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## Heterogeneity of Thinking about Audiation in Terms of Scientific Exploration of the Status of Music Learning Theory by Edwin Elias Gordon

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### Abstract

Taking into consideration the recent attempts made by scientific researchers to study the learning process as well as the process of learning music, it is assumed that both are subject to the same methodological rigour as the ones which originate from different backgrounds and subjects, especially in the case of studies based upon quantitative strategy. There is a need for a thorough theoretical analysis, which has been present in Polish educational market for over 20 years, of music learning theory by E.E. Gordon in terms of its functionality in research development. The author of the article outlines a thorough analysis of learning theory in terms of its scientific rationality, theoretical and practical background. The author also conducts a selective description of its fundamental concepts in terms of undertaking research exploration. In these circumstances, the focus is placed upon projecting, conceptualisation and operationalisation of the attempts made by researchers in the subject of early school music education and widely understood music pedagogy.

**Keywords:** pedagogy of music, early school music education, theory of music learning, audiation, educational research.

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## Introduction to contents

The Scottish physicist James C. Maxwell<sup>1</sup> said:

There is nothing more practical than a good theory.

The fact that scientific research on music education must include the theoretical basics of at least two disciplines<sup>2</sup> – that is education science (pedagogy) and music (with its philosophical, anthropological, psychological, musicological, ethnomusicological and aesthetic background) – is not conducive to a non-invasive design, conceptualisation and operationalisation of research efforts<sup>3</sup>, as we are dealing with a kind of “corset” of multidisciplinary with respect to cognitive explorations undertaken as part of the subdiscipline of music pedagogy, or something along the lines of interdisciplinary transgressions interpreted as a perspective that harmonises different attitudes and concepts related to educational research.

The explications and reinterpretations presented in this article are not so much addressed to readers who hope that music should play an important role in the development of children and young people (pupils, students), as to those who actively affirm and, at the same time, question the areas of music education that require further scientific justification or theoretical references in individual research investigations, in which the role of theoretical foundations may be played by music learning theory of the American teacher, psychologist and musician Edwin Elias Gordon, one of the leading pioneers of research on music education in the world<sup>4</sup>. The “theoretical template” that appears at the stage of research planning in the form of a concrete theory (scientific, educational) helps to systematise the approach to educational research on music in a more teleological way<sup>5</sup>, and the actions of explaining and interpreting research results are subject to the rigours or even reductions that are characteristic of scientific theories<sup>6</sup>. Admittedly, Edwin E. Gordon’s learning theory<sup>7</sup> has significantly influenced the modern way

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<sup>1</sup> As cited in S.M. Wilson, P.L. Peterson, *Theories of Learning and Teaching. What Do They Mean for Educators?*, National Education Association, Washington, 2006, p. 14.

<sup>2</sup> Cf. Ch. Leonhard, R.J. Colwell, *Research in Music Education*, “Review of Research in Visual Arts Education” 1976, vol. 3, no. 1, pp. 65–84.

<sup>3</sup> E.W. Eisner, *Qualitative Research in Music Education: Past, Present, Perils, Promise*, “Bulletin of the Council for Research in Music Education” 1996, no. 130, pp. 8–16.

<sup>4</sup> See E.E. Gordon, *Discovering Music from the Inside Out: An Autobiography*, revised edition, GIA Publications Inc., Chicago 2014.

<sup>5</sup> Ø. Varkøy, *The role of music in music education research: Reflections on musical experience*, “Nordic Research in Music Education” 2009, vol. 11, pp. 33–34.

<sup>6</sup> K. Swanwick, *Music, mind, and education*, Routledge & Falmer, London – New York 1988, pp. 7–19.

<sup>7</sup> See E.E. Gordon, *Buffalo Music Learning Theory: Resolutions and Beyond*, GIA Publications Inc., Chicago 2006; E. Bluestine, *The Ways Children Learn Music: An Introduction and Practical Guide to Music Learning Theory*, GIA Publications Inc., Chicago 2000.

of thinking about music education worldwide<sup>8</sup> and in Poland<sup>9</sup> through, for instance, the intensification of scientific approach to measuring musical aptitude, the expansion of knowledge of music learning in a sequential way or the taxonomy of goals in teaching music, that is acquiring particular knowledge on the basis of both individual and social experiences with music learning (declarative knowledge, or *I know that...*, which is present in the theory of music, and the procedural knowledge *I know how* related to musical abilities, singing or improvisation). *Gordon's Theory of Music Learning* (abbreviated *GTML*) describes the nature of music learning, whose most important aspects are musical thinking, referred to as audiation, and the degree to which musical abilities are mastered depending on the quality of "internal musical hearing," that is the ability to audiate tonal and rhythmic patterns<sup>10</sup>. Darrel L. Walters goes as far as to claim that so far none of the 20th-century researchers has had more to say about formal and informal music education than Edwin Elias Gordon; the countless number of his re-

<sup>8</sup> Admittedly, this fact is not self-evident in publications with global reach, as only selected diagnostic and testing aspects of Edwin E. Gordon's activity are contextually mentioned in two books: R. Shuter-Dyson, C. Gabriel, *Psychologia uzdolnienia muzycznego*, WSiP, Warszawa 1989 and Ch.R. Hoffer, H.F. Abeles, R.H. Klotman, *Foundations of Music Education*, Cengage Gale, 1994. On the other hand, it is indicated on the website of *The Gordon Institute for Music Learning in Chicago* (See <https://giml.org/>), which obviously raises doubts and suspicions; the institute has been promoting the ideas included in the music learning theory of Edwin E. Gordon and the activity of his associates, mainly Christopher D. Azzara, Marilyn Lowe and Richard Grunow, for many years.

<sup>9</sup> This claim was prompted by a few facts: the first is that Gordonian seminars have been organised in Poland since 1991; Professor Edwin E. Gordon himself participated in the first seminar. The second is the parallel development of a scientific trend based on the premises of *GTML* (Kazimierz Wielki University in Bydgoszcz, University of Warmia and Mazury in Olsztyn, Maria Curie-Skłodowska University in Lublin, Fryderyk Chopin University of Music in Warsaw or, contextually, University of Wrocław). The third fact is directly related to a trend that combined education (Polish Society of Edwin E. Gordon in Bydgoszcz and the Foundation of Creative Education in Bydgoszcz), training and workshops (Foundation of Creative Education in Bydgoszcz and Allegretto in Wrocław). However, not all of the organisations operate on a *non-profit* basis, as apart from their statutory educational activity, they also engage in commercial projects. It should be added that Polish Edwin E. Gordon Society is the only institution that promotes the ideas of the author of the concept of audiation, and its members include both enthusiasts of the music learning theory and certified teachers from all over Poland; the educational and promotional activity of the society is famous not only in the country but also abroad. The publishing activity of the society deserves a mention as well; it includes methodological guidebooks, CD albums with recordings and organising methodological, training, didactic and scientific conferences.

<sup>10</sup> P.G. Woodford, *Evaluating Edwin Gordon's Music Learning Theory from a Critical Thinking Perspective*, "Philosophy of Music Education Review" 1996, vol. 4, no. 2, pp. 83–95; W.A. Stokes, *Is Edwin Gordon's Learning Theory a Cognitive One?*, "Philosophy of Music Education Review" 1996, vol. 4, no. 2, pp. 96–106; P.A. Trzos, *Gordonian Implications in Polish music pedagogy: Bydgoszcz School Model*, "Review of Artistic Education" 2015, issue 9–10, pp. 128–136.

search projects, books, articles, measuring tools as well as lectures and seminars overshadows the productivity of other scholars in the field of music education<sup>11</sup>. The basic aim of *GTML* is to provide the learner<sup>12</sup> with optimal conditions for developing audiation skills in a musically rich environment<sup>13</sup> and facilitate their musical development<sup>14</sup>. In view of the issues indicated by academics<sup>15</sup> and related to defining, describing and situating Edwin E. Gordon's music learning theory in the education system or, in fact, in educational theories, the intention of the author of this study is to attempt to answer the question: Does (and if so, to what extent) music learning theory of Edwin E. Gordon enjoy the status of a scientific theory?

### ***GTML* as a scientific theory in the light of an attempt (attempts) at achieving rationality in the context of undertaking educational research in music**

In **objectivism**, a theory is defined as a rational frame explaining human behaviour while in **subjectivism** as a set of meanings used to understand people's behaviour and their inner world<sup>16</sup>. Broadly speaking, a theory is a collection of general ideas which explain something or a set of statements explaining a particular phenomenon. In other words, a theory is a probable way of explaining facts established on the basis of quantitative empirical research, which strives to explain and predict particular phenomena. The intention of quantitative researchers

<sup>11</sup> D.L. Walters, *Edwin Gordon's Music Aptitude Work*, "The Quarterly" 1991, vol. 2, nos. 1–2, p. 64 (64–72).

<sup>12</sup> Age is of no importance here. Children are treated in the same way as adults. Starting from the auditory/vocal level, which is concerned with differentiation, through the level of word associations and ending with the third level, which is referred to as the synthesis of parts or, at the last stage of learning, the level of symbolic associations. In the part known as inference, we are dealing with generalising (auditory/vocal, word associations, graphic associations related to reading and writing music), creativity and improvisation (at auditory/speech level and the level of graphic associations) and theoretical understanding, which is the final stage of realising music learning theory. As cited in E.A. Zwolińska (ed.), *Teoria uczenia się muzyki według Edwina E. Gordona. Materiały z II seminarium autorskiego w Krynicy – 27 kwietnia – 3 maja 1995 roku*, Wydawnictwo WSP i AM, Bydgoszcz – Warszawa 1995, pp. 32–33. Age is only a variable in the context of stimulating musical abilities which are in development up to around 9 years of age.

<sup>13</sup> See more in *Teaching General Music: Approaches, Issues, and Viewpoints*, ed. C.R. Abril, B.M. Gault, Oxford University Press, New York 2016.

<sup>14</sup> D.W. Luce, *Music Learning Theory and Audiation: Implications for Music Therapy Clinical Practice*, "Music Therapy Perspectives" 2004, vol. 22, issue 1, pp. 26–33.

<sup>15</sup> Primarily at scientific conferences, in journals, reviews of scientific articles, dissertation(s) and polemical writings.

<sup>16</sup> L. Cohen, L. Manion, K. Morrison, *Research Methods in Education*, sixth edition, Routledge, New York 2007, p. 10.

is to determine, confirm and authorise generalisations, which lead to the creation of theories<sup>17</sup>. Therefore, scientific theories are rational and coherent explanations of the workings of the world since they constitute a starting point for further research or a result in themselves. Scientific theories are unverifiable; they can only be confirmable<sup>18</sup>, that is partly confirmed in view of their supposed applicability and by continued research, in which case they become part of the knowledge of a particular field (and discipline); however, they cannot, under any circumstances, be treated as a prophecy but only as an **extrapolation**<sup>19</sup>, i.e. a prediction of the course of a certain phenomenon under unknown conditions on the basis of familiarity with an analogous phenomenon in known conditions. According to Krzysztof Konarzewski:

[...] a theory allows us to make predictions about particular situations. If these predictions come true, the recognition of a theory rises<sup>20</sup>.

A scientific theory is merely a set of confirmed conclusions from thousands of scientific research reports conveyed in a specialist and professional language. Scientific theories are rational and coherent explanations of the workings of the world (phenomena, processes). It was shown that they are reliable not only on the basis of a substantial number of independent results confirming their credibility, but also because rigorous attempts at invalidating or, using the language of methodology of sciences, **falsifying**<sup>21</sup> them have failed. According to Jacek Piekarski and Danuta Urbaniak-Zajęc, the aforementioned reliability ought to be counted among the special kind of commitments, and as we inquire about it, we should take note of its social and cultural context<sup>22</sup>. A scientific theory is, therefore, a symbolic construct<sup>23</sup>, a systematic ideological structure which includes a group of empirical (experimental) laws concerning both the observed and supposed regularities existing in things and occurrences. A scientific theory is a structure that is suggested by these laws and aims to explain them in a rational and pragmatic way<sup>24</sup>, since, as Krzysztof Rubacha claims, it constitutes a starting point for re-

<sup>17</sup> C. Williams, *Research Methods*, "Journal of Business & Economic Research" 2007, vol. 5, no. 3, p. 66.

<sup>18</sup> J. Such, M. Szcześniak, *Filozofia nauki*, Adam Mickiewicz University Press, Poznań 2006, p. 79.

<sup>19</sup> As cited in <https://sjp.pwn.pl/sjp/ekstrapolacja;2556323.html> [access: 29.11.2019].

<sup>20</sup> K. Konarzewski, *Jak uprawiać badania oświatowe. Metodologia praktyczna*, WSiP, Warszawa 2000, p. 21. All translations – Artur Wagner.

<sup>21</sup> M.V. Pusic, K. Boutis, W.C. McGaghie, *Role of Scientific Theory in Simulation Education Research*, "Simulation in Healthcare" 2018, vol. 13, issue 3S, pp. 7–14.

<sup>22</sup> J. Piekarski, D. Urbaniak-Zajęc, *Dyskusja o wiarygodności akademickich dyscyplin wiedzy – wprowadzenie*, [in:] *Wiarygodność akademicka w edukacyjnych praktykach*, ed. J. Piekarski, D. Urbaniak-Zajęc, Lodz University Press, Łódź 2016, p. 10.

<sup>23</sup> K. Rubacha, *Metodologia badań nad edukacją*, Wydawnictwa Akademickie i Profesjonalne, Warszawa 2008, p. 23.

<sup>24</sup> As cited in <https://www.britannica.com/science/scientific-theory> [access: 28.11.2019].

search, and research puts its assumptions to a test in empirical reality only in the case of nomothetic explanations, that is the application of quantitative research<sup>25</sup>. The correctness of scientific theories is guaranteed by philosophy, especially in movements related to Scientism (neopositivism, pragmatism), which emphasise its methodological functions with philosophical reflection in the background; the latter is of considerable use to exact sciences as it deals with analysis of the language of science and evaluation of scientific methods through empirical testing, which is present in the verification or falsification of statements<sup>26</sup>. According to Jerzy Brzeziński, research procedure<sup>27</sup> must be “immersed” in a theoretical context<sup>28</sup> and, importantly,

even the most inventive and meticulously controlled and analysed experiment is of little worth in itself if it is not related to a particular system of theories (using Kuhn’s language – a paradigm<sup>29</sup>), to which it is only ancillary<sup>30</sup>.

What is particularly noticeable here is methodological scepticism, which is meant to reject uncertain and unclear knowledge<sup>31</sup>; for this reason, the theoretical framework (theories – M.K.) constitutes a starting point for conceptualising research projects, thus exercising control over the process of outlining the research and ensuring a structure that makes it possible to determine the philosophical, epistemological, methodological and analytical senses of the construction of research<sup>32</sup>. As Tadeusz Lewowicki rightly notes with respect to examining the structure and logic of a research procedure:

<sup>25</sup> K. Rubacha, *Metodologia badań nad edukacją*, p. 23.

<sup>26</sup> S. Opara, *Przedmiot i sposoby uprawiania filozofii*, [in:] *Podstawy filozofii*, ed. S. Opara, University of Warmia and Mazury Press, Olsztyn 1999, p. 19.

<sup>27</sup> L. Bresler, *Teacher Knowledge in Music Education Research*, “Bulletin of the Council for Research in Music Education” 1993, no. 118, pp. 1–20.

<sup>28</sup> J.M. Brzeziński, *O osobliwościach metodologicznych badań naukowych i diagnostycznych prowadzonych przez psychologów klinicznych*, “Roczniki Psychologiczne” 2016, XIX, 3, p. 439.

<sup>29</sup> Thomas Samuel Kuhn was a 20<sup>th</sup>-century American historian of science, philosopher and the author of the concept of history of science, which was critical of the cumulative view of progress and permanent rationality of research methods and highlighted the revolutionary leaps in the development of science related to shifts of paradigm, which is defined as a set of rules, terms and procedures perceived as true at a given time in history. As cited in *Słownik filozofii*, ed. A. Aduszkiewicz, Świat Książki, Warszawa 2004, p. 295.

<sup>30</sup> J. Brzeziński, *Badania eksperymentalne w psychologii i pedagogice*, Wydawnictwo Naukowe Scholar, Warszawa 2000, p. 14.

<sup>31</sup> A. Kucner, *Spor o poznawalność świata*, [in:] *Podstawy filozofii*, p. 19.

<sup>32</sup> It is best if the constructed research belongs to the quantitative trend with division into experimental and non-experimental. The first includes the method of experiment and quasi-experiment (in Poland, within pedagogical research, Stanisław Palka also calls it an experimental trial). Non-experimental strategies include the *ex post facto* research procedure (the researcher compares different groups – for instance two and more – in terms of an independent variable as a phenomenon that occurred in the past in order to determine any kind of relationship) and correlative research (determining whether the variables are related) as well as survey research (also known

In most general terms, this structure may be presented in the following way: aims and area of research – choice of theory – methodology of procedure (methods, tools, ways of compiling the results) that is consistent with the selected theory (theories) – interpretation of the results (with the use of the theory (or theories) that is established as fundamental) – attempts at generalisation, understanding new facts, phenomena or processes – occasionally, formulating new concepts, hypotheses and sometimes theories<sup>33</sup>.

This makes it possible to ascertain that a theory is a structure that exercises control over the research due to its ability to coherently explain (some) phenomena and relationships because it is, according to John W. Creswell, a strictly interconnected group of constructs (or variables), propositions or hypotheses that specifies the relationship between the variables<sup>34</sup>. At the same time, the choice of a theory must be clearly indicated by the researcher and emphasised at the very beginning of the research<sup>35</sup>. Scholars may also define a theory in line with John G. Wacker's view as a thought construct describing the relationships between observed and approximated units in the empirical world<sup>36</sup>. According to Jan Such and Małgorzata Szcześniak, this is because

the laws of science and scientific theories constitute – apart from scientific facts – the most important findings of scientific research<sup>37</sup>;

therefore, in the light of this statement, the scientific theory in question is also an empirical theory that was established as a result of the attempts at constructing a model with a certain degree of generality<sup>38</sup> on the basis of facts, information or practice. Notably, Adam Grobler writes that:

[T]he statements of a scientific theory cannot simply be deductive consequences of its axioms, a result of manipulation of symbols. They must have some sort of connection to experience, some kind of empirical interpretation<sup>39</sup>.

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as descriptive, in which the research summarises the characteristics of different groups, measures the attitudes and opinions of particular communities in relation to a given research problem). Different methods of obtaining knowledge are employed in educational research on music and the practice of teaching/learning it or perfecting musical abilities. The most accurate solutions, however, are based on experimental (including randomisation of the research trial) and quasi-experimental procedures (carried out in natural school or preschool groups). See more in D. Ary, L. Cheser Jacobs, Ch. Sorensen, *Introduction to Research in Education*, Wadsworth, Belmont 2006, 2010, pp. 26–29.

<sup>33</sup> T. Lewowicki, *O pryncypiach metodologicznych – wspomnienia czy standardy uprawiania nauki*, "Ruch Pedagogiczny" 2016, no. 1, p. 11.

<sup>34</sup> J.W. Creswell, *Research design. Qualitative, Quantitative, and Mixed Methods Approaches. Third Edition*, SAGE, Los Angeles – London – New Delhi – Singapore 2009, p. 51.

<sup>35</sup> C. Grant, A. Osanloo, *Understanding, selecting, and integrating a theoretical framework in dissertation research: creating the blueprint for your "house,"* "Administrative Issues Journal: Connecting Education, Practice, and Research" 2014, vol. 4, issue 2, pp. 12–13.

<sup>36</sup> J.G. Wacker, *A definition of theory: research guidelines for different theory-building research methods in operations management*, "Journal of Operations Management" 1998, no. 16, p. 364.

<sup>37</sup> J. Such, M. Szcześniak, *Filozofia nauki*, p. 72.

<sup>38</sup> G.L. Gutek, *Filozoficzne i ideologiczne podstawy edukacji*, Gdańskie Wydawnictwo Psychologiczne, Gdańsk 2003, p. 259.

<sup>39</sup> A. Grobler, *Metodologia nauk*, Wydawnictwo Znak, Kraków 2006, p. 142.

Ryszard Stachowski, on the other hand, cites Lev Vygotsky, who, being a theoretician, experimenter and, at the same time, a metapsychologist, assumed that

no scientific research must be undertaken before certain pre-empirical assumptions are made – oftentimes concealed in some kind of paradigm [...] <sup>40</sup>.

The aim of scientific cognition is to obtain knowledge that is general but, at the same time, accurate and simple <sup>41</sup>, so it is directly related to the process of building a scientific theory <sup>42</sup>. However, the aim of conducting research is also to enrich theoretical knowledge <sup>43</sup>. The empirical theory discussed herein is not fully axiomatic <sup>44</sup> as it does not completely satisfy the condition of idealisation <sup>45</sup> and only partially fits into the logical system <sup>46</sup>. This has already been shown by the author of *GTML* Edwin E. Gordon, who claimed that all explanations given as part of music learning theory are only partial, incomplete and still open to changes <sup>47</sup> and additions, which may be interpreted as encouragement to conduct exploratory (formulative) <sup>48</sup> and confirmatory <sup>49</sup> research that should, in turn, begin

<sup>40</sup> R. Stachowski, *Lew S. Wygotski – prekursor psychologii o dwóch obliczach*, [in:] L.S. Vygotsy, *Wybrane prace psychologiczne II: dzieciństwo i dorastanie*, ed. A. Brzezińska, M. Marchow, Wydawnictwo Zysk i S-ka, Poznań 2002, p. 29.

<sup>41</sup> A. Sadowski, A. Szydlik, *Poznanie naukowe i kanony nauki*, “Optimum. Studia Ekonomiczne” 2016, no. 2 (80), p. 59.

<sup>42</sup> At the same time, the opposite may be true when practice itself (from Greek *action*) is, in fact, a conscious and deliberate activity of a person whose goal is to apply a certain kind of knowledge, known as a theory, in life. See *Słownik filozofii*, p. 414.

<sup>43</sup> Relationship Between Theory And Research. Retrieved from <https://www.ukessays.com/essays/psychology/what-is-the-relationship-between-theory-and-research-psychology-essay.php?vref=1> [access: 29.11.2019].

<sup>44</sup> Axiomatic theory, otherwise known as a formal theory, is a deductive theory, and hence is characterised by high logical coherence of statements, which include axioms (that is generic terms) used to define all the remaining terms of a given theory (for example in mathematics or logic). As cited in <http://stareaneksy.pwn.pl/pedagogika/index.php?id=9&od=552> [access: 28.11.2019].

<sup>45</sup> The idealising nature of scientific theories leads to the fact that the theory of empirical sciences constitutes a sequence of laws of an increasingly lower level of theorisation – that is the so-called idealisation – and moving towards subsequent laws of increasingly lower number of idealising assumptions makes it necessary to take into account the rules of concretisation, which are not logical by nature and merely constitute a synthetic claim. As cited in J. Such, M. Szcześniak, *Filozofia nauki*, p. 73.

<sup>46</sup> Because as such it would not constitute a description (explanation) of particular fragments or aspects of the world provided to us in the experience. As cited in J. Such, M. Szcześniak, *Filozofia nauki*, p. 73.

<sup>47</sup> Author’s own notes from the 5th Gordonian Seminar in Ciechocinek (16–31 August 2004).

<sup>48</sup> “It may produce a description of important facts or contribute to the discovery of interesting empirical relationships. Such relationships may, in turn, become inspiration for building a theory [...]” As cited in T. Sosnowski, *Doceńmy badania eksploracyjne*, “Roczniki Psychologiczne” 2012, vol. 15, no. 3, p. 54.

<sup>49</sup> In the case of this type of research, “a theory is its crux, and practice plays instrumental role, i.e. is a space (criterion) for verifying the theory.” As cited in K. Rubacha, *Standardy badań społecznych. Problematyzowanie praktyki edukacyjnej*, “Przegląd Badań Edukacyjnych” 2013, no. 16 (1), p. 44.



with the choice of a scientific theory and carefully formulated hypotheses<sup>50</sup>. To summarise, the most comprehensive definition of a theory was put forward by Kathlin L. Read, for whom a scientific theory is a collection of interconnected assumptions and terms which presents a systematic view of a particular phenomenon and determines the relationship between the coexisting variables in order to explain and predict phenomena<sup>51</sup>, as

a set of observation statements describing the state of things is not sufficient for science. Only organising them in a structure of laws and theories [...] builds scientific knowledge of reality<sup>52</sup>.

### **GTML as a scientific, empirical and educational theory in the light of empirical themes and reflections on audiation, that is musical thinking.**

The theory of learning is a theory that explains the way in which we learn, that is acquire, store and recollect knowledge<sup>53</sup>. Edwin G. Gordon's music learning theory is not related to the conventional theory of music concerning the phenomena of music as a form of art and is not a method as it does not specify what to teach and when. *GTML* may, however, constitute the core of some kind of pedagogy, a method or approach to teaching. In educational practice (at school and/or out of it), music learning theory may be the basis for a countless number of methods or approaches applied to teaching music<sup>54</sup>, especially in early (kindergarten and early school) music education since, according to Agnieszka Weiner, it is a critical period for the development of the majority of musical predispositions<sup>55</sup> and must not be wasted<sup>56</sup>; for this reason, it is proposed that scientific and diagnostic research be conducted on the basis of the theories of music education<sup>57</sup>.

<sup>50</sup> B. Reite, *Theory and Methodology of Exploratory Social Science Research*, "International Journal of Science and Research Methodology" 2017, vol. 5, issue 4, pp. 131–134.

<sup>51</sup> K.L. Read, *Understanding Theory: The First Step in Learning About Research*, "The American Journal of Occupational Therapy" 1984, vol. 38, no. 10, pp. 677.

<sup>52</sup> M. Rószkiewicz, J. Perek-Białas, D. Więziak-Białowolska, A. Zięba-Pietrzak, *Projektowanie badań społeczno-ekonomicznych. Rekomendacje i praktyka badawcza*, Wydawnictwo Naukowe PWN, Warszawa 2013, p. 15.

<sup>53</sup> <https://colorinmypiano.com/2018/01/15/music-learning-theory-exactly/> [access: 9.12.2019].

<sup>54</sup> Ibid.

<sup>55</sup> Cf. E. E. Gordon, *Umuzycznienie niemowląt i małych dzieci*, Wydawnictwo Zamiast Korepejtycji, Kraków 1997.

<sup>56</sup> A. Weiner, *Badanie jako akt twórczy – refleksje na marginesie raportu z ogólnopolskich badań kompetencji muzycznych absolwentów I etapu edukacyjnego*, "Lubelski Rocznik Pedagogiczny" 2019, vol. 38, z. 1, p. 24.

<sup>57</sup> E.E. Gordon, *Music education research. Taking a panoptic measure of reality*, GIA Publication Inc., Chicago 2005; G.F. Welch, *Addressing the multifaceted nature of music education: An activity theory research perspective*, "Research Studies in Music Education" 2007, 28(1), s. 23–

As a **scientific, empirical and educational** theory, using the language of J. Such and M. Szcześniak<sup>58</sup>, music learning theory, which is the result of the design goals of its author, Edwin E. Gordon, is a set of general concepts (assumptions) that explain the process of learning music<sup>59</sup> and, as Richard Grunow claims, a model construct of teaching and learning music in a sequential manner<sup>60</sup>. Moreover, as indicated by Christopher Azzara, *GTML* constitutes an outline of basic and, at the same time, logical rules essential to understanding the processes involved in learning music; owing to its open nature of a paradigm<sup>61</sup>, it provides arguments and numerous recommendations that are indispensable to educational processes concerning music, that is teaching and learning music<sup>62</sup>, and, what is immensely distinctive, it is one of the scientific theories that examine human musical development in a **systematised** way, focusing research on the period of childhood, when the most important qualitative changes take place<sup>63</sup>. According to Joanne Rutkowski, *GTML* has become a theoretical model that explicitly justifies musical development of a child, presents the premises of music education based on long-standing longitudinal research on development<sup>64</sup>, the concept of developing and stabilised musical aptitude, expressive and perceptive musical

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37; B.P. Smith, *Goal orientation, implicit theory of ability, and collegiate instrumental music practice*, "Psychology of Music" 2005, 33(1), pp. 36–57; J. Terry Gates, *Music Participation: Theory, Research, and Policy*, "Bulletin of the Council for Research in Music Education" 1991, no. 109, pp. 1–35; S. Hinduja, J.R. Ingram, *Social learning theory and music piracy: the differential role of online and offline peer influences*, "Criminal Justice Studies" 2009, 22, 4, p. 405420; B. Smolej Fritz, C. Peklaj, *Processes of self-regulated learning in music theory in elementary music schools in Slovenia*, "International Journal of Music Education" 2011, 29(1), pp. 15–27.

<sup>58</sup> J. Such, M. Szcześniak, *Filozofia nauki*, p. 31.

<sup>59</sup> G.L. Gutek, *Filozoficzne i ideologiczne podstawy edukacji*, p. 259.

<sup>60</sup> R. Grunow, *Music Learning Theory: A Catalyst for Change in Beginning Instrumental Music Instruction*, [in:] *The development and Practical Application of Music Learning Theory*, ed. M. Runforla, C. Crump Taggart, GIA Publications Inc., Chicago 2005, p. 179.

<sup>61</sup> Which Edwin E. Gordon highlighted himself at scientific seminars in Poland, claiming that his theory is open and may be supplemented with subsequent attributes, corrections or discoveries through empirical research.

<sup>62</sup> As cited in G. Beall, *Learning Sequences and Music Learning*, "The Quarterly Journal of Music Education" 1991, 2(1–2), p. 87 (87–96).

<sup>63</sup> There is a simple reason for that. It is in early childhood that we observe the greatest potential for development in children, both in the context of the development of speech (language) and music. Thus, for instance, the research on the perception of the sounds of speech by the human brain obtained through electrophysiological exploration (MMN) reveals that memory traces unique for language develop during the first few months of life for the native language. See R. Näätänen, *Percepcja dźwięków mowy przez ludzki mózg: dane elektrofizjologiczne*, [in:] *Psychologia różnic indywidualnych*, ed. M. Marszał-Wiśniewska, T. Klonowicz, M. Fijałkowska-Stanik, Gdańskie Wydawnictwo Psychologiczne, Gdańsk 2003, pp. 22–36.

<sup>64</sup> M.E. Byrd, *Gordon's sequential music learning and its applicability to general music*, "The Quarterly Journal of Music Education" 1991, 2(1–2), pp. 59–62.

abilities and a music teacher education model<sup>65</sup> that would be appropriate for contemporary challenges. At the same time, *GTML* shows how to teach music through audiation, the core of which are basic musical abilities (tonal, rhythmic and harmonic) defined as the potential of each person who is acquiring musical abilities<sup>66</sup>. It appears that audiation, as a musical ability in itself, concerns all the spheres of learning, namely **psychomotoric** (development of motor and kinaesthetic abilities), **cognitive** (acquisition of musical knowledge in a sequential way) and, particularly, **affective** sphere<sup>67</sup> (emotional, related to sensitivity) understood as the readiness to receive, internalise and share what the student has learnt<sup>68</sup>; its condition is to some degree determined by educational proxemics<sup>69</sup>. Musical abilities are, as I have previously noted, a result of the conjunction of nature and culture, and *GTML* provides a theoretical framework for the advanced processes of music education<sup>70</sup>. Moreover, what is important in the context of conducting scientific research on music audiation, according to Paweł A. Trzos:

[t]he issues of the scientific analysis of the process of reaching musical maturity are related to the fact that the methodological difficulty we have to struggle with concerns the applicability, verifiability and generativeness of the cognitive construct of knowledge of the development of musical thinking, i.e. audiation. The contemporary music learning theory of E. E. Gordon may be an important basis for theoretical problematisation of the analysis of maturity, which is connected with the development of music audiation, that is its internal understanding in different types of musical activity<sup>71</sup>.

Basically, it was the research on the nature, development and measurement of musical ability initiated by Edwin E. Gordon that gave rise to the theories of music learning<sup>72</sup> and establishing the nature of audiation; building “musical vocabulary” has become the key domain of teaching activity because:

<sup>65</sup> J. Rutkowski, *Music Learning Theory and Gordon's Model in Teacher Education*, [in:] *The development and Practical Application of Music Learning Theory*, ed. M. Runforla & C. Crump Taggart, GIA Publications Inc., Chicago 2005, p. 331.

<sup>66</sup> Cf. E.E. Gordon, *Sekwencje uczenia się w muzyce. Umiejętności, zawartość i motywy*, WSP, Bydgoszcz 1999.

<sup>67</sup> Understood interculturally. See T. H. Fritz, P. Schmude, S. Jentschke, A.D. Friederici, S. Koelsch, *From Understanding to Appreciating Music Cross-Culturally*, “PLoS ONE” 2013, 8(9), e72500, and J. Sloboda, *Umysł muzyczny. Poznawcza psychologia muzyki*, AMFC, Warszawa 2002.

<sup>68</sup> F. Caruso, T. Di Mascio, M. Pennese, *Gamify the Audiation: the CrazySquare project*, [https://www.researchgate.net/publication/333349650\\_Gamify\\_the\\_Audiation\\_The\\_CrazySquare\\_Project](https://www.researchgate.net/publication/333349650_Gamify_the_Audiation_The_CrazySquare_Project) [access: 10.12.2019].

<sup>69</sup> Cf. D. Plucińska, *Proksemika a praktyka edukacyjna*, [in:] *Twórcza codzienność w kształceniu i wychowaniu. Teoria i praktyka edukacyjna*, ed. M. Kołodziejki, Wydawnictwo AH, Pułtusk 2014, pp. 137–146.

<sup>70</sup> See more in C.C. Taggart, *Music Learning Theory*, [in:] *Teaching General Music*, ed. C.R. Abril, B.M. Gault, Oxford University Press, 2016.

<sup>71</sup> P.A. Trzos, *O dojrzałości muzycznej w kontekście rozwoju audiacji*, “Przegląd Pedagogiczny” 2018, no. 1, p. 59.

<sup>72</sup> L. Taetle, R. Cutietta, *Learning Theories as Roots of Current Musical Practice and Research*, [in:] *The new handbook of research on music teaching and learning: A project of the Music*

children learn to think as a natural consequence of hearing and participating in language<sup>73</sup>.

Developing audiation competence in children takes place through active participation in social learning, which corresponds to Lev Vygotsky's cognitive-mediation theory<sup>74</sup> and social cognitive theory of learning by Albert Bandura<sup>75</sup>. Psychologists warn that human behaviour is shaped as a result of combining environmental (external and internal), behavioural and individual (cognitive) factors in the process of learning<sup>76</sup>, and significant others<sup>77</sup> may play the role of facilitators<sup>78</sup> in the process of teaching music to children in the period of early childhood<sup>79</sup> as

each increased musical activity is simultaneously an activity of the social type<sup>80</sup>.

Therefore, music learning theory belongs to the group of theories which concern the social aspects of learning; they are well known in the world of science as **social constructivism**<sup>81</sup>, **sociocultural theory or activity theory**<sup>82</sup>, in which the extra-personal and extra-individual learning of rhythmic and tonal patterns as well as communicating in music through improvisation while consciously using musical language is becoming a unique phenomenon. In Noam Chomsky's view,

*Educators National Conference*, ed. R. Colwell, C.P. Richardson, Oxford University Press, Oxford – New York 2002, pp. 279–298.

<sup>73</sup> E.E. Gordon, *Sekwencje uczenia się w muzyce...*, p. 461.

<sup>74</sup> J. Christensen, *A critical reflection of bronfenbrenner's development ecology mode*, "Problems of Education in the 21st Century" 2016, vol. 69, p. 23.

<sup>75</sup> J.E. Grusec, *Social learning theory and developmental psychology: The legacies of Robert R. Sears and Albert Bandura*, [in:] *A century of developmental psychology*, ed. R.D. Parke, P.A. Ornstein, J.J. Rieser, C. Zahn-Waxler, American Psychological Association 1994, pp. 473–497.

<sup>76</sup> L.T. Harinie, A. Sudiro, M. Rahayu, A. Fatchan, *Study of the Bandura's Social Cognitive Learning Theory for the Entrepreneurship Learning Process*, "Social Sciences" 2017, vol. 6, no. 1, pp. 1–6.

<sup>77</sup> Playing the role of "crystallizing agents."

<sup>78</sup> "A facilitator is a person who helps the participants to learn in an experimental group." As cited in A. Marszał, *Proces zarządzania z wykorzystaniem innowacji społecznych w firmie – facylitacja*, "Zeszyty Naukowe Politechniki Częstochowskiej. Zarządzanie" 2018, no. 29, p. 31.

<sup>79</sup> See E.E. Gordon, *Umuzycznienie niemowląt i małych dzieci*.

<sup>80</sup> J. Sloboda, *Umysł muzyczny...*, p. 1.

<sup>81</sup> Constructivism is fully consistent with the deliberations on music learning discussed in this article because it is based on the premise that cognition (learning) is a result of "mental constructions." In other words, students learn by matching new pieces of information to the ones they already have. Constructivists believe that the processes of learning are significantly affected by context as well as the beliefs and attitudes of students. Constructivism is a theory of learning that explains how people may learn and broaden their knowledge; therefore, it is directly applicable in education. Furthermore, the theory suggests that people construct knowledge and meaning on the basis of their personal experiences. As cited in S. Olusegun Bada, *Constructivism Learning Theory: A Paradigm for Teaching and Learning*, "Journal of Research & Method in Education" 2015, vol. 5, issue 6, ver. 1, p. 66.

<sup>82</sup> S.M. Wilson, P.L. Peterson, *Theories of Learning and Teaching...*, pp. 1–4.

an essential role is played by the very preparation for conscious learning, that is taking advantage of one's own mental potential, which is fundamentally shaped in early childhood<sup>83</sup> and most intensely in infancy<sup>84</sup>. *GTML* is, therefore, **both a theory of learning and a theory of teaching** as it organises the process of learning in a *social* (students interacting with each other, joint organisation of classes, learning from each other) and, at the same time, individual way (noticing individual differences in musical abilities, tracking the musical development of learners, assigning rhythmic and tonal patterns on the basis of their level of musical aptitude)<sup>85</sup>. However, according to Richard Colwell and Frank Abrahams, Edwin E. Gordon was also a behaviourist<sup>86</sup> since the starting point for introducing tonal and rhythmic patterns in building up the musical resources of a child is the theory of conditioning, which consists in training the individual to react to musical stimuli<sup>87</sup>. Since we know little about the way these stimuli are processed into audiation in the learner's mind, I also allow, in line with Suzanne M. Wilson and Penelope L. Peterson, that the answer to this problem should be sought directly in the findings of cognitive psychology. Cognitivists claim that in order to learn, the human brain actively seeks new stimuli in its environment. This, therefore, suggests that children always try to understand the world by actively creating (constructing) it, mainly during interpersonal interactions with their surroundings and conversations (or, for example, joint signing). Even if they are only observing a teacher who is singing (or just rhythmising or even speaking), they may be actively involved in the process of understanding<sup>88</sup>. According to Edwin E. Gordon, acquiring and assimilating musical abilities takes place through sequential interaction with musical environment, combining knowledge with information on musical aptitude and audiation<sup>89</sup> because, as John Sloboda adds, "every step forward is built upon what already exists."<sup>90</sup> This is consistent with the claim of Małgorzata Suświłło, which is significant from the perspective of the continuity of scientific knowledge that is capable of penetrating the deepest layers of educational reality, according to whom

the most recent achievements of scientific research should constitute the basis for all kinds of educational activity, including planning educational programmes and teaching strategies in the field of musical education<sup>91</sup>;

<sup>83</sup> M. Kołodziejcki, P.A. Trzos, *Środowiskowy wymiar uczenia się muzyki w kontekście rozwoju audiacji*, "Studia Pedagogiczne. Problemy Społeczne, Edukacyjne i Artystyczne" 2013, no. 22, p. 164.

<sup>84</sup> A. Ravnigani, B. Thompson, P. Filippi, *The Evolution of Musicality: What Can Be Learned from Language Evolution Research?*, "Frontiers in Neuroscience" 2018, vol. 12, article 20, pp. 1–7.

<sup>85</sup> S.M. Wilson, P.L. Peterson, *Theories of Learning and Teaching...*, p. 2.

<sup>86</sup> R. Colwell, F. Abrahams, *Edwin Gordon's Contribution: An Appraisal*, "The Quarterly Journal for Music Teaching and Learning" 2010, no. 1–2, p. 19.

<sup>87</sup> S.M. Wilson, P.L. Peterson, *Theories of Learning and Teaching...*, p. 2.

<sup>88</sup> *Ibid.*, p. 3.

<sup>89</sup> E.E. Gordon, *Sekwencje uczenia się w muzyce...*, p. 50.

<sup>90</sup> J. Sloboda, *Umysł muzyczny...*, p. 235.

<sup>91</sup> M. Suświłło, *Podstawy rozwijania muzykalności dziecka – implikacje dla edukacji*, "Aspekty Muzyki" 2018, vol. 8, p. 39.

such opportunities are created by the audiation model of musical education<sup>92</sup>, named so by the “Bydgoszcz School,” which has its roots in Edwin E. Gordon’s music learning theory, that is the one which describes various processes of sequential learning of music<sup>93</sup> and exposition to music, introducing different affective emotions to everyday (and festive) life. It is then that an aesthetic, intellectual and emotional experience is created in response to cognitive requirements<sup>94</sup>.

In Beata Bonna’s view, the audiation model of music education

finds use in planning the process of teaching and learning music regardless of the age of students, form of the classes, studies or a course for a specific group of people. This model encompasses the process of the development of musicality from birth to adulthood, although it requires shifting from rote learning to developing musical thinking, described by Gordon as audiation<sup>95</sup>.

This non-figurative fact, which is characteristic of the perspective of Gordonian pedagogy, is emphasised by Paweł A. Trzos, who clearly highlights the theoretical justification concerning the reallocation of pedagogical interest from the process of teaching to the process of learning and the extensive studies on the theoretical, empirical and didactic wealth of *GTML*<sup>96</sup>. In the light of the above, *GTML* falls within the scope of the scientific penetration of pedagogy of music, which clearly accentuates the connection with pluralist methods of teaching music and concerns educational research on the procedures of learning music, teaching goals and learning contents<sup>97</sup>. According to Alina Motycka,

a scientific theory, as a set of propositions that is methodologically defined in terms of its cognitive values, is generally situated within the order of thinking oriented towards realities that are empirical, i.e. conditional, which differentiates it from a myth, as it is situated within the order of mythical and metaphysical thinking<sup>98</sup>;

hence, music learning theory is doubtless an empirical theory because, in accordance with the descriptive view of science, it plays a descriptive role, adopting the simplest possible rule of describing events, which assumes that rhetorical claims translate into claims concerning observable phenomena and the relationships between occurrences<sup>99</sup>, and is thereby consistent with the system of strictly defined

<sup>92</sup> B. Bonna, *Audiacyjny model edukacji muzycznej*, “Aspekty Muzyki” 2018, vol. 8, p. 105.

<sup>93</sup> E.E. Gordon, *Taking a Look at Music Learning Theory: An Introduction*, “General Music Today” 1995, vol. 8, no. 2, pp. 2–8.

<sup>94</sup> Cf.: J. Kantor-Martynuska, *Emotional responses to music: interaction of musical, individual and situational factors*, “Studia Psychologiczne” 2016, 54(1), pp. 47–63.

<sup>95</sup> B. Bonna, *Audiacyjny model...*, p. 106.

<sup>96</sup> P.A. Trzos, *Pedagogika muzyki w kręgu zainteresowania nauczycieli muzyki. Wybrane rekomendacje dla wczesniej edukacji*, “Aspekty Muzyki” 2018, vol. 8, p. 152.

<sup>97</sup> L. Kataryńczuk-Mania, M. Kołodziejcki, M. Kisiel, *Orientacje w metodologii badań muzyczno-edukacyjnych*, Wydział Pedagogiki, Psychologii i Socjologii UZ, Zielona Góra 2018, p. 55.

<sup>98</sup> A. Motycka, *Rozważania dotyczące statusu teorii naukowej*, “Roczniki Filozoficzne” 2006, vol. 54, no. 2, p. 163.

<sup>99</sup> J. Such, M. Szcześniak, *Filozofia nauki*, pp. 74–75.

terms (such as audiation, developing and stabilised musical aptitude), definitions (macro beat, micro beat, inculturation, education), axioms (the concept of developing musical aptitude and its stabilisation) and statements (the nature of musical aptitude, objective measurement and subjective assessment), explaining in a descriptive and partially normative way the selected fragments of the “world of culture” – in this case the processes of learning music by humans. Scientific theories create laws that go beyond accessible data; therefore, they are prognostic of what will happen and concern incidents that have not yet been examined. The results of the analysis of theories in the context of empirical research may be used as suggestions for the development or critique of scientific research, or may suggest the need for compiling and perfecting a theory<sup>100</sup>. If *GTML* describes the way in which human beings learn when they learn music<sup>101</sup>, then, with the use of description, it shows the way of describing events, which makes it impossible to assign logical values of true and false<sup>102</sup> to theoretical statements; however, it is possible to carry out developmental research on music learning theory by formulating research problems, asking questions<sup>103</sup> or making hypotheses<sup>104</sup>. Thought processes oriented towards creating ideas and their selection, known as making hypotheses, that is ideas for solutions, possible discoveries or inventions (to construct, produce) are becoming socially desirable in the context of probing the validity of the analysed theory. The solution to a hypothesis is its assessment in terms of its consistency with reality, that is assessment of the degree of authenticity<sup>105</sup>. E.E. Gordon’s music learning theory clearly shows that objective audiation is determined by musical abilities whose essence consists in the conjunction of nature and culture<sup>106</sup>, and the processes of learning music depend on the quality of everyday education and mental development of the students<sup>107</sup>. The approach to the processes involved in learning music adopted by Edwin E. Gordon and his environment<sup>108</sup>, which is present in *GTML*, constitutes a result of extensive field research conducted by Edwin E. Gordon and his associates, and the theory itself is focused on developing audiation, which the author understands as hearing and understanding music in the person’s mind; it is also an enunciation of the fact that

<sup>100</sup> K.L. Read, *Understanding Theory...*, p. 677.

<sup>101</sup> E. E. Gordon, *Audiation, Music Learning Theory, Music Aptitude, and Creativity*, “Suncoast Music Education Forum on Creativity” 1989, p. 4.

<sup>102</sup> Cf. J. Such, M. Szcześniak, *Filozofia nauki*, p. 75.

<sup>103</sup> As Roger Scruton claims: “we are thinking beings and it is our nature to ask questions.” As cited in R. Scruton, *Przewodnik po filozofii dla inteligentnych*, Wydawnictwo Naukowe PWN, Warszawa 2002, p. 18.

<sup>104</sup> K.L. Read, *Understanding Theory...*, p. 678.

<sup>105</sup> J. Such, M. Szcześniak, *Filozofia nauki*, pp. 30–31.

<sup>106</sup> I assume that the results of measurement of musical aptitude, which stems from the conjunction of nature and culture, show how much influence these two factors have on the level of aptitude.

<sup>107</sup> E.E. Gordon, *Sekwencje uczenia się w muzyce...*, p. 46.

<sup>108</sup> <https://giml.org/> [access: 30.11.2019].

people can be musically active from the beginning of their life, communicating their needs to the environment and demanding that these needs be satisfied at the right time and in the right way<sup>109</sup> owing to the sequential methods of teaching music which are helpful in acquiring musical knowledge in a systematised (step by step) way<sup>110</sup>. Music learning theory occupies an important place among world-renowned systems of music education by C. Orff, E. Dalcroze and Z. Kodály<sup>111</sup> or S. Suzuki, although their structure, content and lack of methodological background mean that they are not theories.

While a scientific theory such as *GTML* may explain the complexity of the processes involved in learning music, sometimes even in a single sentence, the process of obtaining this knowledge often takes decades and consists in using different research procedures in order to, finally, receive confirmation or invalidation (rejection) of particular ideas before they become a theory<sup>112</sup>. In principle, one might summarise the deliberations and assume, in line with Adam Sadowski and Anna Szydlik, that since

science is a field of knowledge which constitutes a set of research results that is based on previous assumptions by different researchers [...] <sup>113</sup>,

and cognition is the main function of science<sup>114</sup>, music learning theory, which Edwin E. Gordon worked on from the 1960s to the second half of the second decade of the 21st century<sup>115</sup>,

indicates the order in which we should learn music in order to understand it. It explains what the learner must know at each stage of learning, what readiness they must obtain and in what in order to progress to higher stages without difficulties [...]. Music learning theory, together with its practical applications, concerns the order of activities in the process of learning<sup>116</sup>

and is, therefore, both an empirical and educational theory. The opponents of music learning theory claim that it is not sufficiently substantiated by science, hence experimentally. Well, if Lisa M. Hess counts among its attributes its functionality and the fact that it is thoroughly grounded in pedagogy of music and supported by decades of scientific observations of children's ways of learning music, an

<sup>109</sup> Cf. A. Brzezińska, *Spoleczna psychologia rozwoju*, Wydawnictwo Naukowe Scholar, Warszawa 2005, p. 14.

<sup>110</sup> See E.E. Gordon, D.G. Woods, *Zanurz się w program nauczania muzyki. Działania w kolejności uczenia się. Podręcznik dla nauczycieli*, Wydawnictwo WSP, Bydgoszcz 1999.

<sup>111</sup> B. Bonna, *Research on the applications of E.E. Gordon's Theory of music learning in the music education in Poland*, "Kultura i Edukacja" 2013, no. 6 (99), p. 69.

<sup>112</sup> J.G. Wacker, *A definition of theory...*, p. 361.

<sup>113</sup> A. Sadowski, A. Szydlik, *Poznanie naukowe i kanony nauki*, p. 56.

<sup>114</sup> W. Strawiński, *Funkcja i cele nauki – zarys problematyki metodologicznej*, "Zagadnienia Naukoznawstwa" 2011, no. 3 (189), p. 321.

<sup>115</sup> Edwin E. Gordon died on 4 December 2015.

<sup>116</sup> E.E. Gordon, *Sekwencje uczenia się w muzyce...*, p. 47.



accurately rationalised theory of audiation, the sequential ways of learning music and, most importantly, the systematic and insightful musical and educational research leading to a holistic, theoretical and praxial understanding of the cognitive processes that underly the learning of music<sup>117</sup>, then it is difficult not to acknowledge its scientific nature in the face of such methodological and empirical evidence. According to Alina Motycka,

A theory is true (or plausible) if it is formulated in a scientific way on the basis of experimental material collected through observation and testing, and this is guaranteed by the method with which that truth is reached. The knowledge provided by such a theory is – in line with this idea – reliable and objectively proven by passive registration of facts and attention to intersubjective communicability and observational controllability of linguistic expressions<sup>118</sup>.

Since Edwin E. Gordon's education in both music and pedagogy, crowned with a doctorate and the position of professor at university, coincided with a period of bias in favour of behaviourism (stimulus–reaction)<sup>119</sup> in psychological research, the author of *GTML* was fully immersed in the methodological tradition of experiment and observation<sup>120</sup>, inferential statistics and methodology based on testing, which reinforced his trust, and later manifested itself in his works, in the empirical and positivist research model<sup>121</sup>; this proves Karl R. Popper's proposition that

[t]he fundamental problem of the theory of knowledge is the clarification and investigation of this process by which [...] our theories may grow or progress<sup>122</sup>.

Alina Motycka also believes that

before “philosophical headaches” started growing in the second half of the last century, inductionism, which had reigned for three centuries, reinforced the belief of philosophers of science that science is best at fulfilling the goal established – with the improvement of

<sup>117</sup> L.M. Hess, *Learning in a Musical Key: Insight for Theology in Performative Mode*, Princeton Theological Monograph Series, Wipf & Stock Pub, 2011, p. 102.

<sup>118</sup> A. Motycka, *Rozważania dotyczące statusu teorii naukowej*, pp. 164–165.

<sup>119</sup> Behaviourism refers to a psychological approach that puts emphasis on scientific and objective methods of research. This approach, however, only pertains to observable behaviour on a stimulus-response basis and states that all kinds of behaviour are determined by interaction with environment.

<sup>120</sup> An experiment is “an experimental procedure intended to resolve a theoretical problem, in the course of which the phenomenon in question is triggered or its course is affected by means of modification [...]. An experimental procedure is performed in order to observe phenomena under conditions controlled by the researcher,” while an observation “is different [...] from an experiment in that it concerns phenomena occurring (in general or completely) independently from the researcher.” As cited in J. Such, M. Szcześniak, *Filozofia nauki*, s. 87 i 88.

<sup>121</sup> E.E. Gordon, *Roots of music learning theory and audiation*, GIA Publications, Chicago 2011, pp. 3–4.

<sup>122</sup> K.R. Popper, *Wiedza obiektywna. Ewolucyjna teoria epistemologiczna*, Wydawnictwo Naukowe PWN, Warszawa 2002, p. 50.

earthly existence in mind – by F. Bacon through reaching (discovering) the truth of the surrounding world. Inductionism provided a detailed recipe for achieving that goal. Conventionally, such course of action results from a sequence of subsequent steps taken by a researcher, who gathers, classifies and describes facts and arrives at a hypothesis by drawing inductive conclusions on their basis; the hypothesis, in turn, achieves the status of a theory once it is subjected to empirical testing (confirmation)<sup>123</sup>.

It is thanks to inductionism, which is both a scientific and philosophical method of identifying a general regularity on the basis of separately observed incidents<sup>124</sup>, that Edwin E. Gordon systematically and meticulously broadened the knowledge of musical development, expanding music learning theory, which is directly related to the processes of learning and places key importance on education, mental development of students<sup>125</sup> and the idea that people learn throughout their entire lives, although he did stress the fact that learning is more effective at certain periods in human development; in that, he referred to the roots of Maria Montessori's system of early childhood education, which puts emphasis on spontaneous activity and training the child's senses<sup>126</sup>. In the context of education, therefore, Edwin E. Gordon's theory exhibits the influence of at least several other scientific theories of education, chiefly Jerome Bruner's (constructivist theory, developmental theory), Jean Piaget's (constructivist, cognitive, developmental), Lev Vygotsky's (constructivist, developmental) and Albert Bandura's (behavioural)<sup>127</sup>. The fundamental category of Edwin E. Gordon's music learning theory is "quality," which, shaped by musical training with the use of tonal and rhythmic patterns, is the result of combined efforts of, among others, human cognitive senses and, predominantly, hearing. Anna Bielawa invokes the concept of "quality" as she refers to antiquity; the Greek word for "quality" is *poiotes*. This term was first used by Plato, who thought that "the quality of concrete objects is the degree to which they achieve perfection."<sup>128</sup> For *GTML*, the highest quality is **understanding music** because "[m]usic learning theory offers guidance and direction for the development of appropriate method, because music learning theory is initiated with the sequential objective of audiation and leads to the comprehensive objective of enjoyment of music through understanding. Music learning theory structures the logical order of sequential objectives students learn in terms of stages of audiation to achieve comprehensive objectives associated with types of audiation."<sup>129</sup>

<sup>123</sup> A. Motycka, *Rozważania dotyczące statusu teorii naukowej*, p. 164.

<sup>124</sup> *Słownik filozofii*, pp. 250.

<sup>125</sup> E.E. Gordon, *Sekwencje uczenia się w muzyce...*, pp. 48–49.

<sup>126</sup> *Podstawy teorii uczenia się muzyki według Edwina E. Gordona*, ed. E.A. Zwolińska, Wydawnictwo AB, Bydgoszcz 2000, p. 24.

<sup>127</sup> See more in M. Kołodziejski, P.A. Trzos, *Środowiskowy wymiar uczenia się muzyki...*, pp. 163–178.

<sup>128</sup> As cited in A. Bielawa, *Postrzeganie i rozumienie jakości – przegląd definicji jakości*, "Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania" 2011, no. 21, 2011, p. 143.

<sup>129</sup> E. Gordon, *Sekwencje uczenia się w muzyce...*, p. 52.

## On the processes of learning music in three perspectives

An important aspect of music learning theory involves starting from the sense of hearing (and the action of listening) rather than vision because the main goal is to learn music and not about music<sup>130</sup>. In my opinion, we are dealing with argumentation that is at least trichotomic in nature. Firstly, learning music consists in experiencing it in a perceptive and expressive way<sup>131</sup>, from imitation to understanding. As Dorota Klus-Stańska notes, this is the case because

the source of progress here is the “tension” that results from experiencing different perspectives on the ways in which we understand the world.<sup>132</sup>

A child’s knowledge is formed in its mind thanks to its cognitive abilities and the influence of the environment; the differences in the way that knowledge is understood by scientists (mainly J. Piaget, L.S. Vygotsky and J.S. Bruner) are more related to personal experiences in building it<sup>133</sup>. Unfortunately, many teachers still put emphasis on such methods of teaching music that rely on intensifying visual sensations<sup>134</sup> instead of highlighting the auditory ones. Secondly, teaching about music involves focusing on transmission and delivery, resulting in an approach that is oriented towards adhering to encyclopaedism with nearly complete exclusion of dialogical and interactive approach and the praxial model, which offer an integrated, participative, sociocultural and artistic view of music education, the value and nature of music, musical understanding, emotions in music and – what is important in the context of contemporary educational requirements – creativity<sup>135</sup>. As Marcin Muszyński observes,

it is not education that “dissolved” in everyday life, but the fact that professional researchers started studying the phenomenon of learning in a much broader context than they had before<sup>136</sup>.

Thirdly, for scientists, audiation is still an ambiguous term and is partially “shrouded in mystery” because, as Anna Jordan-Szymańska claims,

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<sup>130</sup> Ibid., p. 49.

<sup>131</sup> Listening and hearing are natural in music, regardless of the child’s preferred modality.

<sup>132</sup> D. Klus-Stańska, *Konstruowanie wiedzy w szkole*, University of Warmia and Mazury Press, Olsztyn 2002, p. 58.

<sup>133</sup> Ibid., p. 59.

<sup>134</sup> What I mean here is starting with symbols (rhythmic values, letter names for sounds or solmisation pitch) and transmission of knowledge, that is applying expository methods of teaching which consist in displaying information about music (musical instruments, composers, national dances) or verbalising music classes (talking about music, chats).

<sup>135</sup> Cf. D. J. Elliott, M. Silverman, *Music Matters: A Philosophy of Music Education*, 2nd Edition, Oxford University Press, New York 2015.

<sup>136</sup> M. Muszyński, *Edukacja i uczenie się – wokół pojęć*, “Rocznik Andragogiczny” 2014, no. 21, p. 80.

music, its performance, listening and creation guard their secrets closely, thanks to which we do not have to worry that psychology of music will soon unveil them and deprive us of the thrill of communing with the elusive<sup>137</sup>.

Edwin E. Gordon devoted more than forty years of his own research to the construct he named audiation, which is equated with the ability to consciously hear and understand music, both that which is physically present and that which is merely an element of man's expansive imagination. In this way, audiation has become the most important factor in the development of human musicality and the subject of scientific research in the field of broadly understood music education.

Thus, I encourage multi-faceted study of music learning theory of Edwin E. Gordon and examination (including verification, confirmation and disconfirmation) of its core principles with reference to different age groups, including a balanced approach with critique and affirmation as the basic starting categories for every scholar of educational phenomena in music. The selective discussion of music learning theory presented above clearly proves that it constitutes a scientific, empirical and, at the same time, educational theory. Understood in three different ways, it makes it possible to: (1) create a new quality of school and out-of-school music education with a shift in its cultural context (from transmissive to interactive), active and functional nature of cognition<sup>138</sup> (with interiorisation and exteriorisation in the background) and the acquisition of creative and improvisational competence by students through providing them with readiness to improvise and make improvisational efforts on the basis of joint and task-oriented collaboration with others in order to create suitable conditions for active creation of meanings; (2) take into account the necessity for objective measurement and subjective interpretation of musical aptitude understood as one<sup>139</sup> of the predictors of musical achievement in children and young people; (3) emphasise the extrapolative status of music learning theory, the theory of musical development and audiation and the theory of developing and stabilised musical aptitude as an indispensable element in planning optimal educational solutions for students with different distribution of musical potential; (4) take note of the opportunities for musical inculturation that come from family environment (and then preschool and early school education) as a factor that is responsible for the dynamics of the

<sup>137</sup> A. Jordan-Szymańska, *Pojęcie myślenia muzycznego w psychologii muzyki*, [in:] *Myślenie muzyczne a metoda solmizacji relatywnej. Wokół Kodály'a*, ed. M. Jankowska, W. Jankowski, Fryderyk Chopin Music Academy Press, Warszawa 1998, p. 48.

<sup>138</sup> This is consistent with contemporary approach to interactive didactics, which is discussed by, among others, D. Klus-Stańska in: *W stronę dydaktyki interakcyjnej*, [in:] *Nauczyciel i uczeń w przestrzeniach szkoły*, ed. M. Nowicka, University of Warmia and Mazury, Olsztyn 2002, pp. 56–64.

<sup>139</sup> A. Weiner stresses that audiation processes are, to a large degree, determined by the level of musical aptitude; its high level is essential to achieving success in music. As cited in A. Weiner, *Kompetencje muzyczne dzieci w młodszym wieku szkolnym. Determinanty, zależności, perspektywy rozwoju*, Maria Curie-Skłodowska University Press, Lublin 2010, p. 349.

growth of musical abilities at critical stages in development and, thus, eventually for achieving success in learning music; (5) deepen the research on audiation with distinct emphasis on the analogy with learning a language – in accordance with the idea of applying the simplest pattern of honing listening, speaking/singing and, then, reading and (music) writing skills; (6) promote evaluation culture in music education with *GTML* in the background; and, what is perhaps most important in the context of the above deliberations, (7) provide impetus to conduct research investigations with *GTML* as the structural axis of studies that are theoretical and empirical in nature and combine scientific theories with educational practice as a paradigmatic immersion of theory in practice<sup>140</sup>.

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<sup>140</sup> See more in D. Klus-Stańska, *Paradygmaty dydaktyki. Myśleć teorią o praktyce*, PWN, Warszawa 2018.

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## **Heterogeniczność myślenia o audiacji w świetle eksploracji naukowego statusu teorii uczenia się muzyki według Edwina Eliasa Gordona**

### **Abstrakt**

Z uwagi na coraz częstsze podejmowanie przez akademików badań naukowych nad procesami nauczania i uczenia się muzyki zakłada się, że procesy te podlegają takim samym rygorom metodologicznym jak i inne, pochodzące z różnych dziedzin i dyscyplin, szczególnie w przypadku badań zorientowanych na strategię ilościowe. Stąd potrzeba wnikliwej analizy teoretycznej, zdomowionej na rynku polskim od ponad dwudziestu lat, teorii uczenia się muzyki, autorstwa Edwina E. Gordona w kontekście jej funkcjonalności w konstruowaniu badań. Autor artykułu nakreśla osobliwe analizy teorii uczenia się pod kątem jej racjonalności naukowej, zaplecza teoretycznego i praktycznego oraz dokonuje wybiórczej deskrypcji jej podstawowych pojęć w aspekcie podejmowania eksploracji badawczych. Okoliczność ta ma sprzyjać projektowaniu, konceptualizacji i operacjonalizacji wysiłków badawczych naukowców w obrębie zwłaszcza wczesnej edukacji muzycznej i szeroko pojętej pedagogiki muzyki.

**Słowa kluczowe:** pedagogika muzyki, wczesna edukacja muzyczna, teoria uczenia się muzyki, audiacja, badania edukacyjne.