AN INTERACTIVE ORGAN MUSIC LESSON

Felician Roșca, West University of Timișoara

Abstract: The e-learning system offers us the possibility to discover new educational systems that are extremely interesting and practical in order to make the public familiar with fields of music that are less known, like the field of the organ music. Even if an adult had the opportunity to get familiar with a repertoire or to take part in organ music concerts, few of those who already have a training in this field have the necessary knowledge regarding this musical instrument which is extremely complex and interesting. The present paper aims to present a synthesis lesson about this musical instrument. The first chapter, the introductory chapter, leads us in the visual world of the organ music. Even if an adult had the opportunity to get familiar with a repertoire or to take part in organ music concerts, few of those who already have a training in this field have the necessary knowledge regarding this musical instrument which is extremely complex and interesting. The present paper aims to present a synthesis lesson about this musical instrument. The first chapter, the introductory chapter, leads us in the visual world of the organ music. I will present the most interesting and valuable organs in terms of musical instruments. By means of the digital and electronic systems we can visualise and at the same time listen to thousands of such musical instruments. Their image is special and the combination with the musical sound represents an unforgettable aesthetic achievement. The analysis part contains different systems of organ classification. The introduction in the topic is made by means of a short history. A survey of the mechanical, pneumatic, electric and digital organ systems makes us understand the history of the organ. Later on we will get acquainted with the sonorous part of the organ, its registers and its sound register types. In this way, we will understand the nature of the organ, its different types and the main organ manufacturers in the world. The practical part of the paper focuses on the way the organ is actuated, describing the role of extbooks, the pedal system, the actuation mechanism of different components of the organ ranging from the organ stops to the expression and sound combination mechanisms consisting in the sound increase of the entire organ sound system. The musical part indicates how the organ is played: what one needs to do and what the attitude of an organist toward this imposing instrument should be. We will also tackle aspects like legato, non-legato, digitation, pedalboard, manual pedal techniques, etc.
The last part of the presentation will be a summary of everything that has been presented. It will represent an analysis of Johann Sebastian Bach's best-known work. Undoubtedly, the descriptive part will be accompanied by the sonorous part of the paper.
The conclusion of this paper will deal with the analysis and the writing of such presentations, the role of the teacher as well as that of the possible beneficiary in deciphering a field that is little known to the public. At the same time the paper aims at elaborating a system of interactive presentation where the student who is at a certain distance is able to actuate the mechanisms of the organ.

Keywords: ***music, e-learning, organ art, music pedagogy, lesson synthesis, pipe organ classification, musical analysis***

I. Introduction.

There is a certain number of musical instruments whose presentation is very complex, and their mechanisms and technical possibilities is important not only to the future music performer but also to the audience. Knowing a musical instrument in detail helps us not only discover its mysteries but also being aware of various musical expressions of that particular instrument. For a performer this aspect is extremely necessary from the very first music lessons, which most of the times means early childhood, when abstract notions need to be explained in the most attractive way. Since nowadays the virtual image on the computer is one

of the most captivating for children, our aim is to present an interractive lesson about the construction of the most complex musical instument (in terms of mechanisms and technical ways to actuate it) namely the classical organ. Another chapter is dedicated to the way children with visual impairment can communicate and the way they can be drawn towards a fascinating and complex musical instrument. Undoubtedly the presentation represents a mere summary (a digest) that can be developed depending on the teacher's pedagogical talent and the student's receptive skills. In this process the student's assessment is extremely important and the stages that should be followed take into account: the student's interest for music; the parents' interest for music; testing the child for musical ear; testing the child's rhythmical abilities; testing the child's musical memory; testing the student's distributive attention and concentration ability; testing the student's distributive abilities expecially one's visual memory as compared to the auditory memory. These simple tests are mandatory since without them the student's future results cannot be accepted without continuous progress in all the fields where the student was assessed. Pushing the tone deaf student towards this field (hoping that one is likely to acquire something) is totally useless and an act of aggression in the child's education process.

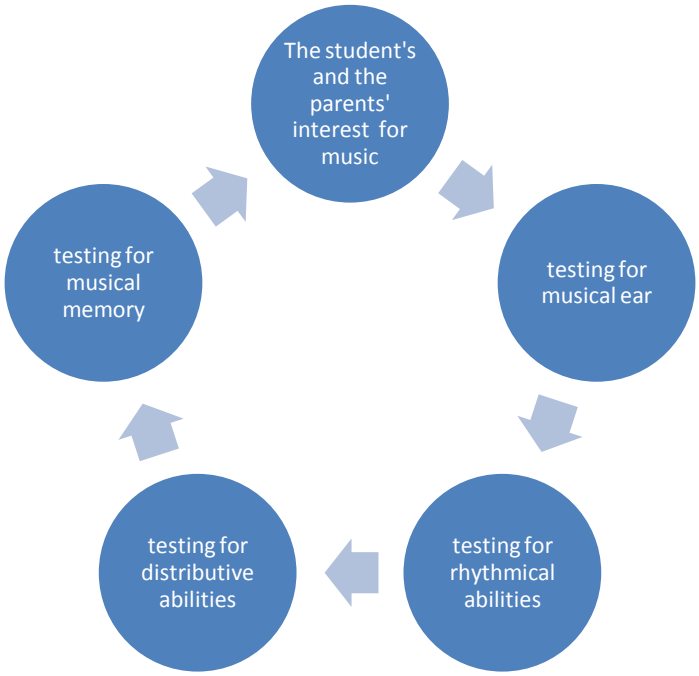

Diagram: musical qualities

Chapter I.How do we discover the pipe organ?

The first lesson for a preschool child (the ideal moment being around age 5 or 6) should contain playful elements and the lesson needs to be full of interesting and fascinating images. Thus, the first lesson should take place in the concert hall, an organ concert. It is advisable that the child is as close as possible to the instrument that will fascinate by sobriety, beauty and importance in a beautiful church. Another important element is represented by the

position of the child which should be comfortable and the child should be able to see where the performer plays (in other words the child should be able to see the prospect of the organ). Undoubtedly, the sonority of the organ will be fascinating for a child. One will be bewildered when, in general, a 5-6 year old child will sit still by the end of the concert. This is something I and the child's parents experienced and, to our astonishment, the child was quiet and stood still fascinated by what he heard. It is also very important that the child has the possibility to go and see the pipe organ console, to talk to the organist and then play (if possible) for a few minutes on the pipe organ keyboard. The child will certainly be amazed and will want to play on the organ again. If these activities have come to fruition you undoubtedly have a child that loves music in general (even if it will not become a profession).

The second stage can take place at home where we play on the computer and see magnificent images of other organs. Meanwhile the sonority of the organ can be heard in the background and the play may go on, watching images of organs and thus discovering unexpected beauty. There is a series of pages with such images, but we recommend the images in the album *Organs of Romania* that you can find at the following address: http://www.monografia-orgilor.uvt.ro/NEW/login.php . There are images of organs from all the counties of Romania. It is advisable that watching these images does not take much time and the parent is patient (but, for an adult these pages are equally fascinating). One can download the whole album so that "the next time" "it takes less time" to prepare for watching them.

At this point a teacher is needed. Do not worry if the child does not reach all the mechanisms of the organ. This is not necessary and the child will undoubtedly discover them in the future lessons.

1. 1. A visit in the inside of an organ

Any organist, after testing the child, will undoubtedly show him/her how the organ works during the first lesson. It will be something both amazing and interesting, and the entrance in the organ case will be particularly fascinating. Do not worry, accidents are impossible to take place, but it is a good idea that the parent accompanies the child in the organ case.

What we can discover in here: firstly it will be obvious that the organ is made up of several different parts in terms of construction and each of them has a particular purpose. Firstly one will discover the wind chest. Here a powerful "engine" pumps the air which stays there until it is released to go through different channels towards the pipes of the organ. It is advisable that the organist does not play the pipe organ while it is being visited. The powerful sonority may affect and scare the child awary, but a good teacher will find the right ways to show the child how to "wind" the pipe organ and how air makes it alive. Watching how the pipe organ blast makes it alive and how the air is ready to flow towards the sonorous pipes.

Another interesting mechanism is the one that opens the channels towards the different rows of pipes. These are the registers and they are connected to each sonorous colour of the pipe organ. At this point we discover that the pipe organ does not have only "one case" (a chest), but two or even three chests where each of them has a clearly defined role. In the

middle we discover the big case with "the big pipe organ". Here we can find the most powerful and important sound pipes. Each row of pipes has a different function and tone colour. The most important row is the row of the 8 foot Flute (the lenght which establishes the lenght of the sound pipe), which is made of metal (an alloy of different metals), then the 4 foot Octave which is its younger sister and the 2 foot Super Octave which is the youngest, as well as the 1 foot pipe which is the smallest pipe in the entire pipe organ.

Then we can discover the row of open flutes which sound softer and more delicately and which may be made of wood or metal and which have a stopper at one end which makes them sound more "grumpy". Then come the pipes that immitate different musical instruments: the violin – violine, the cello – viola da gamba, the clarinet, the oboe and even the human voice – vox humana.

We can also discover the most powerful pipes of the organ, the mixtures (where 4 or 5 pipes are sounded at the same time) and the reeed pipes: the 8 or 4 foot trumpet and the 16 foot trombone. The tallest pipe is the bombard pipe. A child can enter it and when it is played it can be heard from a large distance.

Then we discover the pedal case where the pipes with grave sonority can be found, ranging from 32 foot to 2 foot with the 32 or 16 foot Flute or the 4 foot Octave sounds. Then come the row of closed and open pipes such as Subbas, Boudon, Cello, 4 foot Flute, etc. All these denominations vary from one language to another but the organ player needs to know how to translate them and to use them properly.

Let us move away from the "Great organ" to another case where we can discover pipes that are much warmer and expressive in terms of sonority. Here we can find the expressive case (the expressive chest) supplied with a mechanism that can be actuated by the organ player in two ways: either close it, in this case the sonority being lower (piano) or open it progressively and the sonority becomes more powerful (forte).

Somewhere close to the pipe organ console, sometimes right in front of the organ player some other times behind him, we can find another case: the pipe organ Positive or Choir. It is made up of pipes of the woodwind family their sonority being somewhere aroud the 4 foot pitch octave and having the role of creating the pipe organ echo between the Great organ and the Positive. Sometimes Positive organs can be found in people’s homes and are used as home organs (positive, expressive and pedal case).

The history of these pipe organ cases starts somewhere around the 3rd century and goes up to nowadays, starting from the Aquincum pipe organ and going on with the modern pipe organs we can find in different concert halls nowadays.

Figure 1. The prospect of the pipe organ in The Black Church Brașov

1.2. At the pipe organ console.

After becoming familiar with the pipe organ on the inside, we need to find out how the organ is played and how we can actuate all the fascinating systems of the pipe organ. The place where this thing can be done is the pipe organ console. The console is made up of: the manuals, the pedalboard, the stops, the couplers, the pipe organ start button.

Each pipe organ chest has a keyboard. In this way a pipe organ can have 1 up to 6 manuals. Which means that an organ with one manual has only one chest and a pipe organ with 6 manuals has 6 different chests which are different in terms of sonority. The most complex console has 16 manuals. It is a mammoth instrument and its actuation is extremely complex. This instrument can be found in the United States of America in Boston.

The pedalboard engages the pipes in the pedalboard cheste and this represents the whole sonorous basis of the pipe organ. An organ without a pedalboard is only a positive and it can be used merely as an accompaniment pipe organ.

On the console there are other couplers as well. They help us couple (connect) the keyboards or the pedalboard with different manuals.

The knobs are also on the console. They open or close the ranks of pipes. Nowadays complex digital mechanisms help us programme the opening of certain registers by pressing a single button and the possible combinations are innumerable.

The keyboard actuates the different pipe organ mechanisms by different systems: mechanical (a bar going from the key to the valve), pneumatic (by counterpressure the two bellows open simultaneously – one, under the key, the other under the valve), electric (under the key there is a contact and each valve has an electromagnet). Depending on the type of transmission from the key to the valve nowadays we have several types of pipe organs: mechanical, pneumatic, electric. A digital transmission system has been invented recently but these pipe organs cannot be called digital. The difference is that in the case of a digital pipe organ all the sounds of a real pipe organ are stored on a computer and each keyboard corresponds to a group of sounds pre-recorded on a memory board. The console of the digital

pipe organ does not differ much from a real console except in the case of the former we do not have real organ pipes, but only real sound memories copied from famous organs and played by means of digital memory systems. These systems have become so competitive that for an unwary person the distinction between sonorities is very difficult to make. What digital pipe organs lack is the natural sound resonance of the pipe of the organ and also the artificial rendition of the musical sound by means of speakers.

Figure 2. Pipe organ console

1.3. How do we play the pipe organ?

Playing the pipe organ is a very complex, distributive and expecially a virtuosic skill for a musician. A pipe organ player, should have, besides his musical talent, an extraordinary capacity of attention for rendering the musical text, choosing the appropriate registers in order to render the character and the message of the piece as accurately as possible. The dexterity of actuating the keyboard, the pedalboard, the registers, of appropriately choosing and rendering the musical text for the sonorities in different chests of the pipe organ, and what is more, an appropriate attitude that excluede the aggressive display of these qualities will make a talented pipe organ player, capable of rendering the most profound and moving works composed for this musical intrument. Any beginner organist should cherish the idea that an organist does not make a show, but is merely a "modest cantor" as Johann Sebastian Bach put it.

In pipe organ music playing technique there is a series of element that pertain to: the technique of the pedalboard, the legato and nonlegato technique, the articulation, the declamation, defining the musical shape and, last but not least, the style and the aesthetic interpretive technique of the organist that needs to take show us his great talent. Each of the above elements is a separate world, they mean years of hard work but also the satisfaction of opening towards a miraculous, fascinating music dedicated mainly to the world of faith and adoration for God. This is a special world, with a particular meaning and message, a world of faith and spiritual healing.

1.4. The pipe organ music, o world that is open to visually impaired children.

What a visually impaired child is fascinated by will be firstly the ample and all-encompassing sound of the pipe organ. Undoubtedly the perception will not be visual, but only auditory. He/she will be able to hear how the organ bellow is filled with air, how the register opens and how each organ sound sounds differently. He/she can hear the sound coming from the front (the Positive), how it can be shaped (in the expressive) how it sounds when it is complete (in the Great organ). Then he/she can physically touch the different mechanisms and slowly start learning their place and role. Then through repetition and with lots of patience he/she can learn different musical works. He/she is able to understand what legato, staccato and non-legato mean. There is even a pipe organ contest for the visually impaired. What seems to be a closed universe can open up, it can become a whole new universe, and, why not, even a beautiful profession for a talented person who with talent and perseverence can achieve success, which sometimes can be stunning even for those who are able to see daylight.

The pedagogical process needs to follow, in this case, certain requirements and a special methodology, but taking into account the auditory perception of the visually impaired, most of the times we are rewarded with special results when we see 10-12 year old children who can play at a high level and who still have this disability. In France as well as in other countries there are associations who are dedicated to these cases and their success is directly proportional to the effort that we, the sighted, make.

II. The pipe organ music repertoire

The musical universe of the pipe organ is mainly dedicated to religious music. From the very beginning the pipe organ music repertoire was introvert and sensitive to faith and religiuos expectations. The pipe organ has always been twined with faith, prayer, hope, life, eternity. From Merullo's Renaissance works to Naji Hachim's fascinating music, organ music is not concert music, but faith and worship music.

For a child, the process of entering this world should take place progressively with continuous explanation of what message it has. We make the distinction between several styles from the Italian Renaissance style to the German Baroque style dominated by Buxtehude, Bruhns, Pachelbel and that of the genius Johann Sebastian Bach. Polyphonic choral musical forms such as passacaglia, chaconne, fantasia, prelude and fugue are definitory for this period. Later Mozart's Classicism has discovered the mechanisms of the clocks provided with small organs and for which he composed wonderful works. Romanticism in music is marked by the creation of Cesar Franck, Franz Liszt, Max Reger, Mendelsohn Bartholdi and the French post Romantics Vidor, Vierne, Dupre, Durufle. The music of the 20th century is dominated by Olivier Messiaen and contemporary pipe organ music is continuously expandin

2. 1. A short musical analysis: Toccata and fugue in D minor by Johann Sebastian Bach.

The best work to present the pipe organ as a musical instrument is Toccata and fugue in D minor by Johann Sebastian Bach. Its melodic lines, the virtuosity of the musical text, its repetitive echoing sounds and mainly its ballance recommends it as the most suitable even for

some unwary listeners. I have had this experience in my life as an artist when I was supposed to play the pipe organ for some people living in the countryside, with no musical education. The result was spectacular. If at the beginning my audience was listening to my playing the organ with their hats on, the music impressed them so much that they immediately stood, took off their hats and in the end they took a bow and felt in their soul the religious message of the music.

The work begins with ample chords that stresses the magnificent sonority of the pipe organ. Toccata with its virtuous passages do not valorize the organist's dexterity, but the sound value of a ballanced language circumscribed by different movements that lead to one goal: the opening of the fugue. Its topic is clear, articulate and by alternating the sound motif the composer creates a sonorous universe that later develops in the 4 voices of the fugue. The sonorous discourse is underlined by the sonority of the Positive and the Great organ and the echo is stressed by its obstinate repetition. The theme develops and evolves by the actuation of the pedalboard and by reinforcing the sonorous discourse. The fugue ends virtuously by reinforcing the sonority and by developing the musical discourse. In the end we come back to the same character as in the beginning and ample and powerful sounds in terms of sonority and musical expression end the piece.

III. Conclusions

My goal is not to exhaust the topic which can be developed with great talent by its beneficiaries. The technical means at our disposal, the possibility of seasoning the text with musical samples, images and even with practical demonstrations can be priceless for an organist teacher.

Each chapter can be only a suggestion for a vast material that can be developed in different lessons that could be presented online. Interactive lessons where the different sonorities of the organ or a sequence of lessons where the pipe organ is presentd in its different historical periods can be developed. Later one can come up with lessons for each composer presenting the pipe organs with their characteristics, with theri sonorities and specific registers in that particular period. The polyphonic musical forms can also be presented in the most interesting way with the help of musical compositions for pipe organ and by comparing them. I am of the opinion that my short presentation is merely a digest and not a proper scientific paper that objectively and inexpressively analyses the qualities of the pipe organ. There is only one motivation for this. One can only come closer to understanding this musical instrument with love, passion, faith since the pipe organ belongs to a special, fascinating and promising world.

The role of the teacher is definitory in this pedagogical process. Only the teacher is the one who can discover, guide and shape a future organist musician. What we are preoccupied by is find children and parents who are willing to guide their children towards music and what is more train future young teachers who take the message of the organ music in the future of the modern society.

REFERENCES:

1. Bălan, George, *Misterul Bach*, Editura Florile Dalbe, Bucureşti, 1997, ISBN 973-97001-8-7.

2. Bughici, Dumitru, *Dicţionar de forme şi genuri muzicale*, Bucureşti, Ed. Muzicală, 1978.

3. Honegger, Marc, *Dictionnaire de la musique – Sciennce de la Musique – Instruments a-k*, Paris, Ed. Bordas, 1976.

4. Keller, Herman, *Die Orgelwerke Bachs*, Edition Peters, Leipzig, Bestell- nr.4572.

5. Klotz, Hans, *Das Buch von der Orgel*, Bärenreiter-Verlag, Karl Vöterle KG, Kassel, 1965.

6. Kooiman, Ewald; Gerhard, Weiberger; Herman, J. Busch; *Zur Inter-pretation der Orgelmusik Johann Sebastian Bach*, Merseburger, 1995.

7. Lehotka, Gabor, *Az orgonatanitás módszertana*, Editura Gorsium, Budapest, 2001.

8. Lehotka, Gabor, *Gorsium Orgonaiskola*, Editura Alba-Print, Budapest, 2000.

9. Roșca F. (2000) *Arta şi pedagogia organistică din România, în context european,* Editura Mirton, Timişoara, ISBN 973-585-205-5, Teză de Doctorat

10. Roşca F. (2002) *Coralul protestant. Johann Sebastian Bach, partitele de coral pentru orgă.* Editura Mirton, Timişoara, ISBN 973-585-745-6.

11. Roşca F. (2007) *George Enescu. Lucrări şi transcripţii pentru orgă*. Editura Universităţii de Vest din Timişoara, ISBN 978-973-125-065-6

12. Roşca F., Csanádi László (2007)*Il Transilvano de Girolamo Diruta sau Muzica de orgă renascentistă de la Alba Iulia; Dezvoltarea orgii italiene și activitatea familiei Mascioni*, coordonator Roșca. *F.*, volum bilingv română-maghiară, Editura Universităţii de Vest din Timişoara, ISBN 978-973-125-064-9

13. Roşca, F. (2011) *Rumänische Evangelische gesangbuch; Romanian Protestant hymns; Imnuri Protestante româneşti,* Editura Brumar, Timişoara, ISBN 978-973-602-645-4

14. Roșca, F., Enyedi, Ș., Firea, C., (2007), *Orga de la Câlnic*, editor coordonator Roșca, F., proiect CNCSIS 542, Editura Brumar, ISBN 978-973-602-298-2

15. Roșca, F., Porumb, M., Terenyi, E., Kindl, W., Philippi, U. și alții (2008*) Orgile din România*, editor Roșca, F., proiect CNCSIS 542, Editura Universității de Vest Timișoara, ISBN 978-973-125-178-3

16. Schweitzer, Albert, *Johann Sebastian Bach*, Breitkoff-Härtel, Wiesbadeb, 1976.

17. Spitta, Philipp, *Johann Sebastian Bach,* Breitkoff-Härtel, Wiesbaden, 1979, ISBN 3-7651-0038-2.

18. Varga Ovidiu, *Bach un orfeu pământean*, Editura Muzicală, Bucureşti, 1985.

19. Weber, Edith, *Le cantus firmus "Ein feste Burg ist unser Gott; associati-on d`idée multiples du XVI au XX siecle. Itineraires du cantus firmus, vol* IV. *De l`Eglise à la sale de Concerts*, Press de l`Université de Paris-Sorbone, 2001.