

PART I

MUSIC

1. MUSICAL-EDUCATIONAL RESEARCH OF THE ADAPTATION OF E. E. GORDON'S THEORY OF MUSIC LEARNING IN POLAND

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Abstract: *The authors demonstrate the results of their own research on the adaptation and application of E. E. Gordon's theory of learning music in the educational practice in Poland. Their research quests regard all the phases of education from pre-school period to university. The research is generally used to verify the theoretical assumptions of music learning in Polish conditions on the basis of the experimental procedures with the use of tonal and rhythmical motives in sequential didactic approach, diagnosing the musical abilities and achievements with the tools by Edwin E. Gordon, musical instrument timbre preference in children's formal and informal education as well as the correlative strategy in examining the relation between the musical abilities and the eagerness for musical improvisations and musical achievements. The authors represent the only research centre in Poland dealing with statutory research on the theory of learning music.*

Key words: *Edwin E. Gordon's theory of music learning, musical education, musical abilities, musical-educational research, instrument timbre preference, musical achievements, readiness for harmonic and rhythmical improvisation, pre-school and school education, teaching music*

Introduction

The purpose of this article is the scientific afterthought on the musical audiation completed with quantity-quality scientific research related to the educational practice in Poland. The philosophical and methodological background is the theory of music learning by the American psychologist and music pedagogue Edwin E. Gordon. The 'audiation' is subjected to the scientific analysis initially as ability and subsequently as the capability of differentiating sounds in the human mind in terms of pitch, length, rhythmical pattern, dynamics, tempo or tone timbre. This unique and specific internal perceptive effort requires the abilities of hearing sounds being present and the ones reminded and heard at the time being. Especially in Polish musical education the aspects of pupils' audiation abilities development is sampled with relation to the types and phases of music education model based on audiation. In this model the foundation is the acceptance of current 'category of audiation in music learning' (Kołodziejcki & Trzos 2013, p. 167) "Simply speaking, audiation is present in the ability of telling the difference between the sounds on the basis of pitch, length, rhythmical patters, dynamics, timbre, and so on" (Kołodziejcki & Trzos 2013, p.

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167) A separate trend in the educational research in Poland deals with the possibility of joining the traditional and modern solutions in the musical education and upbringing, including the application and partially the adaptation of the American theory by E. E. Gordon in Poland. The theoretical framework still bring the research news about the role of the audiation in the musical education and the analogy between learning music and acquiring one's mother tongue.

Introduction to the issues of the theory of music learning in the context of preparatory audiation.

The theory of music learning by the American pedagogue and psychologist Edwin Elias Gordon has been known in Poland since the beginning of the 1990s. During the series of seminars Prof. E. E. Gordon presented his assumptions of his own theory of music learning⁴ (in short GTML⁵), which constitutes the analysis and synthesis of the sequential manner how and when we learn music (Gordon 1999, p. 507) in the most effective way at various levels of acquiring some new musical experiences. GTML generally relates to the initial 10 minutes of a music lesson during which some activities on pitch (tonal) motives and temporal (rhythm) motives are conducted which are separated from one another and treated separately at the time of trainings (Zwolińska & Jankowski 1995, p.35.) Each another level of achieving tonal and rhythm contents in the activities determines the willingness to proceed to the upper one, related to the music learning along with the comprehension and the simultaneous development of musical cognition. Using GTML allows for directing children's musical development in the manner which is systematical and regulated developing the preparatory audiation and the audiation (Uchyla-Zroski 1995, pp. 183-187; idem 1999; idem 2000). The preparatory audiation relates to informal directing of musical abilities in the developing phase of a child, which is maximally up to the age of six. The inculturation phase called the process of assimilation of the cultural heritage (Śliwerski & Milerski 2000, p. 85) takes place through making the cultural assets available and accessible to a child and it is the process which never ceases, and thus it is considered the most important in the concept of musical development by Edwin E. Gordon. The audiation is the foundation of the musical ability and it is treated as a separate musical cognition and actions indicating the comprehension of the processes and relations happening between the sounds in music. Child's ability to enter a particular type or phase of preparatory audiation displays their musical age but not the calendar age, therefore the possibility of musical interaction is present in each moment of education, but the earlier the better. The inculturation should take place through the demonstrations of various music to a child and surrounding them with the music plentiful with various scales, meters, tempo,

⁴ Such seminars took place in Radziejowice in 1991, Krynica in 1995, Zamość in 1998, in Bydgoszcz in 2001, Ciechocinek in 2004, in Bydgoszcz in 2006 (after Gawryłkiewicz 2006, p. 169). The subsequent seminars took place in Bydgoszcz in 2009 and in Łódź in 2010, after: <http://pteeg.org/o-nas/kalendarium/> (08. Grudnia 2013).

⁵ Also: Gordon's Theory of Music Learning.

timbre and dynamics, singing to a child in the same tonalities as well as presenting tonal and rhythm motives. Preparatory audiation determines the possibilities of music learning, it is the manifestation of the human being's internal musical potential (see: Kołodziejcki 2011; Bonna 202, p. 14; Gordon 1997, pp. 5-6; Zwolińska 1997, p. 24; Zwolińska 2011, pp. 119-120.)

Some brief notes about the theory of music learning by Edwin E. Gordon in the audiation development.

Edwin E. Gordon's theory of music learning is present in Polish educational surroundings in at least a few semantic domains (Kołodziejcki 2013, pp. 48-59):

- it presents the way the children and the youth learn music by themselves or with a help from the others while possessing some helpful suggestions into the process of learning,
- it puts the emphasis on the individual development of a human being following the inborn potential of musical abilities,
- it stimulates the development and the action activeness of a single person and the creation present at increasing the readiness to develop the musical improvisation ability (harmony and rhythm),
- it assumes the individualization of a person's musical development, especially the tonal and rhythmical abilities and capabilities and as a consequence the musical improvisation readiness and ability (Kołodziejcki 2012, pp.173-182),
- it indicates and names the course of the musical development treating it as a phenomenon fully cognitive and able to be directed and formed initially in the informal musical education with the stimuli from the parents and the nearest family and then in the formal education by the pre-school educators and the teachers of musical education at school,
- it verifies methodologically and empirically the thesis on the possibility of increasing the human being's musical potential with the help of intentionally undertaken educational actions (musical training with the use of tonal and rhythmical motives) and self-educational (listening to music, singing some motives, musical plays),
- it carefully depicts the way a human being develops musically starting from the postnatal period with some favourable and/or unfavourable family surroundings (inculturative),
- it uses the concept of audiation which concentrates the main ideas of the theory of music learning and the purpose of a human being's musical development ready for the conscious reception of music culture with its full comprehension,
- it assumes heterogeneity in terms of musical aptitudes considered as inborn, the school group, it constitutes the challenge for the teacher of music and it relates both to a child's individual musical development and the group interactions deciding on the social character of learning,
- it emphasizes the dialogue and the interaction in acculturation and

- subsequently a child's musical education,
- it is characterized with the survey⁶ and the objectiveness in evaluation of the learning and teaching results,
 - in the didactic process GTML is characterised with four units: (1) learning and teaching, (2) didactic and educational interactions, (3) variety (compare Kołodziejcki 2012) and (4) methodical and organisational flexibility (Zwolińska 2012, pp. 71-73.)

Some aspects making GTML unique when compared to some other concepts

Some decisive meaning of the aspects of the discussed theory should be found in the following assumptions (compare: Kołodziejcki 2011):

- particular treating of audiation as a structure similar to external and internal activities performed by a person while understanding and experiencing emotionally music (Jankowski 2004, p. 108),
- theory of developing and stabilised musical abilities along with the series of tests to measure them objectively (Kołodziejcki 2012a),
- displaying the sequence of music learning (compare: Gordon 1999),
- the concept of musical achievements and evaluation measure with the use of rating scales in the objectivism vector of music learning and carefulness of child musical development depending on their potential,
- integrating the motion with vocal and rhythmical performance as an important predictor the proper intonation in singing (Gordon 2006, pp.1-56),
- propagation of mutual music performing within one's own family as an important creative factor in child inculturation oriented at abilities development (preparatory audiation) and musical achievements (audiation) (compare: Gordon 1999).

Music learning theory provides the explanations and responses to the assumptions related to different active musical behaviours of a person – generally singing (chanting, vocal recitation, singing, vocalising), playing the musical instruments, musical motion and motion with music and musical creation and improvisation do not constitute the negation of the qualities rooted in Polish concept of musical education (compare: Przybysz-Zaremba 2012, pp. 385-394, Kołodziejcki 2013a, pp. 410-421).

Polish application and adaptation research on GTML – selected reports

Using the works with E. E. Gordon's theory, the teachers of music can make a diagnosis of their pupils' musical development. The diagnosis should then be described with the related methodologically sequence of actions

⁶ To sample the developing musical abilities the tests prepared by Edwin E. Gordon are used, i.e. Intermediate Measures of Music Audiation (IMMA). To sample the stabilised abilities Musical Aptitude Profile (MAP). To sample the readiness for musical improvisation two tests: Harmonic Improvisation Readiness Record (HIRR) and Rhythm Improvisation Readiness Record (RIRR). To sample the musical achievements the specially prepared by teachers the rating scales are used, but never ready tools – due to the individual teleology in a teacher's practice.

(measurement, qualifying, introducing musical motives, normative and idiographic evaluation of child's musical achievements.) The musical-educational research on E. E. Gordon's theory in Poland rely on the scientific paradigm which considers E. E. Gordon's research studies and the viewpoints of other researchers representing this domain in education (Zwolińska 2011, p. 264.) Within the assumed paradigm of music pedagogy the foundations and orientation of the undertaken research can be updated in the domain of musical education. Frequently, Polish musical educators express their interest in the following issues:

- measurement and evaluation of musical capabilities (Kołodziejcki 2009; Trzos 2009),
- musical training application in the context of child's musical development (Kołodziejcki 2011),
- musical achievements analysis in various situational conditions mainly relating to the real potential of child's predisposition to learning music (Trzos 2009; Kołodziejcki 2011.)

The examples explaining the need and the possibility of using by teachers the particular tools of abilities measure as the key factors of child musical development with the use of E. E. Gordon's Theory of Music Learning background can be detected in the works of some Polish researchers: M. Suświłło, E. Zwolińska, M. Kołodziejcki, B. Bonna, P. Trzos to mention a few. It appears that the possibility of educational diagnosis with the use of E. E. Gordon's research tools by the teachers of music can be highly inspiring for them. The research in Poland indicate that there is the need of sampling of the transfer conditions of GTML into the domain of Polish musical education. The explorations undertaken in Poland always related to the conditions of contemporary musical education in Poland: formal and informal, general and the specific on in the musical education. The educational research on the Polish adaptation of the selected elements of the theory of learning through the audiation development realized various plans, including: experimental, comparable, diagnostic. The written works of the samples performed within the recent years related to the application of terms, problems, models and tests by E. E. Gordon and adapted into the conditions of the teachers' of music everyday practice (compare: Kołodziejcki 2009a).⁷

The empirical character the analysis of the theory of audiation cognitive status caused that the research in this domain had to consider the term 'audiation' as a complex process of 'musical thinking' and the musical information (contents, notes) transformation. Horizontal and vertical research perspective in this area assumes the analysis of quantitative and qualitative changes in happening in musical thinking (Zwolińska 2012, pp. 76-90). This

⁷ The revelations from the particular reseach on GTML application and adaptation in Poland were published up-to-date in some important to Polish and music pedagogy scientific series, like: Creativity in education and educational practice everyday (ed. M. Kołodziejcki), Evaluation and innovations in education (ed. J. Grzesiak), some studies of Polish Society of Edwin W. Gordon (monographs of Polish Society of Edwin E. Gordon) (ed. E. Zwolińska).

important criterion becomes the standard of audiation analysis of the musical education model requiring not only the quantitative, positivist but also the qualitative strategy of actions in terms of interdisciplinary (Trzos 2011, pp. 154-162) approach. Such complementary research on the problem of ‘experiencing’ category of ‘audiation’ in the everyday way of thinking by some Polish teachers of music was conducted by Paweł A. Trzos (Trzos 2012.)

Similarly, the pioneer experimental research in Poland on musical instruments timbre preference in the context of audiation development of children and teenagers internal instrument is worth noticing (Trzos 2009.)

Although the research of the general problematic aspects between the perceptive preference of instrumental timbre and the achievement were acknowledged by some other researchers (Sloboda 1999, pp. 36-39; Gardner 2002, pp. 38-40), it is E. E. Gordon that proved the correlation existence in this area (Gordon 1984, pp.18-21.) In Poland such research was conducted on the sample of 166 children at the ages range 9-17 and indicated that pupils’ preferences in this area were related to their engagement and motivation in work with overcoming the difficulties (Trzos 2009, pp. 123-163) *Instrumental Timbre Preferences Test* (ITPT) by E.E. Gordon was used and *Self-evaluation Preference Sheet* by P. Trzos in the research on the preferences of Polish pupils at musical schools and musical culture centers. Additionally, the observation led to some conclusions indicating the positive tendency of preference compliance with the self-evaluation of the accuracy of selection of an instrument to learn. The dispersion of the results of general comparison of the preference indicators of the instrument sound timbre (*Self-evaluation Preference Sheet* – IX.2003, 2004) with the results of preference measure with Gordon’s ITPT test (X.2003, 2004) is presented following:

Chart 1. The results of general self-evaluation of Polish pupils’ favourite instrumental timbre (results of *Self-evaluation Preference Sheet*) with the results of ITPT Test by E.E. Gordon.

Pupils’ self-evaluation and the results of E. E. Gordon’s ITPT test N = 166					
Pupil’s self-evaluation of preference fully compatible with the ITPT results		Pupil indicating another wind instrument but of the same group		Pupil’s choice of an instrument of another group	
N	%	N	%	N	%
68	41	57	34	41	25

Source: (Trzos, 2009)

Basing on the data above, it can be stated that 41% of sampled pupils of formal and informal musical education in Poland while performing the self-evaluation of their own preferences confirmed the result achieved in E. E. Gordon’s ITPT test. It is worth paying attention to the fact that another 34% of the pupils in the sampled group in the light of their opinions and self-evaluation did like an instrument different than the one indicated in the ITPT Test but still a wind instrument belonging to the same group. It would mean that those pupils

out of other musical instrument groups (percussion, bowed string, string) considered the wind instruments the most attractive in terms of sound. ITPT Test result may be slightly parallel to pupils' self-evaluation. Also worth attention is the fact that $\frac{1}{4}$ of sampled pupils chose an instrument of a totally different group in the Self-evaluation Preference Sheet. 25% of sampled pupils decided before the school activities beginning that they most prefer the sound of a musical instrument of bowed string groups, percussion groups (melodic, non-melodic) or keyboard group. It can be assumed that if their preferences can be sampled with other version of ITPI Test than wind instruments (perhaps with bowed string instruments timbre as such ITPT Test version exists), it may appear that the same people represent similarly strong and coherent with their own self-evaluation of instrumental timbre preference (Trzos 2009, pp. 123-124).

This aspect of Polish research seems very important for people dealing with early musical education. The further explorations relate to **the use of GTML among pre-school children** with the use of tonal and rhythm motives training.

Beata Bonna used some experiment-oriented yearly research according to two-group plan with the initial and final measurements with the participation of the group of 53 6-year-old children of two kindergartens in the city of Bydgoszcz. The purpose of the experimental explorations was to measure the effectiveness of music teaching according to E. E. Gordon's sequential methodology to intensify the children musical development effects in the period of the developing capabilities increased dynamics. An important objective of the research was also the verification of the possibility of the adaptation of E. E. Gordon's theory into the Polish pre-school educational system. The pedagogical experiment was supported with the method in action called 'action research' of the researcher-practitioner's active participation specializing in music teaching according to E. E. Gordon's theory realizing the activities in the experimental group (E). The control (K) group had the musical activities with a teacher specializing in traditional (Polish) concept of musical education. In both groups the same musical capabilities were developed, however in a different manner. It has to be added that in the Polish concept of general musical education is influenced by the systems of C. Orff, E. Dalcroze, Z. Kodaly and J. Mursell. The concept bases on such forms like: perception of music, singing, playing the instruments, motion to music as well as children musical creativity (Białkowski 2002, p. 147) It does not refer to such important and characteristic to Gordon's Theory of Music Learning sequence in which music should be learned to be comprehended better and combining the knowledge of music learning in the sequential way along with the knowledge of musical aptitudes and audiation (Gordon 1999, p.50; see also: Gordon 2001; Bonna 2011.) Musical education based on GTML leads to the musical language development, masters the sound perception, optimizes the aural functions and protects against musical deafness. It also allows for understanding music, its appreciation and perceiving the beauty compatible with subjective sense of aesthetic (Bonna 2005, p.71.) In the

course of experimental proceedings the authoress focused on displaying the effectiveness of the undertaken interactions in the context of musical and perceptive aptitudes development of children in the natural conditions of pre-school environment. The effectiveness of the experimental method of musical education (based on GTML) was compared to the traditional (Polish) concept of musical education. It was assumed that including into the pre-school musical activities the basic elements of GTML will cause the increase of musical abilities and aptitudes of children.

For the diagnosis of children developing musical abilities (of audiation type) *Primary Measures of Music Audiation (PMMA)* Test by E. E. Gordon was used (see: Gordon 1998 pp. 72-75, 120-127,) while the tool verifying the perceptive level of musical abilities of the sampled group was the authoress' *Perceptive Musical Abilities Check (SPUM)* (see: Bonna 2005, pp.214-220) Children performance and improvising competences were evaluated on the basis of the elaborated *Activities Check (ZZ)* (see: Bonna, pp. 221-223) dedicated to the children individual research and accepted criteria (see Gordon 2002; Bonna 2005.)

During the experimental classes children performed tonal and rhythmical motives characteristic to preparatory audiation. They also listened to music presented by the teacher (singing and rhythmical excerpts recitation) different in terms of tonality (major, minor, Dorian, Locrian, Myxolydian, Lydian) and meter (2/4, 6/8 5/8, 7/8.) This way the aural and performance musical vocabulary was built by children through tonal and rhythmical improvisation. Moreover, the interactions were adjusted to the phase of particular child's musical development taking into consideration their musical behaviour and the reactions characteristic to a particular type and phase of preparatory audiation and the musical aptitudes individual profile (see Gordon 1997.) The analysis of results of the experimental research displayed the comparable potential of musical aptitudes of the children in both sampled groups both in the pre-test and the post-test. Despite the higher results of the experimental group children in the final check in Melody Test, Rhythm Test and the general result of PMMA, the difference between the groups resulting from the t-Student test used turned out statistically unimportant. It was also indicated that the increase of the arithmetic means of the points between the initial and the final research was approximately twice as big as in the experimental group of the musical education method (E: Tonal 4,43, Rhythm 4,11, Total 8,50; K: Tonal 2,30; Rhythm 2,04; Total 4,32.) Furthermore, it was observed that both experimental and the traditional activities did cause some positive changes in the aptitudes levels, increasing mainly the number of the sampled ones with the top musical aptitudes. More beneficial changes happened in group E where twice as big increase of children with top aptitudes (of 14 children more) was noted than in group K (of 7 children more.) In the final test in group E not a single child was observed with low musical aptitudes, whereas in group K – 3 children had low aptitudes. The achieved dispersion result indicated the even marking greater efficiency of the teaching

based on GTML in developing children musical aptitudes (Bonna 2005, pp.154-156)

In the analysis effect of SPUM the crucial statistical difference was stated ($p=0,05$; $M=5,25$) between the means of both groups with the upper hand of the children of experimental music teaching. The distinct advantage of the children from this group related mainly initially to the poorest mastered competences which were combined with recognition of meter of songs, long and short sounds in musical motives and defining the number of heard sounds in co-sounds. Moreover, the group E children proved much better in the tasks related to differentiating the sound pitch in the ranges: high, middle and low as well as defining the song structure (AB; ABA.) Also the results of the individual ZZ in terms of performance and improvisation musical aptitudes of children turned out bigger in group E and the difference noted of the mean points ($M=4,36$) was statistically important ($p=0,05$.) The biggest result differentiation between the groups for the benefit of the children of experimental interaction related to recitation of a rhythmical text with the use of tempo, timbre and dynamics (31%), melody improvisation (28,66%) and the improvisation of the rhythmical accompaniment to a song (23,33%.) The greatest improvement of results in the experimental group was related to the realization of song rhythm (increase of 44,66%) and the intonational correctness of singing (increase of 19,405.)

It has to be acknowledged that the interactions performed in group E caused a significant development of children musical aptitudes, especially the ones which were combined with developing intensively in the pre-school period the tonal and rhythmical musical aptitudes. Purposefully and systematically expanded the aural and sung musical vocabulary and performance of particular tonal and rhythmical motives caused a significant development of improvisational aptitudes in terms of melody and rhythm as well as the increase in intonational and rhythmical correctness of singing. It can be supposed that the activities triggered and enforced the audiation process optimizing at the same time the aural functions which effected in the significant development of children perceptive aptitudes (Bonna 2005, pp. 151-168) The interactions undertaken contributed to faster and more conscious acquisition of musical aptitudes through music comprehension and in this way the audiation processes of particular pupils underwent the qualitative change.

In the research by Maciej Kołodziejcki (Kołodziejcki 2011; Kołodziejcki 2007; Kołodziejcki 2008) carried out from 2004 to 2005 in some primary schools in Płock over the adaptation of the theory of music learning in Polish surroundings with the use of tonal and rhythmical motives in grade one (twice a week) and grade four (once a week) the main hypothesis stating that the sequential introducing of tonal and rhythmical motives in accordance with E. E. Gordon's methodology had a modifying impact on the level of aptitudes of grade one pupils and the musical achievements of grade one pupils and grade four pupils was partially confirmed as the experimental procedure selected a few factors determining this process. The most important of them was the early, informal and formal musical guidance, family musical culture, properly selected

method of musical training as the external stimulation, developing musical aptitudes at the proper age through an organized musical training, developing vocal competences in childhood (already at the family home,) a properly advising and compensating school (prior kindergartens, integrated teaching classes.) The diagnosis of vocal competences in grade four indicated low values, which confirmed the thesis that the significant development of the latter ones happens in the early and middle childhood and the early school age. Gordon-based methodology operates as stimuli on the development of musical predispositions and competences but it can not be treated as the only right way to increase the children and the youth musical level but to treat it as the alternative solution helping creative teachers. It was stated that Gordon's theory can successfully complete Polish (good) musical-educational experiences, trigger the animation of musical movement, cause the increase of level of musical education at the early school age. The research outlines that the use of Gordon-based methodology contributes to:

- stimulation of inborn musical predispositions,
- accelerating the developmental changes within the area of musical aptitudes and musical achievements,
- effectiveness of sequential interactions especially at the early school age.

The research results display also the necessity of undertaking some activities aiming at optimizing the musical education practice in Poland – increasing the level of musical aptitudes and competences of the society in Poland, searching new concepts of musical education with a competent teacher as a creator, animator and a manager, underlining the role of family as the institution developing aptitudes, evoking the musical interests and some positive motivations to learn music and the necessity of guiding an early musical interaction. The research indicate unambiguously that the greatest musical aptitudes increase is noted in the lower grades of a primary school and the musical aptitudes develop with age, so the stimulation in accordance with Gordon's concept does bring the positive results which are not to be defined as spectacular.

In terms of quality the better adaptation of tonal and rhythmical motives is observed significantly at an earlier age. Although the vocal competences develop until adolescence, the greatest increase is achieved until the age of 9, which confirms the research. Comparing the results in grades on and four in terms of vocal competences, the decrease tendencies are observed. It means that the older a child, than their vocal competence level decreases with age. It was noted that the rhythmical aptitudes develop more dynamically than the tonal ones, though at the early school age the tonal ones are bigger than rhythmical and what is important, the musical aptitudes can be formed, thus they develop under the influence of musical training when related to the musical aptitude. It is also confirmed by the longitudinal research on developing the musical aptitudes of 7-9-year-old children with the use of the elements of dance and motion with music in which the validity of the undertaken stimulations was confirmed and the aptitudes development was empirically sampled with the tools of E. E.

Gordon, especially with the *Intermediate Measures of Music Audiation Test* (Kołodziejcki 2012c, p. 373-384)

Closing remarks

The fragmentary data above procured in the authors' own research on Gordon-based environment in Poland clearly indicate that the presented theory is slowly embedded into the frames of innovation and innovatory education. However, it is worth undertaking the effort of further research, particularly the one of longitudinal application and verification character, outlying the exploration vectors of E. E. Gordon's theory of music learning.

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