Additionally, Valli (1997) gives a reminder about critical reflection, which focuses on equality and both each participant's and teacher educators' pedagogical solution's justification in the learning processes. The more the teacher educators have encouraged the student teachers to exploit their previously achieved knowledge and skills in music, the more the reflective approach has been personalistic, deliberative or critical, in addition to the technical one (Valli, 1997). One of the main purposes of the teacher educators in music is to strengthen reflection-in-action more than reflection-on-action practices (Schön, 1987). Reflection on action, carried out through questionnaires and discussions at the end of the courses, leave no space for teacher educators' "revisions" according to the student teachers' diverse needs. Instead of being actors following a ready-made script, the teacher educators are supposed to listen sensitively to each student teacher and act in support of the students' various needs. According to Collins and Ting (2010), the latter ones may be called "act-ers".

### 5.2 *The case: University of Helsinki*

The University of Helsinki's Department of Teacher Education curriculum offers 3-cp compulsory music education and 3- or 4-cp voluntary arts studies, which combine music with the other arts in pedagogy- (3 cps) or community-based (4 cps) orientation for student class-teachers, as well as 4-cp compulsory and 4-cp voluntary music education for student kindergarten teachers. These studies mainly focus on the didactics of music education for the primary grades (1 to 6) of Finnish basic education and for early childhood music in kindergarten teacher education. Both types of student teachers can take minor studies in music or arts education. Some instrumental studies are included in all of these courses' cps. These instrumental studies mostly consist of free accompaniment with the piano, but the guitar, 5-string *kantele*, ukulele, recorder and Orff instruments are also used in music education. The new technology and teaching methods of teacher education's instrumental pedagogy are also developed and researched (Immonen et al., 2014; Oksanen 2011, 2012). During the academic year 2014-2015, the co-operation with Finnish companies had been developed so that student class-teachers could also study autonomously in Internet-based learning environments (Rockway) and learn to use game-based music learning environments (SongHi). Teaching the pupils of comprehensive schools is integrated with the student teachers' practical studies in music education.

The courses offered at the University of Helsinki's Department of Teacher Education are mostly based on constructive, research-based teacher education, where both didactic and practice studies mainly follow Kansanen's (1991, 1993) model of developing teachers' pedagogical thinking. In Kansanen's model, There are three levels of pedagogical thinking. The first action level concerns the teaching/learning situation in practice – its planning, implementation and evaluation. In the pre-action stage, the teacher plans the contents, methods and materials to be used during the instructional process to match the comprehension level of the students. Interaction is the central part of the actual teaching process during the lessons. During the interaction between the teacher and the students, but mainly in the post-action stage, the evaluation of the process and results already takes place. The first thinking level is called the object theory level. It considers the didactic theories and concepts where a teacher reflects critically on his/her pedagogical decision, reflecting on his or her own teaching practices. The second thinking level observes the values, ethics and object theories behind the teaching practices and pedagogical interaction. At this level, the object theories are analysed and combined to create a new, perhaps even more abstract entirety (Kansanen et al., 2000; Sepp, Ruokonen & Ruismäki, 2013; Syrjäläinen et al., 2004). Sepp (2014) has researched and applied Kansanen's model in teaching music. According to her research, the main objectives of the music syllabi confirm the idea of making music – engaging pupils in the real world of music by singing, playing instruments, listening to various styles and genres of music, using new technology and expressing their own ideas through improvisation, composition and movement. This is the way that teachers are educated to promote the idea of paraxial music education (Sepp, 2014).

Teachers' pedagogical thinking is always connected to their sociocultural environment. Elliott (1990, 2005; Elliott and Silverman, 2015) emphasises the connections between musical practice and culture, stressing that music

education does not function separately from a culture but works powerfully as a culture. He points out a two-way relationship between musical culture and the surrounding cultural context, which are connected by the underlying network of beliefs and values. Moreover, the student teachers in this present study have constantly connected the formal and informal information to the development of their pedagogical thinking. During the 2014-2015 academic year, an increasing number of new technologies and Internet-based learning environments have been used in our research-based music didactics by developing new blended learning environments for the music component of teacher education. In music didactics, especially in minor studies (25 cps) of music, the blended environment (Bonk & Graham, 2012; Ruismäki, Juvonen & Lehtonen, 2013; Watson, 2008) is used in very effective ways for instrumental studies or music composition.

## **6. Discussion about the recognised needs as a basis for a new guiding model**

Using the blended learning environment requires the motivation for autonomous learning. According to Deci and Ryan (2000), the sociocultural environment that supports the satisfaction of basic needs facilitates natural growth processes, including intrinsically motivated behaviour and the integration of extrinsic motivations. On the other hand, the social contexts that stress competence, autonomy or relatedness are associated with poorer motivation, performance and well-being. There are some individual differences as well. Deci and Ryan (2000) argue that self-organised music making, such as playing an instrument, can be very satisfying for a person when the task is appropriately challenging. These moments are meaningful for finding the beauty in music and for experiencing great pleasure in it. Satisfaction in the self-determined music making involves experiences of autonomy and competence. These are necessary for the enjoyment of the activity, but the explicit purpose of playing music is perhaps not likely to require satisfaction.

Music as a subject in the Finnish National Core Curriculum for Basic Education includes several areas that could benefit from student class-teachers' autonomous training. In fact, the activities of singing, playing instruments, interpreting music by movements, producing compositions and listening by reflecting on music may all benefit from future teachers' autonomous training. Amongst the student teachers, many manifest their awareness about their own knowledge and skills as future music teachers quite truthfully. Nonetheless, other student teachers consider their own position too weak as class teachers teaching music (Hietanen & Koironen, 2014; Ruismäki & Tereska, 2006). Additionally, in each part of the data collected in the University of Lapland, many of the student teachers, to some extent, seem incapable to reflect-in-action (Schön, 1987). The student teachers manifest a will to have some alternatives in the tasks, as well as the possibilities for innovativeness and creativity. They also want autonomous training situations that enable their own ways to practise and manage their own timetables. The most advanced students in music have been encouraged to share their knowledge and skills with peers. In many cases, sharing has been interpreted as the role of a peer teacher, which has not allowed reflective dialogue among the students but only a one-direction advice from a peer. However, many of the student teachers blame the educators for their insufficient support and lack of exact instructions and tasks. Moreover, some student teachers easily assess their knowledge and skills in music as just nothing. Nonetheless, during the music studies, most of the student teachers reveal having various kinds of knowledge and skills in music. If they have not achieved these in a formal learning environment, they may not have the idea of having learnt something essential. In conclusion, the findings about the critical points in guiding the student class-teachers' integrated path in music education, the commitment to studying, the tolerance for the uncertainty in learning and unpredictability of learning outcomes, and the incapability to participate in dialogue in reflection-in-action are the areas on which teacher educators in music should concentrate and develop their guidance, as the means for pedagogical practices in the future.

Helsinki University's Department of Teacher Education uses rotation as the blended learning method, where student teachers learn under a schedule of independent online study in Rockway and face-to-face classroom time during the 5-cp music course in minor studies of arts and skills education and in minor studies of music (25 cps). The Rockway environment can also be freely used by all of our student teachers for their self-determined and autonomous studies, for example, learning to play a new instrument. The data had been collected for one minor course and from 100 student kindergarten teachers' written feedback. According to the results collected from 16 students of the minor music course, who have been guided to use blended learning in their group-composing project,

the blended learning environment works especially well in the creative working and group-planning processes. Based on the written feedback of 100 students of the compulsory music course, who have been allowed to use Rockway for free during an entire university year, the self-determined e-learning environment is used by 56% of the students, while 41% want to learn how to play a new instrument, such as the piano, ukulele or guitar.

*“I was happy that we could freely use the Rockway environment. I have always wanted to learn to play the piano, and now, I have started to study it. I’m dreaming of my own piano, but now I can practise at the university”* (Student 31).

Among the student teachers, 15% have been browsing the pages and have studied some lessons but not regularly. *“The Rockway was an interesting place; my aim was to study some instruments there, but then, I did not have enough time to do it”* (Student 88).

Most of those who have used the e-learning environment are familiar with music and want to learn new techniques or even how to play a new instrument.

*“Thank you for the possibility to join the Rockway freely. I have studied piano playing for 15 years. Now, I have stopped my instrumental lessons, but I can still learn new techniques and free accompaniment from the Rockway environment, where there are courses for different-level learners”* (Student 15).

Moreover, 14% of them have never studied music and have started to learn to play and practise with the university’s pianos. Many of these students are especially interested in the ukulele and bought the instrument to start their studies.

*“When I came to the university, I never thought that I would learn to play the ukulele for my first study year; now I can, thanks to the Rockway! I even bought my own ukulele”* (Student 71).

Because in this compulsory music course, blended learning is not used in the curriculum programme, it is not directly connected to the contact lessons. The possibility of studying in the Rockway environment has been introduced in one lesson but is not obligatory for students. For this reason, 44% have not availed of the free use of the Rockway music e-learning environment. In the minor study course, the e-learning environment is blended into the course programme; thus, everybody has used it in a much more intensive way. This shows that including the blended learning system in music didactic studies ensures that all students learn to use Internet-based learning environments for developing their musical skills.

## 7. Conclusions

Both face-to-face education and autonomous learning periods are important elements in music education. The possibilities of new technologies and self-determined learning environments also have to be taken into account in designing new music courses. Blended learning and dialogue as an approach are needed to engage all students in using the e-learning environment and sharing their knowledge of the new learning environments and possibilities for informal learning. The current paper has asked the question of how student teachers’ autonomous training is guided and connected with learning during contact music lessons. In the beginning of the music studies, the student teachers differ widely in their knowledge and skills in music, which may even cause fear of teaching music in the teacher training periods during the programme (e.g., Hietanen & Koironen, 2014; Ruismäki & Tereska, 2008). In addition to negative feelings, it has been noticed that many student teachers belittle their knowledge and skills, which hinders them from applying their previously acquired skills to develop their competence in music education. Based on the analysed data and experiences in both universities, this study is able to address some critical points in guiding the student teachers’ path in music education as solidly as possible.

Teaching music as a phenomenon and teaching it as a school subject are based on a few formal learning situations, both in the basic and upper secondary education and in class-teacher education. Thus, it is important to exploit blended learning, including all possible previous and present experiences of student teachers concerning music. It



seems obvious that communal studying among peers by emphasising the principles of dialogue (Burbules, 1993) and exploiting technical, personalistic, deliberative and critical reflections (Valli, 1997), combined with blended learning (see e.g., Ruismäki, Juvonen & Lehtonen, 2013), can develop future class teachers as music educators. An essential part of their development is that teacher educators in music remind themselves to play the role of a flexible act-er (Collins & Ting, 2010) more than that of an actor following a script completed before the lessons. The examples from the University of Helsinki, where the student teachers use Rockway on the Internet, and the student teachers at the University of Lapland (data 6) who use self-determined learning and have found meaningful music as a learning material, show the student teachers' capability to autonomously exploit materials and tools on the Internet, among others (see also Ruismäki, 2009; Ruismäki et al, 2012). However, as addressed in the case of the University of Helsinki, a huge number of students have not yet experimented on the vast opportunities online for autonomous learning. Thus, one of the main findings in the current paper is the teacher educators' remarkable role in encouraging students to actively seek suitable ways, learning environments and materials. The four music educators in the two universities (the authors) want to address teacher educators in music to remind them about the following critical incidents for the pilot of a model of appropriate guidance:

- Each student teacher has at least some experiences in music – there is no zero level at the start.
- Each phase of the students' paths in music education is valuable and possible to develop.
- Right and wrong matters in music are relative concepts.
- Dialogue has to be a synonym for reflective discussions.
- It is necessary to encourage each student to participate in dialogue/reflective discussions.
- Students have to talk more and educators have to do so less
- Educators have to take care of technical reflection by asking appropriate questions – not defining strict frames.
- Educators have to acknowledge and appreciate non-formal and informal situations to encourage students to catch up their experiences and knowledge in music outside formal education as well.
- Educators have to appreciate all kinds of music equally valuable.

This study has presented one model of guiding student class-teachers' learning, spread between contact lessons in teacher education and autonomous training periods in formal, informal and non-formal contexts. The subject is music, but core ideas of the model are also applicable in other subjects that require both training skills and understanding of the concepts essential in the studied phenomenon. Nonetheless, this study of the experiences from two universities has only gathered several possibilities for various new technological solutions and learning environments applied in the music didactics in teacher education. More interventions and further research are needed to identify and develop the best practices and knowledge in developing the music curricula.

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