

3. Learning Unit 3: Analysis of mechanism of the instrumentalist. Physiology, psychology, perception. Importance of acquired knowledge

3.1. Introduction.

Taking into account the human factor is inseparable from teaching. Even if it is not enough to build a methodology, it must lead it constantly. With equal skills, a teacher gifted with psychology and who likes his job will always get really better results. But do not be mistaken, this does not deal with motivation or encouragement, but with a special approach of teaching piano, which tries to integrate psycho-physiological specificities to methodology, going beyond rough classifications : gifted student, less gifted student, unthinking, musician, artist, etc... Globally, a student who follows instrumental lessons does it for pleasure and tries to do whatever is best. Motivation problems often come from student's misunderstanding in front of learning difficulties, which create wilting or even avoidance.

Student, who likes music, admires his teacher, feels unable to reply to the stake. This phenomenon also can be amplified by several somatic factors: doubt does not help concentration during learning and even less fluency in front of an audience. It seems crucial to me to guide the student towards an active comprehension of his mental processes, in order to reassure him about subjectivity linked to our feelings and also to allow him to include these parameters in evaluation of his work and progress.

I will not try to do a psychology lesson but to outline some simple rules that can light the teacher in understanding his students.

3.2. Internal world and external world

Recent researches in neurophysiology, and in particular those undertaken thanks to the Imageries with Magnetic Resonance (IMR) on high level musicians and sportsmen, are disconcerting. Indeed, it appears that mechanism of brain is almost the same whether we imagine some gestures or we really carry them out. This clinical observation can light many communication difficulties with students, who do not seem to share the same "reality" as their teacher, and thus do not manage to apply nor even to understand usefulness of advices given to them. Indeed, most of them do not manage to differentiate clearly the concrete performance of a passage and the mental representation that underlies it, what create and obvious difficulty for auto-evaluation. The extreme example is the amateur musician who has not been well trained and makes a mess of his favorite piece without any scruple : when he plays, he does not ear himself but "listens" on an internal way the record he listened hundreds of times, which he improves by the great feeling of touch. It is a fascinating personal ply-back, accompanied by an intense pleasure, that is globally not shared by his circle. The listener only ears what really sounds from the instrument. Thus there is to start from the following forewarning : two realities coexist in each pianist, one is internal and the other is external, and is not limited to listening field but also to

touch, sight... A student, even if he has an advanced level, can feel he really does an action whereas he only imagined he did it. Let us read Descartes again urgently!

3.2.1. The internal world : between desire and motivation

There cannot be any learning without internal world. Over dream and artistic desires, creation of an internal listening of music is necessary for process of learning of pieces and their mental fixation. Indeed, muscles do not have memory, strictly speaking, and the complex series of gestures to perform a piece must come from a desire fixed in brain. Even the most repetitive and mechanical learning cannot exist without this part of desire, in order to allow fixation of reflex and their succession in time scale.

In addition, it would be illusory, not to say worrying, to imagine that the student tries to progress with perspective to respect a kind of “established order”, a succession of rules produced by a disembodied artistic state, without affect nor desire. Pursuit of beauty is obviously produced by an education to aesthetic sensibility and a very personal emotion, which often become incarnate in ideal or sublimated forms, of which the students globally does not perceive fundamentals. A concert can be very impressive for a young child, even if it is not possible for him to elucidate reasons why: beauty of sound, magic of the scenic rite, concentration of the audience, heroic status of the artist vest with a mission... Complex whole that the child sometimes express by a naïve detail : the final bow and applauses, scene dress of the artist, bunch of flowers.

It seems to me very important to harbor constantly the internal world of students, giving examples playing piano, organizing auditions where every of them listen others and advice to listen reference records. Education to sonority especially has to use examples, all learning long, in order to open desires of more fine and complex sound spaces. Indeed, to succeed, the student has to know as precisely as possible his aims. In a word, the teacher, whose internal world is elaborate and inhabited, has to keep in mind that his students’ one is still under construction, and that he has to place progressively necessary referents to auto-evaluation in it.

3.2.2. The external world : between realism and pleasure

The violinist must bolster his bow, the oboist must bolster his air column, but the pianist cannot do anything but keep fingers pushed and think to something else.. This instrumental “easiness” does not favors an real and active listening of sound. And yet, external listening cannot be ignored.

- It is the only objective indicator of the pianist’s play
- During work phases, it leads the student and allows him to auto-evaluate
- It is the only way to control the phase of automatism acquisition and to check credibility of the internal sounding image.

- It allows an efficient communication with the outside, whenever it is the teacher, listeners or even chamber music partners.

Besides, whereas internal listening tends to “idealize” sonority risking to make it immaterial or inaccessible, external listening places the pianist in the reality of the moment, with its inalienable part of imponderable that links it to real life. It is indeed impossible to reproduce twice exactly the same sonority, as factors linked with piano, human or environmental materials are fluctuating. Humility in front of this dose of imperfection inherent to art allows on the contrary to approach closely to the perfect image of the internal world of the interpreter.

3.3. Psychology of learning

3.3.1. Importance of automatism

All the learning process long, repetition of a sequence of gestures implies a kind of memorization, or rather a creation of a kinesthetic automatism. Progressively, consciousness becomes globalized, losing details of the sequence, in order to rationalize as far as possible flood of thoughts. If it is not controlled, this process can end up to include the totality of the work, which becomes then a kind of indivisible body, that cannot be played another way than from the beginning and cannot be interrupted without danger. The pianist almost cannot act on the work anymore, and cannot do anything than reproduce indefinitely the same automatism, with its defaults and qualities. Then mind is globally free to sail towards any thoughts. We must admit that this extreme case creates a kind of security on stage: the process does not lay itself open anymore to stage fright or emotion. But exacerbation of non-conscious automatism involves following important dangers:

- Pianist will be irremediably lost if he stops during the performance: he has then to go back to the beginning of the piece
- Non-conscious automatism strongly isolates internal listening from the external listening, which is quite inactivate. Artistic expression is then very influenced, making a typical mechanical belief, that can be balanced, it is true, by bodily expression of the interpreter. Reactivity to the real sound of the instrument is thus almost impossible, what implies a play that seems stereotyped.
- Adaptation to the instrument, to the acoustic, to chamber music colleagues becomes difficult. Pianist is then retreated into his habits and does not succeed in modifying his play in order to adapt it to surroundings changes. This can lead to a disaster in an audition or at a concert, when the student approaches an unknown piano and loses his marks. He then says sincerely “it is so better when I am at home!”. Of course...

On the contrary, it is very bad to thwart creation of automatism. It would be illusory to imagine that each sequence of gesture can be controlled in real time.

Besides it would not allow so much poetry and emotion; Automatism must be reinforced in order to give ease to the play and allow to lose one's grip during performance, otherwise a belief of control would be too strong for the listener. Text is clean, clever and controlled, but no emotion comes out. That is why there is to avoid to thwart implement of strong automatism but keeping a conscious connection with details of sequences. This implies an active work of control of automatism, that must occur at the end of the learning process of a piece, what allow to take on again a possibility of control and changes in real time of learnt sequences. Frantz Liszt was passionate by these notions and tested powerful techniques to create this conscious automatism state: specially he used to read books while practicing some passages in order to free automatism by occupation of brain. He said : "I do not know well this piece, I still have to think about it". Moreover, Liszt was constantly able to change the music while he was performing it, adding complex ornaments, or going into sudden improvisations. In contrast, some exercises divided up allow to take on again control of automatism, injecting some points of consciousness into the global. All of this depends a lot on leaning techniques, and we will tackle this point at length in further lessons.

3.3.2. Learning mechanism

Without anticipating on the lesson devoted to memorization, I would like to precise the global functioning of any musician in the situation of a learner. This approach seems to me absolutely essential, and must be constantly kept in mind by the teacher all the work with student long. Here are some realities that govern our functioning:

- Acquisition of a work involves a kind of memorization, which should not be confused with playing without score.
- The memorization of a work mobilises every senses, at the same time. If it is possible to focus specially on one sense or the other, it cannot inactivate other ones.
- Memorization mode is iterative, that is to say one event after the other. Brain stocks a sequence of gestures, feelings and affects respecting their succession in the work.
- Brain stocking is produced by chemical acquired mechanisms creating themselves other mechanisms as a principle of chain reaction. In order to visualize easily this process, we can take for example dominos competitions: fall of the first one involves chain fall of following dominos, making moving pictures.
- First phase of learning leaves an almost inalterable chemical trace, all the most so for gifted students. That is why it is important to be careful to the first hours of working a new piece. On the other hand, it is very difficult to modify an former acquisition, unless substituting to it a new sequence or fixing very strong control points after the event.

The problem is that a young student has no sufficient tools to control every parameter of a work since the first reading. Thus the teacher has to try to control the learning phase not putting the student under stress but trying to fix good automatism, and by contrary must not fight against former reflexes

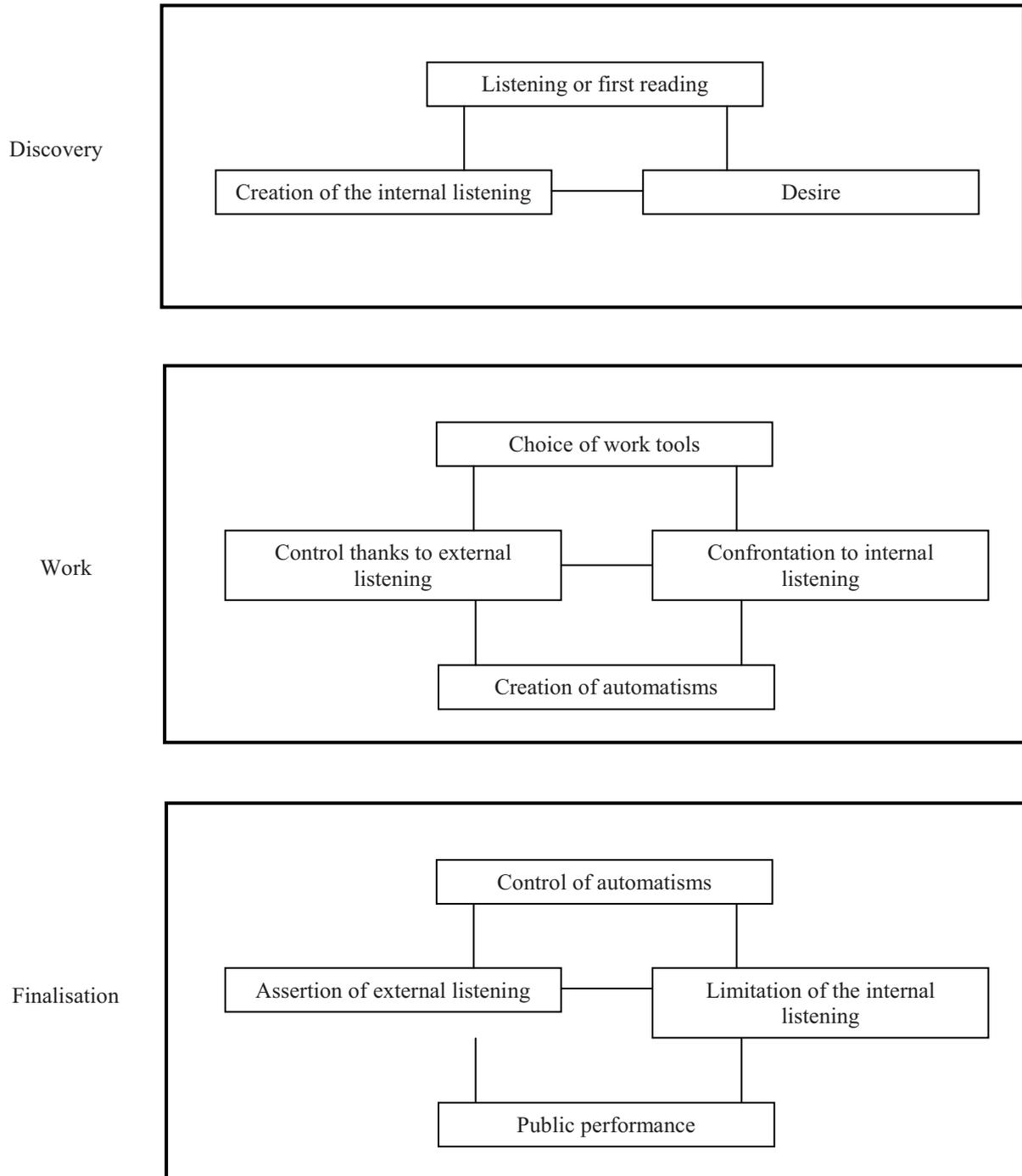
already strongly printed in the student's personal experiences. It is thus very important to change often enough the repertoire in order to allow a sane and solid evolution of students.

3.3.3. Differential learning dangers

One of solutions applied by some teachers to control acquisition consists in dividing gestures or text in order to decrease their complexity make work simpler. It is for instance a long separate hands practice, two or three weeks, or a isolating voices or elements of the text. This rationalism can be compared to modern production lines, in which a car steel frame can be made in India the motor in China and main body in Morocco, and the whole assembled in France. This method could be appealing if stocking of the different musical text elements could be differentiated too. But it is not so simple. An initial separate hands work implies to stock two distinct acquisitions that are to be assembled then. This assembling is then globally limited to a kind of synchronisation, to the detriment of vertical listening, global perception of the gesture, musical momentum... Also, practicing each voice can suit to an advanced pianist, but after the event, it imposes a new global memorization and thus a time loose and a risk to weaken reflexes. Separate work becomes to my mind very important in the second phase of the acquisition, when the aim is to make automatisms conscious and to find different focusing angles of the ear. The teacher cannot avoid here the responsibility in the student's leaning process: there is to control carefully the complexity of works and lead to the maximum the learning process in the initial phase, or he cannot cure heavy defaults after.

3.3.4. A learning diagram

Psychology of learning



3.4. Conclusion

The “human” material, even if it is more complex than the “piano” material, obeys some simple working rules common for everybody. But perception, acquisition, education, are very different for each person, creating infinite varieties of feelings and approaches during learning. The teacher must be very careful about indications given by students, whenever they are difficulties or eases, in order to lead them in knowing themselves, and to be able to act on weaknesses of each of them. A work that do not respects these differences would partially lead to failure and avoidance, and partially to simplistic standardization. On the other hand, it is important to keep in mind clear objectives, which are executable thanks to many means, but necessary for the student to make strides.

3.5. Lesson 3 final test

Please list, in your pedagogical experience, the three following cases and write for each of them:

- Describe the situation in a few lines
- Try to precise characteristics of the case in terms of exteriority and internality
- Outline pedagogical solutions allowing to improve the case

- ❖ **Case #1:** brilliant student, motivate, but insensitive to romantic works. Always searches for virtuosic repertoire, or rhythmical writing works.
- ❖ **Case # 2:** intuitive student, musician, refuses any analytic approach about practiced works. Never wants to express verbally what he feels about works.
- ❖ **Case # 3:** student who expresses himself very easily about approached repertoire, able to speak with imagination and pertinence about his feelings in fron of the piece, but unable to realize his ideas on a concrete way, and lacking of constancy in his work.

This work must be written in two or three pages.