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CONNECTIONS BETWEEN MUSIC LITERACY AND MUSIC-RELATED BACKGROUND VARIABLES: AN EMPIRICAL INVESTIGATION AMONG SECONDORY STUDENTS

PhD Theses

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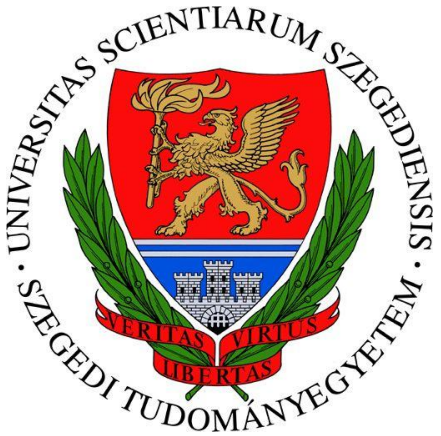

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INTRODUCTION

Zoltán Kodály the Hungarian composer and music educator said that "Let music belongs to everyone" (*Kodály*, 1954). This has been the ideology of music education realized within the framework of Hungarian public education. This thorough reform concerning music, schooling and lifestyle that the composer launched in the 1920's (*Pethő*, 2009) was aiming at providing − within the frames of public education − a wide audience with musical education and, additionally, with extra cultural competence that might ameliorate personality. This approach was focussing on talent-development related to music development and this way the role of music education became part of a wider framework since this approach considered music and participating in music education the means of realizing one's character. This successful and dominant methodology was also recognized and appreciated in music education abroad and has become a major methodology in teaching music in the second half of the 20th century.
Recently there has been a growing amount of criticism challenging the effectiveness of this classical methodology (Gönczy, 2008; *L. Nagy*, 2004; *Stachó,* 2008). These critiques point out that the trends have been in progress nowadays: on the one hand Kodály methodology has been losing ground in Hungary, and, on the other hand, trends in music education worldwide have been exploiting the potential given in learning music (*Webster*, 2002). Professional communities of music education cannot cope with this double bind on their own since they represent a single point of view in the multifaceted network of general education. The issue can be scientifically mapped via empirical research (*Csíkos,* 2002) with value- and performance assessment. Scientific approaches can map issues of music education. This way this research of ours is aiming at recognizing possible ways of preserving values established during the long decades of successful music pedagogy. We have to learn the ways of preserving valuable means. This may enhance the effectiveness of *Kodály*'s method. We shall provide a thorough analysis of the music literacy competence of those who have been provided with music education. The conclusion of this analysis may generate relevant connection between theory and everyday classroom practice. This may have an impact on the progress of music literacy development and, at the same time, it might also be informative for education policy.

THE HISTORIC FRAMEWORK OF RESEARCH CONCERNING MUSIC LITERACY AND ITS PROSPECTIVE VISION

It is basically not just a question of musicology whether someone is provided with music education. And, consequently, music literacy competence gained this way is not the sole issue of music, either. *Kodály* died in 1967. By that time there had been a cognitive turn taking place at the academy featuring contiguities of creative thinking and cognitive music processing (*Rauscher et al*, 1993). Cognitive psychological personality analysis (*Deutch*, 1999), the recognition of the experience-based development of perceptual affect (*Csíkszentmihályi*, 2001) and music-related representations of social competencies (*Zsolnai and Józsa*, 2002) have made it clear that participation in musical education is not an exclusive question of music. Within this framework the topography of music literacy has been becoming a social issue since the complex of competences and learning achieved so far via the acquisition of culture develops the individual's overall learning and talent. This implies that access to music within this complex of competences and learning might qualify people for proper social functions.
We have summarized the theoretical framework − results we have arrived at via research − of music literacy in the following ten points:

(1) We have started our research with the definition and interpretation of the concept of music literacy in accordance with the standardized international musicological concept of '*literacy*' used in musicology all over the world. This concept embeds musical education within "the humanities", that is within the conceptual framework of schooling and that of the academy (*Csapó*, 2002). This promotes a wide dissemination of a standard cultural literacy (*Dohány*, 2010). Acquisition to knowledge and the establishment of a learning-based society have their roots in the economy (*Lundvall* and *Johnson*, 1994). From this point of view we can distinguish two form of knowledge: it refers, on the one hand, to the sum of information acquired through learning; while, on the other hand, it also implies the possession of all those competences that enable cultural effects to make a practical use of those sets of information. This complex of competences consists of problem-solving skills and cognitive functions that would generate knowledge. The new millennium has been promoting an attitude towards learning that would channel learning into complexes of knowledge instead of subjects (*Csapó*, 2002). This concept of cultural competence involves practical, useful skills, competences and knowledge they have an impact that goes beyond schooling: they have a social value and they enhance everyday life (*Csapó*, 2004). "Good learning" that can be acquired in schooling for us specifically refers to competences developed in aesthetic education in contrast with sophistication that does not promote any competence and is limited to descriptive language-mediated symbolic elements (*Kárpáti,* 2002). Enhancing cultural competence has an impact on the world beyond schooling: it implies the possibilities of access to knowledge on one's own via learning awareness (*Molnár*, 2000) on the one hand, and, on the other hand, via the practice of life-long learning (*Óhidy*, 2006).

(2) The mapping of social setting provides the widest possible context of musical cultural competence which provides a frame for our inquiry. The thriving sixties and its declining consumer culture were backed up by economic trends marked by recession that neutralized cultural enthusiasm. It was this social setting against which digital culture has been stepping on the stage (*Kirby*, 2009) − originally this was coined 'pseudo-modernism'. The possibility of giving rise to a value-based socio-political movement was given. This new concept of society lacked any hierarchy, and it was − in contrast with the postmodern concept − resistant to consumption as a form of existence. Its concept of culture was characterised by the establishment of multiculturalism, and its holistic concept embedded forms of science and spirituality (*Mclaughlin*, 2010).

(3) School and extra-curricula socializing influences have been definitive concerning the quality of music cultural literacy. Schools, according to the concepts of modernity, provide the social background for development. Its mottos were: reason, cultural development, and learning. Its framework of norms and values has been prescriptive, normative and has been lacking spontaneity. The most important element of the purpose-oriented changing of individuals has been learning which is quite different from the world of partying, from the techno-house experience of the rites of the passage. Schooling promotes individual cognitive efforts in contrast with the complex of entertainment experience. Rites of the passage into academic knowledge is not being mediated via the quasi-sacred function of the DJ − like in case of light entertainment. Academic rituals of the passage are conducted by a teacher who, according to his symbolically highlighted hierarchic position, is above the pupils in the academic hierarchy. Academic time passes, in accordance with academic space, normatively and, consequently, unlike the sacred medium of partying, it is not transitory and medial. Sacredness (holidays) and rituals (the routine of a class) in school are not characterised by some transitory sense of experience, but by orderliness. The medicine man role of the DJ in school is displaced by the prophetic verbalism of the teacher who is, consequently, less accepted and whose personality has a smaller impact in comparison with that of the key

figures of partying. This actually marks the decline of schools' roles in social and moral mediation (*Mészáros*, 2003).
(4) Pieces of information with reference to music have been increasingly communicated by the media in lieu of schools. Different forums of mass communication have a share in this differently. Visually processed information has the strongest informative effect. So, printed books and newspapers and the radio play a minor role in comparison with information available on the screen. A major part of young people today have their share of cultural consumption online. The consumption-targeted nature of uncontrollable online contents and their quality is contested by institutions representing true value and mediating high culture − not very effectively. The trends which we have just listed have a serious impact on the consumption of music, on the choice of value and on musical taste since the target population of our research consists of students in secondary education − and this is the generation the members of which spend the longest time in front of the screen, mostly consuming music programmes (*Herzog*, 2007; *Götz*, 2008).
(5) The importance of the issue of music literacy is due to the recognition of the similarity between music skills and cognitive functions. The basis of this similarity is provided by the ability of pattern recognition. Via the communication of neuron-firing patterns and via learning music − that is, via learning to recognize repeated and returning patterns − a skill starts to shape with which one can structure acoustic material in order to be able to remember these patterns any time. Forms of music, consequently, constitute general patterns, Gestalt-like. From the perspective of general cognitive development everything depends on the age when a child starts to learn music. According to his research the eighth year is the time for the inset of the tonal language of music cognition. Music competence is *cortic*ally wired: as far as music's cognitive function is concerned music plays in everyone, cognitively everyone is familiar with the framework of music, everyone can perform it. Tonal syntax is the most important agency of the creative momentum. The results indicate that music is just as naturally imprinted in human beings as language is (*Bilharitz, Bruhn and Olson*, 2000). According to *Shuter-Dyson* (1999) the hierarchy of the constituents of music competence is governed by the algorithm of four basic functions. She distinguishes the levels of listening/perception, performance, analysis and composing.
(6) We have studied the new paradigms of cognitive psychological inquiries. They support our hypothesis that music competence and cognitive competence are contiguously related. We started out from the hypothesis that learning music has an impact on cognitive competence, that is, learning music launches and enhances the development cognitive competences. When this is happening − one cortical-cognitive function wires another one − we talk about a *transfer effect* (*Molnár*, 2006). Besides the research results strengthening the relationship between musical skills and other domains (*Weinberger*, 1998) and general intelligence (*Schellenberg,* 2004), from a literacy point of view, i.e., from the societal aspect, other non-cognitive roles of teaching music are important (*Pitts,* 2000).Studies on transfer have depicted various cognitive benefits in spatiotemporally structured problem-solving (*Rauscher, Shaw, Levin, Ky* and *Wright*, 1994; *Hetland* and *Winner*, 2002; *Rauscher*, 2003) and in the development of phoneme-recognition based reading skills (*Lamb* and *Gregory*, 1993) and in the development of grapho-motoric writing skills (*Lecocq* and *Pineau,* 2011).

Studies on transfer in Hungary have verified the results of studies done abroad and they also draw attention to the impact of learning music on compensatory effects within the social continuum (*Barkóczi* and *Pléh,* 1977; *Turmezeyné at al.* 2005; *Janurik*, 2010).

(7) The nature of music cannot be recognized without mapping its affective aspect. The emotional dimension of learning surfaces without fail, and, consequently, we can exactly follow its passage in learning motivation and in shaping attitudes (*Józsa*, 2007). Studies in motivation that map the interface of affective zones and learning motivation promote the study of the impact of learning music on competence development (*Dohány*, 2009). While "doing music," the overall feeling of happiness generated via indulging in music is the phenomenon of *flow*, experiencing *a sense of flowing* (*Csíkszentmihályi*, 1997). It is a perfect state of experience that is *autotelic*; it is without any further use: it offers solely the experience of happiness resulting from participating in the very activity. It promotes learning on account of its self-satisfying nature. Studies on flow in Hungary have been designed to map the experience provided within the classroom (*Oláh*, 1999).

(8) Music activities may enhance collaboration and may promote the development of social skills since active participation in making or "doing" music is a co-production within a community. Studies show that social skills scarcely develop during the school years any further, and with quite many of schoolchildren these skills are to some extent dysfunctional (*Józsa* and *Zsolnai*, 2005). Music may enhance the development of social skills that otherwise have not been taking the desirable route. The most important means of this is generating social relations, spending time together in groups, sharing activities, regular co-production and collaboration. *Zsolnai* and *Józsa* (2002) employed games and exercises in music therapy. They have come to the conclusion that criteria-oriented development carries the potential for developing self-expression. They have also mapped the passage from individual activity to the point of sharing with others within a group. The phase of nursery education provides lots of occasions for experiencing this. During the school years, methodologies in use at this moment, however, do not provide a sufficient number of chances for such development (*Nagy*, 2004**).**

(9) Kodály's methodology features four major issues: every child should receive music education; activities of development focus on singing; the shaping of a value-centred musical mother tongue; and, furthermore, the acquisition of musical notation competence − reading and writing scores relying on tonic sol-fa in order to acquire music competence (*Ittzés* 2004; Gönczy, 2008; *Dohány*, 2011).

10)Standards for music education have been set by the Public Education Act, CXC, and before that the 1993 Public Education Act, LXXIX in their regulations concerning public educational objectives and aims under the heading, "National Core Curriculum". The realisation of the National Curriculum is effected via framework curricula. At the beginning of the academic year in September, 2012 the development of framework curricula hosted by the National Curriculum has not yet been completed. So now we have two documents with the help of which we may study the guiding principles of music education: on the one hand we have a National Curriculum set in the Government Act, 243/2003 − this is the point of reference for our inquiry that we started in 2009. On the other hand, we have the Public Education Act, CXC.

EMPIRICAL STUDY − RESEARCH QUESTIONS AND METHODOLOGY

The objective of our research is assess to is shaped by what extent our students' music literacyis shaped by the *Kodály* methodology. We have used a nationwide representative sample analysis in order to measure performance and to evaluate music cultural competence available in public education. The following twelve sets of issues have shaped and we have been in search of explanations for them.

Research questions

1. The performance of Kodály's methodology has been marking the effectiveness of our music educational activities. Nowadays students' performance in music indicates a lower performance in comparison to the original expectations. Our basic point of inquiry is to map the level of music cultural performance among young people in secondary education.
2. Music competences and knowledge related to music form a complex unit in the mechanism of academic cultural competence. Constitutive and performative elements of knowledge constitute our music cultural competence. The analysis of hand-written tests supplemented by measures performed in the laboratory provide a possibility to map both constituents in one go and to depict their ratio in numeric figures. From this point of view we have been trying to answer the question: what are the constituents of music literacy?
3. Various sources may be marked to generate learning. If we have a look at the social setting we see that there are further ways surfacing for the access to knowledge beyond developing activities provided in the schools. With the decline of academic dominance and with the media gaining a major share in information processing the question is where students get access to their music competence from.
4. Through the years of shaping literacy learning provides a synthesis that also marks the quality musical taste shaping. In the analysis of this framework of values we map how students' music consumption and choices of values have been shaping.
5. The fact that the Public Education Act lists art learning − music learning included − among the competence requirements enhances the significance of music pedagogy activities. However, the generation of a music experience that used to be a central objective seems to have been troubled. In our research we try to map the discursive features students experience while listening to/ making/ dealing with music and depict what attitudes might the subject taught in school generate along music learning.
6. Kodály designed a music teaching methodology that is based on communal activities. This means that the social setting makes an impact on activities related to music and on musical experience that is especially important for the person who learns music skills. We have a look at this strategic role: we examine what kind of musical collaboration goes on within students' music activities.
7. Provided at the processing of question 3 we suppose the deterioration of the transmission of values within the framework of schooling, we shall have to examine the altered position of the very person who tries to develop values since the hypothesis also presupposes an alteration in the teacher's role. Monitoring teaching activity in class enables us to trace, from the point of view of students, what activities, work and character constitute building competences.
8. The contesting features of descriptive and competence-based learning depicted at research question 2 claim new dilemmas to be investigated. The dichotomy of music as the resource of bliss and as segment of literacy draws our attention to the interface of affective cognotive constituens.

The question that crops up inquires what kind of an interface is being generated between the flow of artistic creative activity (that is, the bliss of participation) and the classroom access to abstract knowledge, to modules of literacy.
9. Musical experience provided by music schools is of uttermost importance for this research in order to measure how big a share public education has in the actual shaping of music literacy and how much do music schools complement that.
10. Question 9 has been indicated by the obvious variation among the different types of schools monitored. We are looking, within this framework, for the various levels of impact different schooling systems in secondary education with different means might have on music literacy.
11. Our hypothesis presupposes that paper-based monitoring of music literacy and music competence measured in the lab mark contiguity. We test the validity of the presupposition according to which the level of music skills would signify in the results of a paper-based test.
12. The maxim of the *Kodály* methodology says "Let music belong to everyone." Now, in this research of ours, we actually ask the question whether, everyone really has his/her share in/of music via public education? *Kodály* urged that music ought to be shared by the widest multitudes of people, and the personality of every one of them should benefit from this. This vision complements the function of music education with an extra target which may have some impact on the social-economic framework. The concept of music literacy we have already discussed also highlights the social use of music education. This verifies Kodály's idea − in accordance with contemporary Hungarian and foreign theory − that music learning is primarily not a musical affair.

Research methodology and applications

Our research questions have generated an empirical research which is strategically in search of relatedness and consists of three parts (*Dohány*, 2009; 2012). Two out of the three cross-sectional inquiries have been handwritten tests to be followed by a third oral interview conducted in lab on a small sample.
Along with the empirical research we arranged a preliminary survey in order to prepare testing on big samples (2009, N=178). Meanwhile we were able to develop a means of testing that secures correct data recording and, furthermore, proved to be fit for recording and processing data unhindered. The next step was a nationwide testing on larger samples (2010, N=571). Testing was built on from the experiences of the pilot testing. The objective of our third test (2011, N=30) was to supplement the test-based monitoring of music literacy with further methodologies.
Along the three tests we employed statistic sampling to check the compatibility of samples. The applications employed have been the results of a test-development of our own. To begin with first we constructed a paper-and pencil test on music literacy. It consisted of 14 tasks and 103 items. We were mapping levels of music competence and music skills with listening to music (recognition) skills tasks, students were asked to interpret basic concepts of music, and were asked questions concerning music theory, music history, classical and folk music and we also had a look at music notation writing and reading skills.
The second questionnaire was mapping the background variables with reference to music classes and it consisted of 20 questions and 120 items. Most of the variables were evaluated on a five point Likert-scale in a closed format − these provide some explanation for the cultural impact of the literacy value resulting from the test. We asked questions about musical experience, musical activities, taste, fondness of the classroom subject, about the choice of value, family background and the role of the media. We have mapped major resources of music competence, the rise of the different segments of cultural literacy, the ratio of share in

high culture and in subcultures; everyday music practices and we have also mapped further variables that are not specifically music-related (gender, type of school, parents' education).
At the oral test in lab the researcher conducting the experiment and the interviewee communicated what was to be done and what the solution of the problem was verbally and through musical means. The test consisted of 10 questions and 29 items. While editing the test our main objective was to let basic competences surface sufficiently: listening, listening and recognition, rhythmically governed musical activity, singing based musical activity, recognizing differences of tonality and musical discursive characteristics.

RESULTS

Music Literacy Test

(1) The reliability coefficient is Cronbach-α=0.9547. The mean score of answers given on tasks throughout the overall test is *39.99%* with the SD value of, 17.62. This figure marks the lower third of the curricular minimal requirements backing up the test which means that *achievement have been attained*.

(2) Literacy oriented paper-and-pencil tests can measure music skills only to a limited extent, there are more tasks concerning abstract knowledge (tasks 1; 2; 3; 4; 5; 6; 7; 10; 11; 13), and there are fewer tasks measuring skills (tasks 8; 9; 12; 14). Note that with questions referring to *music learning the mean scores vary more than* it measured on *music skills*.

(3) In the item-level analisys of the music literacy test regression analisys provided within 12 steps. a variance with a 95% explanation. The test consisting of 103 items can eventually be reduced to 12 items since it still has 95% explained variance. *Howevwr, each task of the test have a significant explained variance in the test score.*

(4) The results of the total corpus were further analised in three *sample subgroup*s. First we investigated the subgroup samples of *types of secondary education* then we checked this with *preliminary music learning* experience, and, finally, with sample subgroups *according to gender*. The sample subgroups shaped by the three core background variables then were also analysed in one go via a double-focussed variance analysis.

(5) With reference to sets according to *types of schools* we compared the tesat scores, and we have come to the conclusion that there are significant variances: p=000.1. After this we checked whether the differences between the subsamples changed on each task. According to the analysis of variance performed the significance of the variance of averages has been: $F = 152.62$; $p < 0.001$.

The averages of the three sample subgroups are the following: the average performance of students studying a special music-singing curriculum is 56.63%, general secondary grammar school students have had 38.30%, while vocational secondary school students have had the average of 28.11%. Figures mark exactly that as far as performance is concerned there is *are extremely high between-sample differences* among the three types of schools in tasks that require professional music skills.

(6) Sample subgroups' results according to preliminary music learning mark that students who have not learnt music within the framework of public education have had 35.13% (N = 117) on the total test. Those who have been having extracurricular music learning have attained ten per cent higher: 44.63% (N = 329). The difference between their differences is significant ($t = 5.87$; $p < 0.001$).

The results of the individual subgroups show that vocational students have consistently produced lower scores in every task but one in spite of the fact that there have been as many

of them who learn to play a musical instrument as many do in secondary grammar school. This implies that extracurricular music school learning adds little extra value to students' music literacy. This verifies *Kodály*'s insistence that public education should be considered as a valuable means in the effective transmission of values.

(7) There is a significant difference concerning gender difference. Girls' average on the total test is 40.99% (N = 387) and boys' have had 34.21% a (N = 184). The difference between the two mean scores is significant ($t = 4.71$; $p < 0.001$), this indicating that considering the whole test *girls have performed much more effectively* than boys.

Questionnaire of music-related background variables

(8) When mapping *choices of music and consumption* the line of background variable marks how music consumption can be described. According to the responses, given in percentage, *pop music has an 81% share, while classical music has 19%*, the third choice "I like both equally" was chosen by almost half of the interviewees, 40.5%. From the point of view of schools' effectiveness in communicating music this is favourable thing since the majority of students consider classical values important.

We have mapped various choices of musical discourse, we were monitoring whether a particular choice of musical discourse or genre would have a positive, neutral or negative impact on the level of music literacy.

There has been a negative correlation ($r=-0.128$, $p=0.002$) concerning folksong-like, to be followed by dance ($p=0.001$; $r=-0.142$), and hip-hop ($r=-0.158$, $p<0.001$). Our study implies that hip-hop has the most disastrous impact on music literacy.

There has been positive medium strong ($r=0.301$) correlation between operetta or artificial folksongs and the scores achieved on the music literacy test ($p<0.001$) to be followed by correlations for musicals ($r=0.341$; $p<0.001$), and opera ($r=0.358$, $p<0.001$), and finally comes folk music with its impact with music literacy ($r=0{,}421$; $p<0{,}001$). The highest correlation has been marked in case of the popularity of classical concerts with reference to the share of music literacy: it is $r=0.442$, ($p<0.001$). This correlation also verifies that the transmission of classical values enhances literacy. Hungarian art-folk, R'n'B and pop have been considered neutral, that is, they do not have any positive or negative impact on music literacy.

Note, however, that there is a weaker yet *positive correlation* between on the one hand two popular musical genres and, on the other hand, music literacy performance. Rock has $r=0.164$; ($p<0.001$), while the one with a weaker level of correlation, retro has $r=0.127$ ($p<0.001$).

(9) While reviewing the *sources of music competence* we were investigated what impact has *the hierarchy of sources* (media, friends' network, school, music events, extracurricular music learning) *set up by the interviewees* on the competence attained this way. Channels of information primarily promoted by students have a weak and negative impact, as the correlation coefficient of the media ($r=-0.105$) is the very opposite of the potential cultural impact schools have ($r=0.331$). This implies that the more educated the interviewee is with reference to music the higher s/he appreciates the share of education in music literacy acquisition.

We also have to emphasize the connection between music literacy and family background since each data analysis so far marks the decline of the share of families. The score achieved on the music literacy test and the subjective view of competence gained within the family are significantly and positively related.

(10) When we were monitoring sources of *musical experience*, we were investigating students' attitude towards music classes, the reception of contents provided in these classes, the prestige of the subject and students' willingness to participate.

When we asked them about *what media had provided them with musical experience* the highest share was attributed to the network of friends (67,6%), to be followed by joining the audience of a theatrical or concert event (59,5%) while experience in school took only the third place and was lower than 50% of the total sample. Early childhood imprints of desirable media of developing music skills, family memories, nursery experience (17.5%)can be characterized with remarkably lower levels. Their decline is especially problematic in case of kindergartens − this period of music learning has left the most blurred memories in students. Such platforms of developing music skills like learning to play an instrument, joint forms of playing music (orchestra, choir) have also lost their significance. Note that 19 of the interviewees, 3.3% of them could not recall any lasting musical memories from their past.

Students' attitudes towards different subjects are listed in decreasing order: drawing (3.7), PE (3.65), English (3.6), literature (3.6), music class (3.52), IT (3.44), history (3.33), biology (3.2), mathematics (3.0), and physics (2.23). We can see that on the one hand stereotypes concerning humanities vs. natural sciences have been verified, and, on the other hand, there is another perspective surfacing via the order of curricular subjects. The highest averages figures have been related to classes that develop physical skills and that implies that these activities are obviously much more popular among students than subjects that require cognitive efforts. Yet music is the weakest link in the subject cluster of her own.

When we were asking interviewees about *the athmosphere of music classes* they *responded more positively* than when we asked them about their attitude towards these classes. If we check sample subgroups the sense of a music class was appreciated higher even with vocational school students in comparison with that of their attitude towards subjects (music specialisation class 4.23; secondary grammar school 3.89, secondary vocational school 3.6).

We measured *the preference of the modules of a music-singing class* on a 1-5 ordinal scale. Listening to music has been the most popular module to be followed by learning a new song and singing folk songs. Hungarian folk songs constitute a corpus that has been developed in each student's competence since their early childhood − this corpus shows a medium level of acceptance with reference to possible means of sharing experience. The cognitive activity of learning music theory and doing sol-fa exercises are the least popular segments of a music class. There is a major rejection against this type of learning even among those interviewees who had not considered learning in school burdensome.

When students evaluate *participation in music classes* they mark performing tasks as the most characteristic feature to be followed by boredom. All secondary grammar school and secondary vocational school students except one have evaluated their own music skills between 2.01 and 2.79. In their case experience-based music education has received a poor grade. The music specialized class students have marked a level from the worst to the highest, from 1.0 to 4.0 − this is the double of the range of the rest.

As far as one's attitude towards music is concerned personal attitude towards music class activities and the experience provided by them reflect a positive opinion. The statement "I feel good in music class." has been verified between 4.24 and 3.35, that is, students feel good in music classes, and they might as well like it even better provided they did not have to study in class. The attitude towards the curricular subject marked a significantly lower value (3.09). This means that if music class is considered solely in itself and out of academic context students have a much better opinion of it in comparison with evaluating it within the framework of the total of the curriculum, among the other subjects.

Secondary grammar school students reject singing the most (1.91). The role of the music instructor is weaker even in case of special music class students. In contrast with experiencing flow we may have cases of either anxiety or boredom and we have witnessed that singers' class students more often experience anxiety than students in other classes due to high expectations, yet, on the other hand, they usually do not get bored. Secondary grammar school and secondary vocational school students think of anxiety and boredom as feelings that are quite similar.

(11) If members of a family regularly play music together marks strong correlation with both solo and chamber musical activities ($r=0.447$). Singers' class students' singing in the choir has received the highest value (95.2%), while the lowest value has been given to participation in folk music groups (1.8%). As for the rest of activities related to music learning in all the three types of school and with reference to all three types of instrumental groupings (orchestra, folk music group and pop music group) there have been quite similar results that scarcely reached 10%.

The individual way of learning music is learning to play a musical instrument. The difference between the lowest (secondary vocational school students) and the highest (singers' special class students) *regularity of individual music learning* is twice as much. The 15% (50 of the respondents) have learnt to play some instrument for less than a year, and performance in their cases ranges between levels of very low and low. The longer one has learnt to play an instrument the higher averages increase. Students who have learnt to play an instrument for more than a year could even score the highest results in the music literacy test.

(12) As to what extent music literacy has correlations with the *social-economic status* is marked by the correlation of parents' education and students' performance at the music literacy test. Both parents' education has some impact on the student's performance at the music literacy test. Especially the father's highest level of education and the student's performance at the music literacy test correlate most significantly and positively − according to the *Pearson correlational coefficient it is* $r=0.241$; $p<0.001$. This figure proves that the higher a respondent's father's educational level the better score the student concerned shall achieve. A very similar correlation may be found between the mother's education and student's performance at the music literacy test ($p<0.001$). The correlational coefficient also marks a positive significance ($r=0.277$), yet we can see that it is tighter in case of the mother in contrast with that of the father. This figure also proves *Kodály*'s point: he was convinced that mothers have a determining role in the child's musical development.

If we take the figures achieved on the music literacy test and we measure the four factors in a single framework according to regression analysis on an interval scale − mother's education, share of classical music consumption, attitude towards music classes, attitude towards singing folk songs − we get an explanation of how factors with an impact on the value of music literacy operate. The regression model has proved to be significant ($F = 40.47$, $p<0.001$). The explained variance has been 23.3% which means that these four background variables contribute to the constitution of music literacy significantly.

Lab Test Results

(13) In case of the lab test reliability has been Cronbach-$\alpha=0.79$ for us. In case of ability tests this can be considered as appropriate reliability.

(14) *Performance in case of tasks testing skills have been much more successful* and levelled than it has been with the literacy test. Cluster analysis has revealed that within these tasks activating music skills via musical perception formed a cluster markedly different form another one containing task on performing generative and reproductive activities.

(15) According to research data concerning music skills, *regarding the performance of each type of school* (special class, secondary grammar school, secondary vocational school), respectively, the architecture of music skills has been restructured in comparison with the ranking of music competence for the purpose of access to knowledge. Best performance, according to their average scores, has been provided by special class students who have received regular developing skills but in the rest of the structure positions swap: regarding testing skills secondary vocational school students have overcome secondary grammar school students.

There were no significant gender differences on the lab test, contrary to what we have found in the paper-and-pencil literacy test.

Students learning music in extracurricular music schools have scored 4.5 points higher (23.0) than the ones who learn music solely within the framework of public education (18.5). This result also fulfils our expectations since the regular development of skills implies a higher performance to be achieved.

(16) We have used a *Chi- square test* to reveal connections of data provided by the background questionnaire. We have observed parents' educational level in the two samples. While analysing data with reference to father's and mother's levels of education we were monitoring whether the ratio of levels of education is distribution in the two samples. The value resulting equivalent (□2□1.02) indicates that there is no significant variance between the two samples. Hence the two samples are fit for comparison.

(17) Correlation analyses show that if we compare the total score of the lab test and the figures of the background questionnaire they do not indicate a significant correlations. For example there has been no significant variation between attitudes towards curricular subjects and lab test results: the observed music skills do not play any role in the shaping of attitudes towards curricular subjects. The only exception is the music class: it shows a positive correlation yet the result in this case is not significant.

We have the same situation regarding the preference of segments of music class, since it is solely the activity of singing folk songs that marks a positive significance (0.397, $p<005$). Lab test results are, consequently, not contiguous with preferences concerning curricular subjects and music class activities. The measure of music skills is not relevant regarding the development of music literacy which means that music skills do not play a decisive role in shaping music literacy that generate literacy. Preference of music discourses also mark figures of similar correlation.

(18) Items on the background questionnaire with reference to 19-item "flow" offering statements to summarize experience and literacy do not promote the variance explained very much. The step by step analysis of the result we get from the whole task that there are only five items out of the original nineteen variables can have explained variance.

The four statements consisting of positive correlations are in a hierarchy according to their strength ranging from the most general sets of issues towards concrete segments. The most popular statement is about the most general way of preferring music: *students' attitude towards music* is significantly positive. The decrease of correlational figures mark that *the level of the acceptance of classical music* is lower; to be followed by *the recognition of music literacy* and the last one is the preference of *singing at school*. The only negative correlation is cropping up in connection with the statement, "I love music classes because of the teacher's personality," (r=-1.283).

CONCLUSIONS AND OBJECTIVES FOR FURTHER RESEARCH

Our research methodology has provided the means with which − having studied critical musicology, after effectuating the research plan and following the analysis of research data − we can observe the state of music education in Hungary at the wake of the 21st century. In this line of thought we consider the numerical depiction of music literacy to have been the most essential result of our inquiry concerning music literacy (*Csapó*, 2012). Commentaries on the effectiveness of music pedagogy today have been primarily available in the form of professional opinions. The merit-based performance analysis of ours was to supplement this with its empirical study. Its numerical data are now available for comparison with other study data.

- We have considered the question of music literacy to have been a social issue since the framework of skills and learning constitute the whole of a personality within the synthetic progressive access to literacy and its learning profit promotes the individual's social potential. One of the major conclusions is that the share of musical education is not simply a musical issue. Consequently the interpretation of music literacy acquired cannot be limited to a problem that is solely a professional issue of music. It is closely connected to the world of public education and learning and, in a broader context, to the whole of the social framework.

- Raising the standard of useful music competence in case of abstract learning brings about the reproduction of social differences. Developing skills, however, on the other hand, may become the means by which social disadvantages can be overcome. Music education differentiated along different types of schools, from the perspective of culture being constitutive of the social, may as well promote both the formation of an elite and, on the other hand, social segregation. Learning and developing music skills, consequently, from the point of view of the social, operates as an innovative factor.

- Correlational analyses have studied the sources of music competence, the resulting music literacy and their contiguities, and they have supported the opinion according to which it is the school that loses the most as a medium of transferring norms and communicating values. Students prefer IT devices and gadgets (media, network of friends) whose mediational rhetoric has a negative impact on the legacy of literacy. In order to change the adverse attitude towards the curricular subject it is important in music development in public education to resolve the lack of motivation and, besides that, the conscious use of IT in the choice of values and in individual musical development skills.

- When we were observing the constituents of music literacy we paid special attention to the depicted relationship of relatedness of most well-known trends of popular music to the scores we have measured with reference to music literacy because the traditionally biased concept based on the opposition of tastes in music is prejudicial and would not acknowledge that styles and discourses in music may interact with a potential generative of culture and literature. The positive correlations struck between various popular genres indicate that there are trends in popular music which can be orchestrated to communicate valuable music literacy. To put it in a nutshell: in a complex cultural literacy project classical and popular culture are complimentary to each other. If we are willing to recognize this we may as well observe young people's choices of values more thoroughly.

- In spite of the negative attitude towards music classes there are activities in a music class that students are likely to be fond of − and this means that rejection is not univocal. They love listening to music and they marked singing folk songs and

learning new songs the second best thing among the music classroom activities which challenges the stereotype teachers might entertain that adolescents are not willing to sing. Secondary school students do not refuse to sing and this is a beneficial observation for the sake of sharing musical experience and participation in musical activities in class because this singing may enhance the commitment of students towards the curricular subject.

- The bias against the subject is not exclusively the result of the work of music classes: when students reject the curricular academic mediation of music it is most probably not music that is being rejected. Data analysis has marked that the evaluation teaching class modules receive is rather contingent upon attitudes towards curricular subjects than upon emotional and attitude-dependent constituents.

- The measured impact of the teacher's personality is considerably lower than the attitude towards the mood of the music class (*Dohány*, 2010). This implies that in developing skills students are not driven by the urge to satisfy tutors' expectations. This tendency marks the issue of estrangement between teachers and students and a new tutorial attitude is needed in music pedagogy in order to stop this in compliance with recent paradigms of pedagogy both in facilitation and in research.

- Cognitive and affective aspects are both declaratively targeted at the development of understanding music: at teaching students how to host and enjoy music competently. Students prefer the affective segments in contrast with the cognitive one: they most often miss the "feeling" of music. The most important objective of music pedagogy is to let students have the musical experience of their own via making music themselves and, this way, to generate sufficient motivation.

- Secondary school students do not participate in great numbers in musically and pedagogically beneficent communal musical activities and, consequently, they cannot exploit developing skills provided via musical collaboration and coproduction. Forming communal musical activity groups in schools would be advisable.

- Studies on music skills have shown that literacy is not contingent upon music skills. The possession of music skills in themselves cannot be considered as generative factors of literacy. Developing music skills becomes beneficially effective via transfer.

Our current challenge is how to match two needs: how to merge providing theoretical background and developing skills and at the same time maintain students interest in music.

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