

Pedagogical and Psychological Implications on Teaching the Inventions at 2 and 3 voices, by J. S. Bach

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Abstract: *The title of this research, Pedagogical and Psychological Implications on Teaching the Inventions at 2 and 3 voices, by J. S. Bach, brings together three areas: music, pedagogy and psychology. We believe that only in the light of these vast areas of knowledge, the pedagogical act can be understood and built beneficially for the education of the young pianist.*

We have chosen the analysis and the comparative analysis as research method. The direct and palpable means of penetrating the music world is the score. Through it, the true meaning of creation is revealed to us. It is the cognitive function that generates musical thinking. What is proper to a musical decipherment that adheres to Bachian stylistics is to stimulate the student's judgment. The teacher's expectation is valid insofar as it leads the student towards the conceptual originality of the studied score. A good communication between teacher and student supports the clear understanding of the message of the score.

The goal of unravelling the secrets of Bachian creation is to learn and enlighten the spirit of young pianists. And, a matter researched and understood by us, is the perpetual continuity of J. S. Bach's creation.

Key-words: *J. S. Bach, psychology, pedagogy, thinking, invention.*

1. Introduction

Johann Sebastian Bach's entire creation is a synthesis of great schools and long periods of music, a synthesis of polyphony and harmony, a moment of music for eternity.

We have deciphered *the 15 inventions at two voices and the 15 inventions at three voices* by Johann Sebastian Bach in the mirror of artistic, pedagogical and psychological meanings. They were composed by the author for the musical initiation of his sons. Through a careful analysis of the pieces, we have tried to smooth the difficult path in deciphering the polyphonic fabric of Johann Sebastian Bach's work, to deepen not only through the musical aspect, as execution and intrusion into the specific way of organizing the sound material, but also through a psycho-pedagogical vision, revealing models of artistic involvement, at the age of preadolescence and adolescence.

The current aim and, equally the aim of perspective is to clarify and ease the work of pedagogues in deciphering the polyphonic fabrics, in motivating students by knowing the psychic mechanisms, by the teachers.

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2. Some theoretical explanations on the concept of complex education and its formative role

The concept of education is one of the central elements of the content of psycho-pedagogical sciences. Explaining etymologically, the notion comes from ancient Greek, *educō-educare*, having the sense of leading, of taking out of an inferior action and assuming a guided growth. The concept of education has an open, permissive, pervasive character. This implies a distinct social function, a permanent inter-human communication, a directed growth, a formation, a cultivation of the physical and psychic potential existing in the individual human being, through a set of systematic, intentional actions.

At the same time, education implies social action, it is a social phenomenon, having a social function, being ultimately a social-psychological process. Education has practical purpose and exercises transformative functions.

Education, at any age and cultural level, has predominance in communication. It can be found in all forms: verbal, para-verbal, non-verbal communication. The essential dimension of communication is that of psycho-pedagogical nature, and it can be justified by the "aspects related to the dynamic structure of the process at different levels of development, where not only the characteristics of infant communication can be revealed, but also the educational approaches that support the uninterrupted development of communication and its upgrading to productivity and efficiency standards."²

"The relationship with Himself and the others begins with **communication**. The Latin language includes in its lexicon the word, *communico, communicare*, with obvious meanings of speaking, of being in contact with someone. Maslow's pyramid (Abraham Maslow, an American psychologist who postulated that people have needs to be met) highlights on the third floor of the *Pyramid of the Human Needs Hierarchy*, the need of the human being to be in contact with society, to belong to a group. The man is dependent on society because his social and cultural evolution is determined by the interdependence with the social system.



Communication is only possible through a **language**. This is an ensemble of codes, specific to each psychosocial dimension, used to interact socially."³

² Frunza, Virgil. *The Optimization of didactic communication in the teaching activity*, Didactic and Pedagogical Publishing House, Bucharest, 2015, p. 15

³ Mirea Ruxandra. *Methacommunication in Conductor's Art*. Proceedings of International Conference *The Science of Music – excellence in performance*, Transilvania University of Brasov, November 2016, p.202.

Education is an action with two participants - the educator and the receiver, united by a common and conscious effort. In the modern sense of the notion, education encompasses the set of organized and unorganized educational influences (those that have the effect of achieving diffuse education). Thus, the complex concept of education refers to the ensemble of deliberate influences or influences found outward a deliberate or implicit, systematic or unorganized willpower, which contributes to the formation of the individual as a human being, to the valorisation of the positive value in human rational behaviour, to the qualitative changes of the psychological and physical possibilities of man and society.

The aesthetic education appears as an objective necessity both in the formation of the subject receiver and in that of the creators who thus amplify their experience for beauty, in order to assert their creative potential, consciously and responsibly. As central part of the aesthetics, the artistic education has a narrower sphere of action, but it takes deeper exploration, involves a larger fund of initiation, operates with all kinds of art, involves more subtle qualities, and demands a more complex personality. Music plays a special role in education. It is the expression of man's spiritual life, the art that mirrors with maximum force and diversity the inner life, the dynamics of emotions, feelings and passions. In this way, it explores the essence of the spiritual life. Students in Vocational Music Schools must possess the necessary information to understand the artwork, should be able to orientate in different styles, schools, current trends, trends characteristic to the main fields of art, and to be able to place a work in the respective style or current.

Thus, the creation of Johann Sebastian Bach gives the student a unique opportunity. We consider essential, in forming and shaping the personality of students, to lead them into the world of the composer's music, in order to continually raise the level of understanding of music as an art that can render humanity in everything that it has more essential.

3. The need for polyphonic music in the repertoire of young pianists

The direct and palpable means of penetrating the music world is the score. The aim of unravelling the secrets found in themselves is to learn and enlighten the spirit of the young pianists, and not only. All these ineffable musical works, behind which the composer's creative effort is hidden, are ordered for teaching purposes, in analytical programs. According to this, we the teachers, are creating an activity plan containing the minimum material that a student has to go through. When making the plan, we must take into account the qualitative degree at which the songs can be finished. To this end, the curriculum provides several didactic works from which a selection will be made according to didactic criteria. Relatively to the student's professional level, we choose those parts that contribute to the possible continuity of his instrumental evolution.

The material must include studies, technical exercises, polyphonic pieces, sonatinas or sonatas, songs from the Romanian repertoire. The program should not be regarded as a code of laws but as a starting point, a guide to the particularly difficult work of the educator, precisely to broaden the student's musical horizon.

We believe that at the next stage of formation of an appropriate technique, we shall direct the student towards the pre-classical music, which, the osmosis between a counterpoint and a homophone writing, is the foundation of a solid piano school. The creation of the following organist, clairvoyant and pedagogic composers should not be neglected: John Bull

(1563-1628), Henry Purcell (1659-1695), Girolamo Frescobaldi (1583-1643), Bernardo Pasquini (1637-1710), Jaques Chambonniers (1600-1670), Johann Froberger (1600-1667), Johann Pachelbel (1653-1706), Johann Kuhnau (1667-1722), Georg Boem (1661-1734), Johann Mattheson (1681-1764), Johann Philip Kinberger (1721-1783), whose style is very close to that of the French clavecins, Friederich W. Marpurg (1718-1795), Daniel Gottlob Turk (1750-1813). The creation of these composers culminates with that of Georg Frederick Haendel (1685-1759) and Domenico Scarlatti (1685-1769) and Johann Sebastian Bach (1685-1750).

The compositions for the clavier, performed by pianists today, of all the composers quoted, develop the musical sense of small pianists and gradually lead them to study the larger works that belong to the classical creation: sonatas, rondos, and themes with variations.

4. The concept of invention

In instrumental music, especially in compositions for organ and clavier, the polyphonic style conquers the heights of mastery. The polyphonic treatment of themes of various origins is a composite necessity. One of the genres of the musical baroque is the Invention.

Starting with the 16th century, the term *Invention* appears in the musical literature of the time. The Latin *Inventio*, the ancestor of the word *Invention*, is translated into inventing, shaping, creating. Under this name, pieces were born and their content, rich in ideas, was ordered in a polyphonic writing, without having a precise form. But the principle governing the construction of that piece was imitation. Often, the names were diverse and confused, without one of the genres involved to materialize: sonata, symphony, canzone-ballet, chanson.

The invention discloses a piece in polyphonic style, having a free form, an example of composition based on imitation. This is the most important technique in the Baroque polyphonic creation.

The polyphonic style has seen different imitation ways beyond the usual one: through inversion (in the mirror), through modulatory recurrence, augmentation and diminution. All these methods of using imitation increase diversity within the unity of *Inventions*.

The structure of an Invention comprises two or three sections: Exposition, Development and sometimes Closure or Recapitulation. A theme of the Invention may have any character: lyrical, dynamic, dramatic or even dancing. The melodic-rhythmic predominance is a vital condition for being developed and pursued during the work. The size of a theme usually ranges between two and four measures, but it can be even more extensive. The ambit of an octave falls into one octave, since the principle of achieving an Invention is often the double or triple counterpoint to the octave. An exposition of Invention must contain two or three thematic exposures, depending on the number of voices in which the composition is written. Also, in relation to the number of voices, one or two countersubjects will be defined. The interlude is a melodic element derived from the theme or the countersubject. It first appears after the first exposition and then after the third exposition of the theme. The exposition of the Invention ends with the occurrence of the cadence on the dominant, regardless of the major or minor mode.

The second section, the Development, usually contains thematic exposures in tonalities close to degree I or degree II, alternating with small Interludes or minor processing from the composition.

The third section may be a Recapitulation, or may be under the form of an ending. In the absence of this section, the Development is amplified, ending in the original tone.

Proving an advanced teaching and unparalleled compositional craftsmanship, Johann Sebastian Bach composed the *15 Inventions at Two Voices and 15 Inventions at Three Voices*. He synthesized the various quests that led to the crystallization of the genre, by using inter alia the practice of writing the *bicinia* (polyphonic composition for two voices), *the ricercar* (an improvised polyphonic composition that does not have a thematic unity, the themes varying between three and seven, subject only to the imitation principle), *the sonata da chiesa* (sonata for religious worship). These musical genres and the forms that represent them constituted the crucible of his Inventions. He called the three-voiced compositions the *Symphonies*, which only later, with their printing, were called *Inventions*, like the two-voiced compositions.

The 15 Inventions at two voices and the 15 Inventions at three voices were considered by the composer as preparatory forms of the Fugue. His preface to the work draws attention to the idea of developing the taste for composition, precisely through these small musical and didactic masterpieces, which are the Inventions. **For instance, through this musical genre that does not have a stable shape, the composer wanted to demonstrate that there was interpenetration between improvising, inventing and composing.** The two- and three-voiced compositions led with an unrivalled skill and craftsmanship are genuine jewels of the genre. The assertion is welcomed by Sigismund Toduță, the Romanian composer who followed the Bachian canons in the 20th century, revealing through his compositional, formal and stylistic analysis, but also through his own creation, the unmatched science and value of the brilliant Johann Sebastian Bach. "To invent, appears with possibilities of rational endeavour, unlike inspiration, which specifies an irrational creation phenomenon, where the composer expects the unpredictable inspiration".⁴

5. Aspects of musical architecture of the inventions

Johann Sebastian Bach finalized *the Inventions at Two Voices and the Inventions at Three Voices* in 1723. His introductory word retains the clarity and conciseness with which the author manages to encompass his entire artistic, aesthetic and pedagogical conception in a few words: "Benevolent Introduction which shows to the lovers of the piano, but especially to the lovers of learning, that they can sing at the same time, with clarity, not only with two voices, but, after the necessary progress, even with three. As alternative, one can learn from it not only how good inventions can be invented but also how they have to be executed so as to achieve similar interpretation to the human voice, and thus to perceive the true taste of music".

Began in 1720 and ended in 1723, *the Inventions* have been preserved in three variants of ordering tonalities. The first variation, which has been perpetuated to the present day, reveals a gradual ascending order of the *Inventions at two voices*: Do-re- mi-Fa- Sol-la-si and

⁴ Toduță, Sigismund - *Musical forms of the Baroque*, vol. II, pg., Musical Publishing House, Bucharest, 1973.

descending of *the 15 Inventions at three voices*: Si flat - La- Sol - fa - Mi - Mi flat - Re - do. The layout of the parts follows the principle of the tonal alignment of degree I and II for the ascending line and the principle of the tonal alignment of degree I, II and the distant tonalities for the descending line. We will draw attention to the fact that the objective proposed by Johann Sebastian Bach is easily attained: it gradually goes from simple tones to complex tones, from tonalities without alteration to those with a flat in the ascending line, and from two hashes and two flats to four flats, descending.

By ordering, in the sense of joining the homonymous tonalities in the gradually ascending evolution, a new dimension of the Bachian pedagogical vision is created: Do-do, Re-re, Mi-mi, Fa-fa, sol-sol, la-la, and flat-si.

The six pairs and three isolated pieces totalling 15 tones form a step immediately preceding the 24 tones of the *Well-tempered Clavier*, which agglutinates the whole circle of the temperate tone system. To the extended tonal horizon (4 hashes and 4 flats) of *the Inventions at 2 and 3 voices*, J. S. Bach created a new technical-interpretive system using the thumb, one. Watching a legato as obvious as possible, he reforms the piano technique by moving finger one under the other fingers. Up to him, the instrumentalists who used the shelves placed him above the other fingers, which was rather lean. Bach was the one who used those fingers to trills and flourishes. Through that visionary means, he opened the perspective of a modern pianistic technique.

The implementation of the instrument by the teacher, for exemplification, will always be accompanied by a short sketching of the form that will have the power of stimulating the student's intent and desire to learn.

The composer considered several goals: the balanced development of the 5 fingers by keeping the hand still; the extension of the 5 fingers; skill in executing ranges and arpeggios (MI, FA, SOL, la, SI flat). Once the student has achieved these goals, it is intended to interpret the free thematic elements (do, fa, sol, La, si) in an appropriate manner.

6. Psychological aspects in teaching inventions at 2 and 3 voices, by J.S. Bach

From the point of view of the cognitive psychology, the man can be considered a bio-physical system that is permanently subject to interaction with the environment through varied exchanges as substance (material, energetic, informational: input-output). Starting from this assertion, defined by complex research, one of the tools that helps this dynamics is Education. Complex science, the Education has as guiding principle, the stages of intelligence.

In the case of teaching an instrument, the teacher will consider, in order to harmonize the student's ability to curricular requirements (of absorption of a pre-classic repertoire), these stages, which the Swiss psychologist and epistemologist Jean Piaget highlighted: the stage of sensory-motor intelligence (0-18 months); the preoperative stage (2-7/8 years); the concrete operational stage (7/8-11/12 years); the formal operational stage (11/12-15/16). In the context of this gradual evolution, the pedagogue will fill some psychological fundamentals.

A learning-oriented intellect can only develop by activating the following mechanisms: through sensory-perceptive mechanisms (sensations, perceptions, representations, thinking, memory, imagination), through the mental stimulation of behaviour (motivation, affectivity) as well as through the psychic adjustment (communication and

language, attention, will). Together, they build the intelligence in the young pianist's vocation. The process of artistic growth and maturation is conjugated in the student's evolution, so experimenting with an appropriate instrument and repertoire will help him develop fully.

In the labour of a composition, we draw attention on the functioning of the construct system, a mechanism that the American psychologist George Kelly initiated. "The construct is a personal way to perceive and interpret the events of the surrounding world. The individual gives a hypothesis on how the construct will fit with reality and verifies it, acting in accordance with it, in that situation."⁵ (Luca, 2015, p. 138)

The young pianist, after being explained and exemplified the composition by the teacher, follows a process of mental construction, which will progressively lead to the final version. Although the teacher keeps a watch on technique and stylistics, the student alone will build his interpretive version. : "His vision of the man in the social world is dominated by the idea of anticipating and controlling events ... The result of this continuous process of building reality is the system of personal constructs."⁶ The functioning of the human psyche reveals this face of the possibility of anticipating attitudes, actions, events. "The man is, in essence, a proactive and not a reactive being. His main way of adapting to the environment involves not mere responses to external stimuli, but investigating, constructing mental models of reality, anticipating the effects of future or possible actions, experiments in the mental plane."⁷

All dimensions of the personality are also important to a student, in the construction of a musical composition: temperament, attitude, character, intelligence and creativity. Each student, being unique in his psychic architecture, will develop a singular version of the composition from his point of view. Of course, reporting is also done on previous acquisitions (theory, instrument, form elements) at the allocated time of study.

Also important in building the artistic personality of the young pianist is the motivation from the pedagogue. Supporting him in the laborious work of deciphering a score, in the depth of the separate study, by measures, phrases, sections, becomes a catalyst for the latent forces of the student. The research highlights the importance of cognitive and affective stimulation: "Even if the man has a developed intellectual potential - good memory, deep thinking, analysis and synthesis capacity, intuition and prediction, but he is not urged, determined, interested, stimulated, convinced to do something, he will not get the required results."⁸

Quantitating creativity, which is "a general human capacity"⁹ (Zlate, 2009, p. 307), the student will build his own variation of the work, which will reflect at that moment the uniqueness of the interpretation.

Thus, with the permanent help of the teacher, the student, through the perspective of previous, cognitive and emotional acquisitions, of personality dimensions, will build his work mentally and then, practically.

⁵ Luca, Marcel, Rodica. *Course on the psychology of the personality. Theories of Personality*, Part 1, The Publishing House of Brasov University, 2015, p. 138

⁶ Idem, p. 137

⁷ Idem, p. 138

⁸ Arădăvoaice, Gheorghe. *The Performing Leader. Psychological Fundamentals*, Military Publishing House, Bucharest, 2014, p. 104

⁹ Zlate, Mielu, *Fundamentals of Psychology*, Polirom Publishing House, Iasi, 2009, p. 307

In this framework of a gradual cognitive evolution, the young student, who has one or more compositions of the Bachian *Inventions*, will study and assimilate beneficially at the beginning of the third stage, that of concrete operations, the plays in 2 voices. At this stage, the child understands and can manage logical operations: he classifies, orders, preserves. We consider that at this stage, the issues related to the subjects of the pieces, the interval, the architecture of the pieces, the way of the sound material processing, the imitation, are a challenge and a demonstration of the cognitive, concrete abilities. The student can decipher and interpret the score to a near-stylistic value.

The end of this second stage, and perhaps the interference with the fourth stage, that of formal operations, entitles the teacher to give the student to study, a piece, or even all the 15 *Inventions* at 3 voices. Now, when moving to the fourth stage, the student approaches the complex reasoning, can have a symbolic thinking, can abstract, can test hypotheses logically. Especially a score by J.S. Bach must start from this upper floor, of mathematical, rational thinking.

7. Conclusions

The two books of *Inventions* at 2 and 3 voices by J. S. Bach remain valuable for the musical, polyphonic thinking in the harmonic fabric. The art of the vocation leadership is required to be further cultivated for the in-depth study of the form of fugue, led by J. S. Bach towards perfection through the 48 fugues of the *Well-Tempered Clavier, the Musical Offering and the Art of Fugue*.

The student who has a Bachian composition in the repertoire, from the *Inventions at 2 and 3 voices*, will have the opportunity to conceptualize, build through his own psychic mechanisms, unique variants, which themselves will be overcome through the continuous evolution. Personality, according to George Kelly's cognitive theory, "is a dynamic structure, constantly changing and adapting to an ever changing reality." By virtue of this theory, we can understand the possibility of the student to build a work as well as to understand some infinities of interpretations, at any age.

We have permanently something to learn from the creation of J. S. Bach. We believe that bringing the students into the musician's world of music is a great way to shape their personality, to continually raise the level of understanding music that can give humanity everything that it has more essential and more generalized.

References

- ARĂDĂVOAICE, Gheorghe. (2014) *The Performing Leader. Psychological Fundamentals*, Bucharest: Military Publishing House
- FRUNZA, Virgil. (2015) *Optimization of didactic communication in the training activity*, Bucharest: Didactic and Pedagogical Publishing House.
- MATTHEWS, Gerald, Deary, Ian, J., Whiteman, Martha, C., (2012) *Psychology of Personality. Features, causes, consequences*. Iasi: Polirom Publishing House.
- LUCA, Marcel, Rodica. (2015) *Course on the psychology of the personality. Theories of Personality*, Part 1, Brasov: University Publishing House.
- TODUȚĂ, Sigismund (1973). *Musical forms of the Baroque*, vol. II, Bucharest: Musical Publishing House.
- ZLATE, Mielu, (2009). *Fundamentals of Psychology*, Iasi: Polirom Publishing House.