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The Need And Experience Of Drawing With Ingeniuty. An Analysis Of The Graphic Practice In Architectural Education.

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Abstract

The difficulty of teaching drawing during the first college stage, in visual arts, is clearly laborious, but not impossible. We know about students' immaturity at the beginning of architectural learning and we know what professors in schools of architecture can offer them in relation to their drawing needs: increase their ability to think, feel, and their creative abilities, curiosity and ingenuity. But we do not intend to indicate the best method, but rather to reflect on the fact of the drawing itself, and how it is possible to discover its enigmatic part and necessity through three sketches. First: phonetic diversity; second: need of drawing what we see; third: ways of drawing with ingenuity. This study is completed with an analysis of the early drawings in architectural education and the graphical maturity reached after an academic year.

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1. Introduction

Learning to discover the world is discovering its meaning. All written theories about drawing and the drawing act are disturbing, passionate, philosophical, technical, etc. Some of them insist on the methods, others are based on systematic, pedagogical and psychological experiences, undeniably historical, whose diffusion has been printed in

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specific treatises, serious theories which evolve gathering the works of great artists and architects who draw, all those which have helped us to know and learn the ways of drawing.

In drawing lessons, not everything is based on theory; on the contrary, it is the practical experience what increases the capacity to evolve graphically. But practice needs theory to progress, to get knowledge and to grow in the creative world. Drawing is not only the way to express something, but also to feel something. As described by Valéry "There is a huge difference between seeing a thing without a pencil in our hand and drawing it" (Valéry, 2005). The act of drawing consists on reaching the ability to react to things, it is the first step to externalize an idea, or as Nauman (1991) would say: "Drawing is equivalent to thinking. Some drawings are made with the same intention as writing: they are notes that we do. Others try to solve the execution of a particular sculpture, or to imagine how it would work. There is a third type, representational drawing of works, which are made after their creation, giving them a new approach. They all allow a systematic approach at work, even if they often stress their internal logic to absurdity". And regarding the fact of being a part of the act of drawing, and as a result of an abstraction state, Jackson Pollock experiences this formula by a deep connection of being part of the picture. His painting, he says, does not leave the easel, (...) "On the floor I am more at ease. I feel nearer, more a part of the painting since this way I can walk around it, work from the four sides and literally be in the painting" (Everitt, 1999).

The mastering of drawing in daily practice of learning architecture is not based only on drawing architecture, but on learning to think about architecture. What we can transmit to our students in the classroom depends overall on the communication skills of the teacher and the professor. The ability to communicate the need of drawing in any of the visual arts disciplines during the first stage of college is, nowadays, clearly laborious but not impossible. We know about the graphical immaturity of students at the beginning of their architecture learning and we know, from the point of view of our curricula, what we can offer them or rather show them: the essential in drawing can increase their capacity to think, to feel, to enhance their creative abilities, even increase their interest on curiosity and ingenuity. In other words, the teacher can teach to manipulate instruments, new methods and the latest techniques, but the challenge is trying to show students how to be inside each drawing. In the essay entitled *Elogio y refutación del ingenio*, J. A. Marina masterfully explains an important part of the artistic history of our century thinking about modern art as a paradigm of the meaning of "ingenuity". And mentioning Beuys, among others, he says that "He taught his students, with sincere fervour, that every man is an artist, and that the true capital is not money, but creativity." (Marina, 1992). The need and experience of drawing with inventiveness, seen from the perspective of architectural education, can be a crazy concept, but despite some conflicting ideas about what a future architect should learn and the trends generated in Modern Movement, we believe that drawing is still the closest media to intellect, and that despite the new representation media, it will remain part of the creative act par excellence. So, we do not intend to indicate what is the best method for teaching drawing, but rather to reflect on the fact of the drawing itself, and how from this reflection it is possible to discover the enigmatic part of drawing and its necessity with three brief sketches.

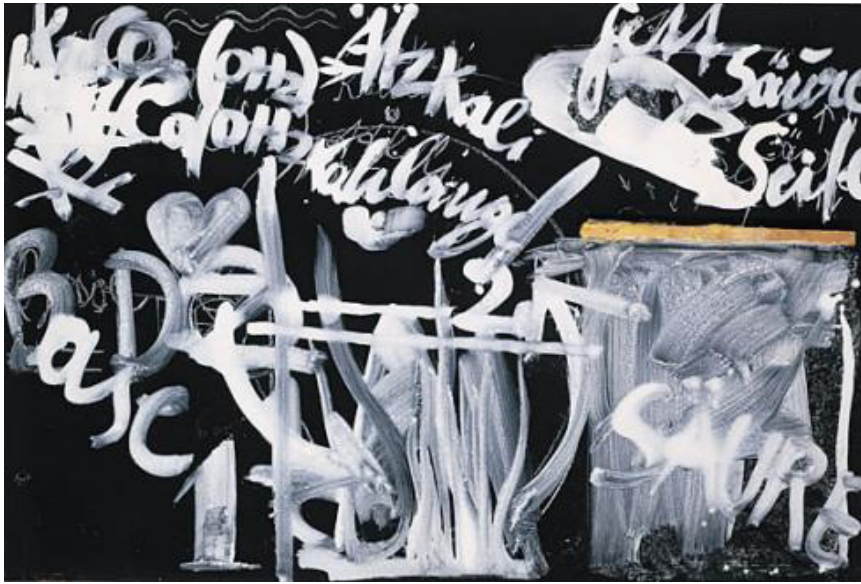


Fig 1. Virgin (Jungfrau), Joseph Beuys, April 4, 1979 / June 23, 1979. Chalk, tempera, wood, and soap on blackboard, 33 1/16 × 49 5/16 inches (84.2 × 125.3 cm). Solomon R. Guggenheim Museum, New York 94.4264 © 2013 Artists Rights Society (ARS), New York/VG Bild-Kunst, Bonn

1.1 Meeting with the first sketch. Phonetic diversity.

"Sketch is defined as: non-profiled and non-finished draft. Used especially when talking about plastic arts, and by extension, about any intellectual work" (D.R.A.E. 2001). If we think about the meaning of the word sketch, and we look for information about it, we will immediately find firstly its name in several languages, and secondly, we will notice that it is a word explained in hundreds of texts linked and inseparable from the definition of drawing. We include the different states of the sketch, as a part of the graphic action, not defined yet. The attempt is relating to the blindly and unstructured drawing. "In the sketch, (...) there exists an early image of what is possible to grasp, but it is made from a white, blind space, where the hand tries to reach an imprecise outline that produces a certain fear to be considered, (...) It is an exciting drawing, tactile, full of erroneous perceptions which force permanent changes of direction" (Gomez, 1995) Sketch does not only belong to the field of graphic experience, but it is also included in the dictionary as: "Project or general outline, prior to the execution of an artwork". In other words, all people can use the sketch as a beginning of a first idea. If we think of literature, as J. Saramago points out, "before I start writing, I have to hear what sounds in my head, because if I complete one sentence with all sense, but that sentence lacks harmony and melody, it is still incomplete". The writer goes freely to the activity of thinking to create an outline that helps him to develop his work. The exploration of his thought leaves a trail of vague gestures over some support, author ideas, failed sketches, unconnected blots, erasures; we just want to externalize hoping that later they will become a good melody that puts together the story. This will happen in diverse acts of the creative world, allowing us to build an open space for innumerable expressive freedoms. We found an interesting phonetic diversity according to the language and the context to which we refer, allowing an enrichment of the knowledge of the word itself. In Italian, sketch is defined as *Bozzetto*, which derives at the same time from *bozza*, name given to a stone in the rough, an unfinished piece, non-completed. In Spanish *Bosquejo* is a word derived from *bosquejar* (taken from *bosc* = forest) which means destroying a tree (Cabezas, 1995); in French it is defined as: *Esquisse*, in Portuguese: *Esboço*; in German: *Skizze*. So, this word is a necessary aid in literary or graphic essays, when the action of thinking starts, when the test mechanism or the draft are established, without the need of removing neither the vagueness nor the wishes of expressing. The feeling of intimacy that every artist needs at some point in his creative state is experienced, it is the proof that our intellect reacts. Vincent Van Gogh wrote to his brother Theo the following: "what is drawing? How do you get there? It is the action of breaking through the invisible iron wall

which seems to be between what you feel and what you can" (Van Gogh, 2008). Therefore, it is difficult to talk about drawing and the drawing act, when someone does not draw. That invisible iron wall that the painter expressed to his brother, gives evidence of the expressed concern facing the first steps of his artistic work. He was concerned with improving his work as a draughtsman. Is it therefore the sketch itself the first relationship with thought? An author such as Mies van der Rohe once said: "I want to test my thought and action. I want to make something to think about. Also the feeling should be controlled by the action" (Blaser, 2001). And Mies himself, who was proud of knowing how to draw anything among his students and to point out (despite the continuous debates about the need of drawing in architectural learning) that drawing is part and continues during the projective work (Alcayde, 2012).



Fig 2. Seagram Building, New York City, Plaza sculpture sketch
Ludwig Mies van der Rohe (American, born in Germany. 1886-1969)
1954-1958. Pencil on note paper, 6 x 8 1/2" (15.2 x 21.6 cm).
Mies van der Rohe Archive, gift of the architect.
© 2012 The Museum of Modern Art, New York

Considering the sketch as an action linked to thought, is considering that expressing by lines or traces on the support allows the personal development of the individual. The sketch and its different forms of action and expression are the beginning of a learning based on the motor movement, as a spontaneous play of traces made by hand, getting endless graphic possibilities, enriching our gestural and creative ability. So it happens since early childhood, when the first line of the child, as a doodle, usually involves the start of the expression development, as Lowenfeld-Lambert explains: "*During this period (from 2 to 4 years), he will reflect his emotional and intellectual development in his creative work*" (Lowenfeld-Lambert, 1982). And regarding to the social development of the individual, the art itself can contribute to this development. Other author, R. Arnheim reinforces the idea that the act of thinking requires pictures and that pictures themselves contain thought. In fact, visual arts form the familiar field of visual thinking. The sketch has initially a very high level of abstraction, because it represents the language of thought, as we see the world in a different way. The level of spontaneity is as wide as the ways we have to communicate with words, and the interpretations we can make of them are immense. So if we call sketch to the initial outline in the execution of an artwork, we are reflecting our most inner thoughts, the discovering of ourselves. Is the sketch a reflection of that thinking, or rather an act that externalizes our way of being? In any case, we talk of that action, and not just graphically, but mentally. We could cite H. Michaux as one of the masters of abstract expressionism whose works were the non-verbal extension of writing, influenced by oriental calligraphy he speaks of "being possessed by movements, by those forms that come to me quickly, in a rhythmic succession". Actually, it is in literary and poetic exercises where the individual energy is transmitted under the cover of the blots, "in quick succession under the pressure of emotion" (Everitt, 1999). Speaking poetically, these movements, as emotional exercises, move past the limits of the effects of feeling, recreating openly the author's temperament transferring to a world of amazing configurations, beyond the disciplinary exercise of the use of an instrument. Gombrich reminds us, referring to the art of Chinese calligraphy, "that it is not so much the formal beauty of the characters as the mastery and inspiration that every stroke must inform" (Gombrich, 2002). The game of signs, spots, lines or stains, is an abstract language where the author leaves, passionately, his personal stamp. They may be intimate regrets, fleeting or perhaps useless

tests of an idea, but they would probably acquire a value in themselves. Lines are infinite, they are symptoms of human being's mental recreation, states of a creative act which is able of enriching the world of inventions, with the possibility that in every action or ritual performed of each gesture, a new universe may appear or can be anticipated.

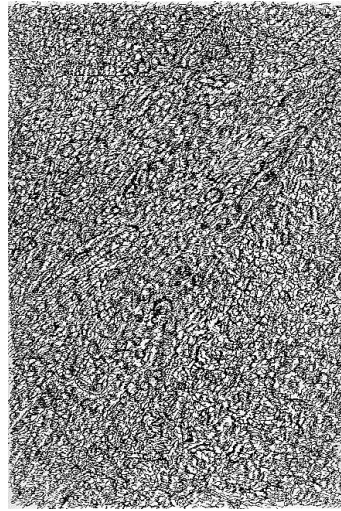


Fig 3. Untitled
Michaux (Belgian, 1899–1966)
The metropolitan Museum of Art. New York

1.2 Second meeting with sketch: the need of drawing what we see.

Without leaving aside the word sketch or the word thinking, we turned to the need of drawing what we see. In this case, during the initial stage of learning architecture, the professor teaches how to draw the architecture that exists, which students can observe in their environment and which, through pictures or plans, they try to rebuild graphically, learning its geometry, its shape, its structure, its space, etc. Obviously, our students need to know the built architecture, by means of systems and tools that allow them an objective reconnaissance. Is it necessary to know drawing in order to learn architecture? Basically, in our current pre-university educational system, there exist some gaps regarding to concepts of art education and particularly the drawing as a means of free expression and creation. Students joining our Schools of Architecture have not had enough preparation in the knowledge of drawing, and not even in the experience of observation or memory, to face new challenges. Time devoted to drawing or graphic subjects is increasingly declining. In each curriculum change, drawing becomes part of the subjects that are close to banishment, as visual arts in general, like music or even philosophy that "helps thinking or teaches to watch things" There exists the dilemma of how to teach architecture to students willing to learn architecture, without having the previous experience of drawing an object or element in different ways, even without knowing relevant concepts like the perspective representation. While learning to watch, we find our motivation which leads us to investigate what we know. Drawing by copying realities is possible, as well as drawing from imagining things. But is it possible that they draw what they want or just what the teacher wants? Difficult question, since inadvertently we transmit patterns, representation methods, and formulas acquired after years of experience. It is clear that students, in their first contact with an unknown environment, present difficulties and blunders typical of the beginning. Then we think about the question: how to teach drawing? Can we learn to draw or is it something innate? Firstly, drawing what we do not know is something arduous and complicated. And likewise, drawing what we know is a challenge even for draughtsmen. But it is imperative to try that students know their limits, open their own spontaneity and react to what they could do with a non-specific drawing, open, non-coded, their personal drawing. Learn to draw can take a person's whole life, it is a constant learning and continuous effort that sometimes we will give up for lost, because increasingly we need more time, more energy to make the drawing.

In this paragraph mentioned by Marina (2005) in his book *El vuelo de la inteligencia* (The flight of intelligence), he can give us the clue of how hard drawing is to achieve certain goals: "Katsushira Hokusai, Japanese draughtsman, wrote: from the age of six I had a mania for drawing the objects shapes. When I was fifty I had made countless drawings, but everything I have produced before sixty is not worth being considered. When I was seventy-three I learned a little about the real structure of nature, about animals, plants, birds, fish and insects. Therefore, when I am eighty I will have made more progress; when ninety I will penetrate into the mystery of things; when a hundred I will have certainly reached a marvellous stage, and when I am a hundred and ten, everything I do, whether a point or a line, will be alive". He died when he was eighty-nine years old, it is assumed that he made his higher progress and he was very close to penetrating into the mystery of things. We do not know what happened, but it's a beautiful story, despite it is so difficult to achieve what we dream. Certainly, learning to draw is not an easy task, we would rather say that it has many paths, and these paths are usually different for each person who works as draughtsman. In fact, drawing, as any other form of expression, is made of dedication and effort, patience and tenacity. Of course, if one seeks his drawings to be alive, he will follow the way of the thoroughness to achieve new expressive possibilities. This is: growing with intelligence. There is always an excitement in every line or every stain traced on a surface, there is a desire to do things. In each line we find new lines, and in each stain we find new stains, the search for those things is the discovery of a new drawing. There are no rules for this, there are no methods for those living in the drawing, it consists on wanting to do what you feel, nothing more. It is a feedback of the past and the present, a discovery of our graphic possibilities. Remembering the drawing masters is a good way to start learning drawing. Admiring the skills of those who wisely left an indelible mark on our early steps as learners is learning more about our own graphic evolution. Berger (2011) suggests this: "I enrolled at an art school (sixteen years old)... and I draw all day and part of the night. At that time, there was an exceptional teacher at school: an old painter named Bernard Meninsky... On the same sheet of paper, next to my goofy, impetuous and simple drawing, Bernard Meninsky drew with firm line a part of the model body, so that he clarified its structure and movement, infinitely subtle. When he got up and left me, I spent the next ten minutes scanning, agape, from the drawing to the model and from that to the drawing again. So I learned to investigate a little deeper with the look the mystery of anatomy and love...". It is worth to continue reading this story from J. Berger's book, educational and intimate, about the experiences while drawing. So, trying to understand the mysteries of drawing, we can learn the feelings which he transmits to us. At the same time, we support a way of learning where it is essential the will to learn and the use of new ways of individual graphic development, thanks to the training of our abilities of seeing and feeling. It is clear that the gaze allows acquiring knowledge, memory training, and new discoveries of graphic and descriptive capabilities. That allows explaining and generating essentially sensible forms, in support of the closeness between the author and the drawing. While transmitting knowledge about drawing to those who begin, we can not get away from defending the importance of drawing, but we must communicate its cultural value based on the diversity and freedom of thinking. Likewise, in the process of drawing, there should be a series of logical conflicts between what we can achieve and what we have actually achieved. There is a link between the confusion of not knowing how to make something and the ecstasy of achieving it. It may be the solitude and the privacy while we search, because actually we must be voluntarily absent during the experimentation of a project, whatever this may be. While teaching drawing it is essential to know how to communicate the essence of drawing from the personal experimentation, reflection of who we are and reflection of the showed sensitivity. The search is a necessary challenge for each line; it promotes new occurrences, creates unique and different forms, exercises imprecise moves, and plays with the graphic expressions invigorating insecurities... We must try to draw, because we learn to discover, because we learn to understand. Again we quote a short text of Valéry (2005) where he describes Degas as Crazy about drawing: "Work, Drawing, they had become for him a passion, a discipline, object of a mystique and an ethic that were sufficient alone, extreme concern which annulled any other matter, reason of perpetual and precise problems which free him from any other curiosity. He was and wanted to be a specialist in a genre that can be raised to a kind of universality".

1.3. Third sketch: forms of drawing with ingenuity.

Stories told from that thought or that immediate are born in the need of drawing. And we have different needs, as the ways of drawing. Again we mention Berger, when he indicates, after speaking of Picasso and of three stories of drawn experiences which suggest three different ways in which the drawings work: *"There are drawings that study*

and question that visible, others show and transmit ideas and, finally, those that are made from memory". Berger firstly mentions a drawing made from the act of looking with concentration, of drawing through settling in what we see, and from observation we draw what others do not see. The second category of drawings, which is about *showing in the paper what is already in the imagination*. He indicates that they are *drawings that join together, standing, making a scene*. And they are, as he mentions, drawings which do not speak to us directly, because they are drawings with a hand-crafted interest that create spaces of false virtuosity. And lastly, drawings executed from memory. Notes taken *quickly for a later use: a way of collecting and saving the impressions and information*. Actually he suggests that there are drawings *which are made to exorcise a memory that obsesses the artist, to remove a certain image from his head once and for all, taking it to the sheet of paper*. And he speaks about Goya, as an artist who expressed in his drawings the impressions made by his experience of war. Regardless of the possible types or categories of drawing, we point to the need of telling or not stories, the creativity, passion, joy, immersion, connection between body and support, mood, loneliness, expression, concentration, creativity, motivation. We mention the rhythms, immediacy, persistence, dedication... We usually draw for pleasure of drawing, because we feel freer and express our life circumstances. Making a drawing is connecting with the existence and leaving patent what we want to project. The teaching of drawing, whatever it is, should be in harmony with the present world. Suggesting drawing is a state which everyone should experience, as drawing and the forms of drawing open new ways of thought, is to release the mind and consequently active the intelligence. It is a creative act and, as a result, it is a state to build alternative thoughts, an emotional state that lives entirely with the human being. Need of drawing? Clearly necessary, since when we draw, we trace on a support, we discover a curiosity, an unconscious desire to project one's thoughts. The words and images become increasingly clear as we break through the ingenuity barrier, they become something conscious. Drawing is a language that becomes a purely expressive activity. The world of the senses is reflected in the mirror of the canvas. And the action of drawing without any approach is a dynamic that has its own value. Thus, the exercise of exploring from ingenuity, suggests multiple possibilities. The first sketches, limitless drafts, will intuit a certain final idea of which process a possible project may arise.



Fig 4. Chauvet cave
John Berger (British, 1926-)
Ink on paper



Fig 5. The butterfly bull
Francisco de Goya (Spanish, 1746-1828)
Pencil lithograph on paper
Museo del Prado. Madrid
Album G, 53. 1825 to 1828
Size: 194 mm x 150 mm

1.4 . An analysis in graphical practice.

The difficulty in the practical and graphical application of all these ideas is extremely difficult in first-year students in the course "Analysis of Architectural Forms" of the School of Architecture of Valencia, but even so, during the years 2010-2011 and 2011-2012, it was possible to carry out various graphic experiences in three short sessions. It is true that the conceptual or ideation drawing is not yet experienced in the first stage of architectural

studies and that is somewhat more complex to develop (as indicated in our paper *Forget what you have learned: spontaneous drawing for the genesis of architecture*), the architecture genesis drawing, and that which is needed for creative conception, is not developed until higher grades of architectural education, but we have included them as a truly gratifying "experience" and without expecting results that may follow computable patterns. The faculty responsible named the three short graphic sessions focused on the drawing spontaneity for creative immersion: *Session of the silence*, *Session of the music*, and *Session of the word*. They were given to a group of students that, voluntarily, came forward to perform the experience. These sessions were held on different days and times and each had duration of roughly two hours and a half. During each session, it was found that students reacted with surprise at the different sessions and showed a positive attitude despite their graphic gaps. In the *Session of the silence*, it was proposed to feel the silence in the inner space of the classroom drawing with different materials and media. The students drew performing various gestures. As a consequence of this experimentation, the students freely expressed in the media undefined spots and lines, and in general, they used for that white chalk and pressed coal. The rhythm and movement, from the beginning of the graphical creation, were slow, but once crossed the threshold of shyness and distrust in the exercise, some pleasant visual changes appeared. Students felt fascinated by the silence going by, something never experienced by them.

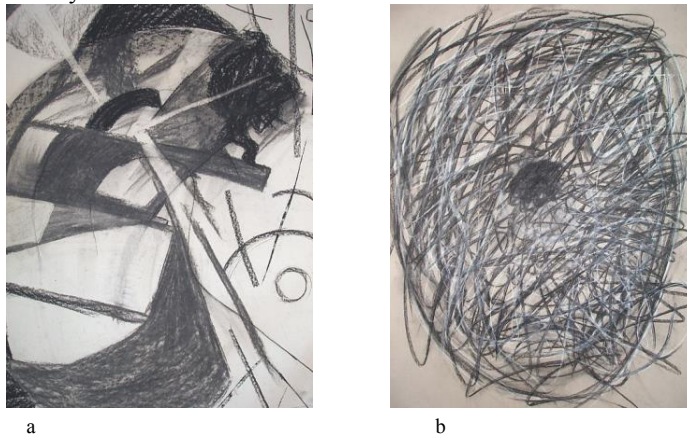


Fig 6.a,b Session of the silence

For the *Session of the music*, it was proposed to hear a series of different sounds and frequencies, recorded in empty interior spaces and in the days previous to the session. The experimental session, as a result, had similar reactions to those observed in the previous one, however, lines made by thick markers and brushes soaked in ink, had a connotation of dance on the support, letting the student to express himself with extraordinary pleasure by drawing strange and abstract representations.

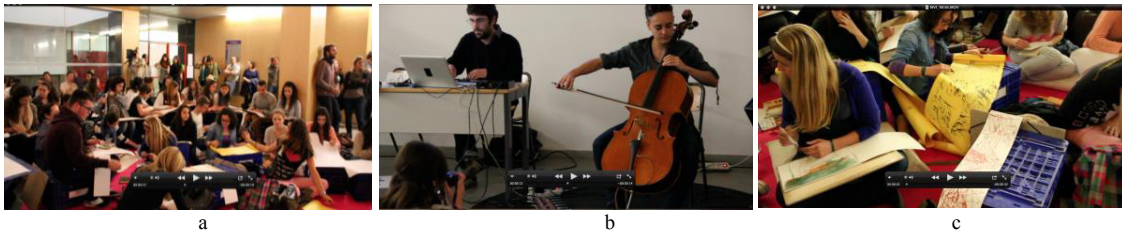




Fig 7:a-b-c-d-e-f. Session of the music

For the *Session of the word*, poetic texts from Federico García Lorca and Pedro Salinas were used. Texts were read by the students themselves, leaving a pause between verses. The strokes were small in size, frequented by turns and fast curves according to the extension of the poem. The reading helped them for concentration, generating a tireless atmosphere. They mixed various techniques, charcoal pencil, gauche made with care and some colour markers.

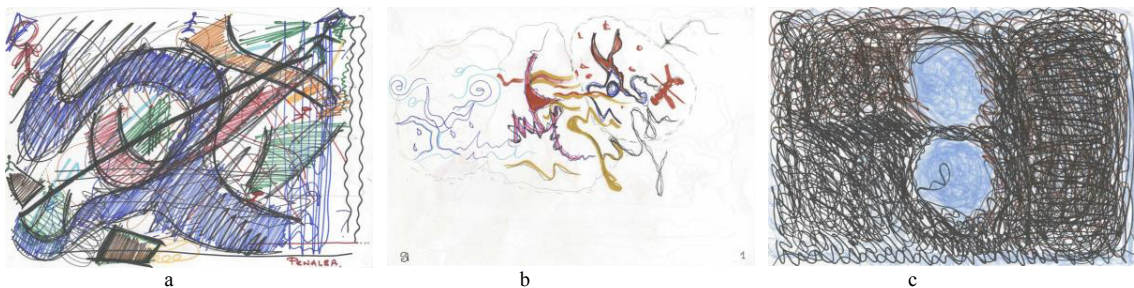


Fig 8.a-b-c Session of the word

2. Conclusions

As the conclusion of this paper we could highlight three key ideas. First, during the initial phase of studies in architecture and, in general, visual arts, drawing is the essential media to develop the inventiveness. Second, the need of drawing increases the ability to evolve graphically and therefore, by the experience of drawing exists a creative freedom that is necessary in the process of any artistic learning. And third, that spontaneity and the different reactions that arise during the phases of drawing bring oneself to a condition of alternative thoughts generation, an emotional condition that lives entirely with the human being. Thus, the exercise of exploring from ingenuity raises multiple possibilities; the first drafts, sketches without limitations, *will sense* some final idea from which processing a possible project may arise. The graphic practical application of all these ideas in first course students of the subject "Analysis of Architectural Forms" from the School of Architecture of Valencia was possible during the 2010-2011 and 2011-2012 academic years, with different experiences in three short graphic sessions focused on the spontaneity of drawing as creative immersion, entitled: *The session of the Silence*, *The session of the Music* and *The session of the Word*. These sessions were made possible thanks to the involvement of students and their genuine interest in learning the infinite actions in the drawing.

References

- Alcayde, R. (2012) The discussion in not over. A different point of view on drawing in architectural education. *Revista EGA expresión gráfica arquitectónica*, 16, 252-263.
- Berger, J. (2011) *Sobre el Dibujo*. Barcelona: Gustavo Gili, SL.
- Blaser, W. (2001) *Mies van Der Rohe. Arquitectura y Diseño en Stuttgart, Barcelona y Brno*. Vitra Museum.
- Cabezas, L. (1995) "El andamiaje de la representación". *Las lecciones del dibujo*. Madrid: Cátedra.
- D.R.A.E. (2001)
- Everitt, A. (1999) *El Expresionismo Abstracto*. Barcelona: Labor

- Everitt, A. (1999) *El Expresionismo Abstracto*. Barcelona: Labor.
- Gombrich, E.H. (2002) *Historia del Arte*. Madrid: Debate.
- Gomez, J.J. (1995) *Las lecciones del dibujo*. Madrid: Cátedra.
- Lowenfeld-Lambert (1982). *Educación por el arte*. Buenos Aires: Paidós Educador.
- Marina, J.A. (1992) *Elogio y refutación del ingenio*. Barcelona: Anagrama, S.A.
- Marina, J.A. (2005). *El vuelo de la Inteligencia*. Barcelona: Ensayo Filosofía.
- Nauman, B. (1991) Definition of drawing for the Exposition Drawing & Graphics at Boysman-Van Beuningen Museum of Rotterdam.
- Valéry, P. (2005) *Piezas sobre arte*. Madrid: A. Machado Libros, S.A.
- Valéry, P. (2005) *Piezas sobre arte*. Madrid: A. Machado Libros, S.A.
- Van Gogh, V. (2008) *Cartas a Théo*. Barcelona: Paidós Iberica.