

6

Arts Education in Portugal in the Eighteenth and Nineteenth Centuries: Drawing and the Governing of the Student

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CHAPTER MENU

The Arts of the Nobility, 2
Casa Pia de Lisboa: From “Outcasts” to “Artists”, 4
Drawing as the Nation’s Technological Sublime, 7
Industrial Drawing: The Grammar of the Machine, 11
Technical Drawing at the End of the Nineteenth Century: An <i>Almost</i> Futuristic Mode of Drawing, 13
Drawing at the Turn of the Twentieth Century: Jaime Moniz’s Reform, 15
Notes, 19
References, 19

It was within a dynamic of moralization of the people – particularly aimed toward children and “at-risk” youth (as we would term them today) – that artistic education began to be conceived in Portugal at the end of the eighteenth century and was subsequently incorporated into the public school system in the nineteenth century. The perception of the arts as a privileged area for the tutelage of at-risk youth reflects an understanding of the arts as a technology capable of transforming, from the inside, those who would practice them.

The arts were conceptualized and structured as a key element of education at Casa Pia de Lisboa, an institution that targeted the education of orphans, indigent children, and children with disabilities, particularly the deaf. At this time, the arts were already present in the Real Colégio dos Nobres (the Royal School of the Noble); however, in this second institution, the liberal arts’ primacy and status were based on a symbolic point of view, suited to the noble nature of those to be educated there: Horse-riding, fencing, and dancing were established as a trio for the education of the body and soul. Even though the nobility did invest in an artistic education, to be an artist was not seen as a proper profession for the elites.

In this way, the arts in education in Portugal cannot be considered without understanding the multiplicity of shapes that they have acquired, be it as technologies of government and self-government of children and the youth, or as mechanisms of social distinction. Arts education for the masses was mostly conceptualized as

2 | *Histories and Philosophies*

consisting of visual arts, with drawing receiving the most discursive investment, becoming perceived as the nation's technological sublime. Music, theater, and dance were mainly found within specialized artistic teaching – a niche that acquired a specificity and a subsystem of specific education.

This chapter seeks to delineate an image of the arts in education in Portugal at the end of the eighteenth century and during the nineteenth century, demonstrating the extent to which this era defined the principles and diagnoses that are recurrent today when the arts in education are advocated and when critiques are put forward of the political powers' disregard toward the matter. In outlining the importance the arts gained as a language of modernity, the chapter focuses most intensely on drawing and its development in school, particularly in relation to the strengthening understanding of the need to learn it.

The Arts of the Nobility

What do schools have in the realm where the gentry, in their youth, may learn to moderate their passions?

Sanches (1922: 210)¹

A charter document of March 7, 1761, established the foundation of the Real Colégio dos Nobres in Lisbon, an institution that would last seven decades. In the foundation text, there was a clear concern regarding the creation of a zone of distinction for a group of students, also distinct. Similarly to in various other European countries, there was a perception of studies being “more fertile when cultivated in schools [*colégios*]²” with regular hours and where students concentrated on the “virtuous emulation” of others' work. This was seen to contribute to better job prospects and to more discipline. In the charter document, legislators covered what had been at that point a short history of teaching nobles in Portugal, outlining a scenario of complete neglect, decadence, and ruin (charter document of March 7, 1761). The solution seemed to be found in the direct governing of schools, with the oversight of a rector. He would be in charge of the “governing of the school” and would be the “Person of Arts and Virtues” who punished disquiet and noise and looked after maintenance, neatness, and decency (charter document of March 7, 1761). The disciplinary space was divided into parcels of time, spaces, and tasks.

The initial number of “pensioners” (students) was 100 and the conditions for admission were clear: knowing how to write and to read, not being younger than 7 years of age or older than 13, and, most importantly, owning the *foro de moço fidalgo* (noble young man's charter) (charter document of March 7, 1761). The institutional organization as a whole revealed a disciplinary rationale and the idiosyncratic characteristics of a total institution (Goffman 1991).

The curriculum was long. Students would learn Latin and Greek, rhetoric, poetry, logic, and history. In a second phase, they would take on French, Italian, and English. They would even learn mathematics, military and civil architecture, and, finally, drawing. The array of subjects would be completed by physics and the arts of horse-riding, fencing, and dancing. The learning typology that formed this menu of knowledges produced distinction through the mobilization of a symbolic capital that turned into human capital. The arts also proved to be effective from the perspectives of discipline, policing,

and the government of subjects, but were only imposed at the expense of their own legitimacy as a superior sphere of culture capable of “civilizing.”

During the school’s final stretch, in 1835, vocal and instrumental music were introduced. These activities’ monopoly by the nobility was converted into the nobleness of practicing them (Bourdieu 1996: 79). Civil and military architectural studies were perceived as intimately related to mathematics, but it was ordered that they would become annexed to drawing and that there would be a different teacher for each of the areas. The military architecture teacher would instruct the students in “the general rules of fortification,” “the various regular and irregular methods so as to fortify a square,” “the ways of making, and defending, a location,” and “the fortification of fields, and armies.” Drawing as an enabling instrument for the acquisition of knowledge was evidenced: “They will be accustomed to drawing, placing before their eyes the lessons, that [the teacher] will present them executed in small wooden models, which in their sight will show them the utility, and the need of each part which constitutes them.” This was intended to be an education strongly connected to reality. The civil architecture teacher, after imparting basic knowledge and elementary rules, would move on to the explanation of measures and proportions. In a similar manner, the drawing teacher would instruct the students in the notions and the “main measures” – the “respective proportions” – that “constitute the foundations of this Art.” The lessons in military and civil architecture would take place in the morning, and on the afternoon of the same day, with the help of the drawing teacher, there would be an attempt to combine practice with theory so that the students would form “clear” and “distinct” ideas of what they were being taught (charter document of March 7, 1761).

The Real Colégio dos Nobres ceased to exist following a decree of January 4, 1838, as it was not deemed to be in “harmony with the political constitution of the monarchy, due to being an institution of privileged schooling” (Ribeiro 1876: 322). However, this topic was not completely new. During the 1820s, the Portuguese parliament had discussed the school’s privileged character. Parliament had addressed two issues: paying the teachers using funds from the national treasury, and the possibility of the institution’s closure. The school was considered anti-constitutional in the sense that it was committed to “a single class in society, excluding public instruction.” “And what is taught there? Philosophy, Greek, Latin, drawing, rhetoric, etc. ... Here, we even observe fencing and dancing lessons, with the master builder paid using the literary subsidy. Now, are not all of these sciences taught in many public and private classes in Lisbon?” Parliament returned a negative answer on the funding: The so-called nobles should study “where all the others go.” “Whoever wants a private instructor should pay for it themselves, as citizens have plenty of public schools in which to learn” (parliamentary debate of January 11, 1823).

If the principle of equality was beginning to be established as one that would be common to everybody – thus responding to the yearning of a bourgeoisie that fought against the social positions imposed by a system oriented around noble birth – at the same time, concepts as skill, talent, and merit were being constructed as the elements on which every subject, from then on, would be measured. Skill would henceforth be the instrument capable of dividing society according to individuals’ respective professional destinies. This policed distribution of the sensible clearly emerges in Almeida Garrett’s (1869) treaty *Da educação* (On Education). The type of artistic education a student received was determined by a student’s social background and imagined professional future:

4 | *Histories and Philosophies*

But for those who do not make a job out of the arts, it is convenient, in the current state of human knowledge, to descend from the studies of science to those of the arts. The arts are either mechanistic arts or liberal and befittingly fine arts. About the former, little must the noble student learn; regarding the latter, more or less he must study them all, and practice some. Music, drawing (including painting), and dancing, you may say it does not sit well for a right-minded person to not know them, and to a certain extent, to not practice them. Naturally, however, intuition calls us to one or more of these gifts, in that the educator's indulgence must easily yield to the student's will, and leave him to prefer that which attracts him most, provided that he doesn't despise the others. (Garrett 1869: 44–46)

To speak of the arts as a destiny brought into question the issue of status – specifically, whether the arts was linked to an elite or a working class.

Casa Pia de Lisboa: From “Outcasts” to “Artists”

I don't think that is too much demand to squeeze in severe manner a discipline of a collectivity, by whose ranks so many thousand boys pass, throughout the years – the men of the future, who will be artists, workers, men of science and letters.

Margiochi (1893: 23)

Casa Pia de Lisboa was a Portuguese institution created on July 3, 1780, by Diogo Inácio de Pina Manique, the *intendente geral da polícia* (police superintendent). It was one of the first establishments to foster and rehabilitate children and the youth who would today be considered to be “at risk” (Martins 2009). From its inception, Casa Pia marked the Portuguese educational landscape, configuring itself as a laboratory of pedagogical modernity (Ó 2005). It was here that the teaching of the arts in Portugal was systematically developed. Here, the arts were considered a desirable destiny for the children and youth guarded by the institution, and here the concept of the student's holistic education reached the highest level of expression. In addition, at Casa Pia, disciplinary techniques were developed in relation to children and youth deemed “abnormal” or “devious.”

The commission that in 1821 was responsible for visiting Casa Pia recorded that “there were masters who taught how to produce canvases, denims, ropes, cotton fabrics, silk, socks, linen cloths, and various milling products” (Macedo, Silva, and Trigo 1821: 408). It is clear from the commission's report that it was concerned that the institution should foster and rehabilitate individuals through work, in order to enable them to fight against idleness. However, the commission criticized the methods adopted at Casa Pia, especially in the drawing classes. Displaying a clear awareness of the economy's need for qualified workers for the arts and industrial crafts, it was highlighted that drawing classes should be limited “to drawing principles relating to each and every person's handling of a pencil, so as to further their professional objectives.” The commission complained that the institution was focusing on “creating artists, not painters and architects” (Macedo, Silva, and Trigo 1821: 409). Whoever came out of Casa Pia should “know how to read, how to write, and some principles of drawing [and] geometry.” It was desired “that from Casa Pia would emerge men capable of using a machine

even if only a simple one, without destroying the wood” (Macedo, Silva, and Trigos 1821: 409).

This same report stated that, when Casa Pia opened, the principle of fostering and rehabilitating children was not visible but was nevertheless “necessary.” The dynamics that developed in this context evidence a progressive refinement of the technologies of government, directly connected to the regulation of the behavior and the conduct of Casa Pia’s first admitted students (Martins 2014). The planning of time and tasks, the isolation of students, and vigilance over students were established as the first mechanisms for the production of “useful” and “docile” bodies. The general theory of training, as Michel Foucault (1995) explains, is to make the body examinable and manipulable, so that it can be submitted and transformed and so that, on the whole, it will learn to wish to profoundly transform itself. Francisco Simões Margiochi, the institution’s chair in the end of the nineteenth century, characterized the institution as a “complex” one, quoting the Portuguese writer Latino Coelho:

Casa Pia de Lisboa, instituted in the São Jorge Castle in 1780, was a vast and complex establishment devoted at the same time to correction, education and work. It was simultaneously a prison, a school and a factory. Its design was to redeem people ruined by addiction, or to save the indigent from damnation. Officially, charity was its object, but productive charity. (Latino Coelho quoted by Margiochi 1893: 6–7)

The institution’s complexity can be seen in the types of “species” it fostered – inhabitants of the fringes, closer to the insane and to the criminal than to normality. In Casa Pia, every action was conveyed deeply; above all, this was a house where moral orthopedics was executed not only by the direct imposition of discipline but also through the presence of each and every engineer “of the soul” (teachers, psychologists, and school doctors) (Rose 1990). The idea was to infiltrate the student’s soul and to permanently expose it, both in order to objectify individuals as inhabitants of the institution (e.g., via methods of recording, representing, accumulating, and circulating information about the student, and of projecting images of what a student should be) and in order to progressively improve individuals’ work habits and activate mechanisms of introspection.

It was about correcting, normalizing, and domesticating, but always through the operation of techniques that would trigger in the subject a binding will to be transformed into another subject, socially fit and professionally productive. Not by chance, the boarding-school-type regime, used by the institution from its first decades, was the best solution for the students’ education. The duo of “knowing” and “doing” emerged as a technological set – with one aspect extending the other – that could be applied to study. As a “laboratory” designed to change people, Casa Pia managed to gather together the essences of the prison cell, the workshop, and the hospital. It was important to train the *casapiano* (student) in a way that was totalitarian: to work on the soul’s resources, intelligence, sensitivity, and will.

In 1859, José Maria Eugénio de Almeida was appointed as Casa Pia’s chair. His first report, published in 1861, was a blade of rationality that sliced through the entire institution. He denounced the excessive number of students, the place’s lack of hygienic conditions, the proliferation of eye diseases, the indiscipline, the orphans’ poor nutrition, and the lack of regulation. He aimed to solve all these matters, whether by decreasing the

6 | *Histories and Philosophies*

number of students, rehabilitating the rooms to provide fresh air and avoid humidity, or isolating the healthy. The chair's actions went further; he intended to change the curriculum. Considering the introduction of a higher-level school premature (given how much he considered Casa Pia's students to be behind where they should be), he focused on elementary instruction. He directed that, during this three- to four-year period of elementary education, experience from previous lessons should be built upon in planning the rest of a student's education, on the assumption that education was a process, "part of a plan" that would later be developed and completed. He wrote about education being useful. Drawing classes would be overhauled, giving them "features more congruent with how they would be used in students' future occupations" (Eugénio de Almeida 1861: 71, 72).

In 1866, Eugénio de Almeida appointed José António Simões Raposo the studies provider. "A crazy chairperson, a crazy director of studies, and eight crazy teachers": Such was the manner in which D. António da Costa, a Portuguese writer and politician, ironically congratulated Eugénio de Almeida for choosing Simões Raposo. "Forgive me," he went on, "I almost forgot to mention another madman: a gym teacher, and, moreover, wanted abroad" (António da Costa 1870: 118). In the report Simões Raposo would write about his first three years working on Casa Pia's curricula, after commenting on the transformation that was undertaken by Eugénio de Almeida, he devoted himself to the elaboration of the principles of physical, intellectual, moral, and religious education that guided his practice. In his report, there began to emerge the principles that would become established as the school's modern grammar. From a pedagogical point of view, the starting point was the establishment of timetables that defined the various levels of complexity of the exercises, and the rewards and penalties to be provided:

My entire golden dream is to get to a day where the teacher has everything made within his classroom: collections of problems that gradually extend students via graduated intensity and that are relevant to a practical and rational school; collections of topics suited to the development of children's intelligence and practical sense, and designed to awaken feelings of honor, work, economy, justice, and charity in their hearts; and subjects, gradually transmitted, whether intuitively or analogically, to the children's core and conscience – subjects drawn from their everyday life, from their own toys, from their trivial occupations, and finally from whatever may be applied to real life. (Simões Raposo 1869: 15)

Casa Pia inverted what education had been in Portugal up to that time. Once again, it became Portuguese society's laboratory. As for learning, the attitude of moving "from the unknown toward the known" was changed to an attitude of moving "from the known toward the unknown"; likewise, "from the hard to the easy" became "from the easy to the hard." Methods favoring rote learning were replaced with the attitude that "the memory that retains" comes "from the comprehension that understands." Finally, students were encouraged to move "from satisfaction to joy [and] from natural truth to practical truth" (António da Costa 1870: 122). The "school of the 19th century! ... the school of the future!" (Simões Raposo 1869: 19) thus became embedded in the fabric of Portuguese society.

Education was approached by the studies provider in six areas that, although they communicated between each other, were separate in their scope: education of

the senses, physical education, intellectual education, moral education, economic education, and social education. Drawing was regarded as necessary and indispensable to the citizen of the nineteenth century and of the future, both for the position it occupied within industry and for the moralizing and regulatory roles it played. Everyone, without exception, would need to be able to draw: mathematicians and politicians, men and women, carpenters and stonemasons. Ideas could not exist in the spirit without the assistance of shapes. Teachers needed drawing and students needed drawing:

The good teacher first introduces the object which represents the idea that he wishes to convey to his students, ... shows them its image embossed, printed or drawn on the blackboard; ... resorts to analogy, ... and only when he is unable to use any of these methods should he resort to description, which still coats the object in a thousand images, in a thousand appropriate comparisons. Here is the utility of drawing to students, and how it becomes a powerful instrument in the thorny and difficult art of teaching, in the teacher's hands. (Simões Raposo 1869: 165)

The entire conceptual construction of the program was intended to employ a modern kind of pedagogy, based on the work of Johann Pestalozzi and Friedrich Froebel in the sense that it set up paths guided by intuition and used progressively graduated courses. Other influences included compendiums by M. Ghyra and Teodoro da Mota, who were seen in Portugal as pioneers of new methods. António da Costa (1870: 124) regarded Casa Pia's revolution as a revolution against the routine, anchored to three principles: "methods, methods, and methods."

Just two decades after the plan designed by Eugénio de Almeida and Simões Raposo, Margiochi highlighted what he could propose anew in the teaching of crafts, accordingly to what was practiced in the civilized world each day. From how António da Costa depicted the institution, thrilled by Casa Pia's transformation in the hands of Eugénio de Almeida, we could say that in that hatchery truly modern citizens were being produced – that is, natives in a language of industry that the nineteenth century would vulgarize: drawing.

Casa Pia participated in two international exhibits – Vienna in 1873 and Paris in 1875. It "caught the eye" and in both fairs "was prized as an educational establishment" that was keeping abreast of the most remarkable institutions from the "civilized nations" (António da Costa 1870: 130, 131). Praise was given to linear works of drawing displayed at the exhibits as well as to architectural drawings and drawings depicting machinery.

Drawing as the Nation's Technological Sublime

Throughout the second half of the nineteenth century, drawing was progressively asserting itself as a language, and it established itself as that century's technological sublime. The idea of drawing as a language is presented by Molly Nesbit (2000) in a work that is built upon the teaching of drawing in France during the nineteenth century and at the beginning of the twentieth century. For Nesbit, the need for the teaching of drawing became common sense – that is, there was moment from which the idea of learning to draw was not only necessary but also a mirror of modernity. Ribeiro

8 | *Histories and Philosophies*

(1873: 61) commented that, in Portugal in the “past times,” drawing was “considered as mere recreational art, when in fact, and by the nature of things, it is a universal and indispensable language.” Most of all, drawing was becoming industry’s language, for which there was an urgent need to create a grammar.

In the USA, following John Locke’s thinking, in 1749 Benjamin Franklin proposed that drawing should be institutionalized as part of everyone’s education, especially in terms of the copying of prints and the study of perspective. Drawing was regarded as a universal language, understood by every nation, and in this was the rationale for its utility, not only for workers’ education but also for the education of the nobility:

Drawing is no less useful to a Mechanic than to a Gentleman. Several Handicrafts seem to require it; as the Carpenter’s, Shipwright’s, Engraver’s, Painter’s, Carver’s, Cabinet-maker’s, Gardiner’s, and other Businesses. By a little Skill of this kind, the Workman may perfect his own Idea of the Thing to be done, before he begins to work; and show a Draft for the Encouragement and Satisfaction of his Employer. (Franklin 1931: 12)

What can be seen here is one side of the rationale for the necessity of an artistic education. This rationale took shape in a debate, in the most scientific manner possible, that continued to expand within the pedagogical sciences, coexisting with the idea that art is more than just functional objects.

David Kamens and Yun-Kyung Cha (1992), who studied the progressive introduction of new subjects within modern school curricula, speak about artistic education and physical education as being at the core of that innovation. The justification for the necessity of art in what was intended to be a school for the masses did not take long to establish. This theme has become a fight that has continually encountered blocks in the political arena and in ongoing accusations of Portugal’s low cultural level, although it has also provided the potential for progress and been a driving force for change. In a speech given at the Academia de Belas Artes de Lisboa (Lisbon Academy of Fine Arts) in 1862, when distributing the awards, a teacher at the academy, Francisco de Assis Rodrigues, talked about the visual arts as a “universal language.” He found the unifying link in drawing:

Isn’t the study of the drawing arts also very useful to the mechanical arts, or to the factory crafts? Ah! What a vast field opens now before my eyes, when I consider the utilities the factory and the industrial arts pick from the visual arts! Not only do they participate in the education of civilized people, who must learn drawing, as Plato said he learned, along with the most sublime sciences, so as to enable himself to properly judge beauty, but they also should be a part of the nations’ instruction. (Rodrigues 1862)

The consensus was that drawing would be essential to the training of artists and workers.

The promise was that the language of shapes could be organized into a grammar of universal scope. This grammar could be common to all areas of education and, later, could be tailored to specific levels and adapted to the various professions, starting with the use of line and making art the primary means of education of the person of the world, the worker, and the artist (Nesbit 2000: 23, 24). The same principle that had guided the

formation of language was the principle that should be followed for the construction of drawing as a language. Geometry did not exist within art's language and yet it was the grammar for every shape. Dot, line, and plane fitted together as pieces, allowing for the construction of a complete puzzle that itself could be a representation of the world's totality. Constellations of thought, analogies, and trajectories that deposited themselves on the drawing constituted it as the instrument for the world's replication – somewhat of an archive of the visible, whose order was attached to geometry's infinite recombinations. Geometry established itself as the one measurement that could be applied to everything: objects, nature, the soul itself, and thought. Applying geometry as a lens for the eye seemed to be one of the major formulations of the century. The concepts involved were simple: vulgarize and make useful. Educate the eye and train the hand. Forming geniuses would never be the purpose of education; rather, education's purpose was to produce skillful people, capable believers, and good spirits. Quite clearly, it was being announced that the main purpose was within the realm of drawing:

[Drawing] trains the student in the fair appreciation of objects' distances, dimensions and shapes, to dress his hand within the habit of reproducing those objects with perfect exactitude, by means of the pencil; assists him in constructing a thorough idea of everything he sees, noticing its dimensions, differences and analogies; training him afterwards in reproducing those same shapes, beginning with the easier, and gradually moving on to the more complicated. (Branco 1886: 628)

This way of learning was configured by the pedagogical and psychological discourse. Seemingly through alchemy, school subjects transport knowledge of art to the child and the youth, influencing their psychology. The magical transformation referred to by Thomas Popkewitz (2004), which occurs in how knowledge is transported via the framework of the school, is marked by the expectations built around the conceptions of childhood or adolescence, whose main purpose is to govern students, transforming them into active subjects capable of "solving problems." The task of simplifying and defragmenting what was once a singular entity – drawing – and reducing it to snippets and exercises conceived from the simple to the gradually more complex is the didactic strategy that most reflects, alongside tailoring specific particles of knowledge to specific age groups, the translation of subjects into blocks to be consumed by the student. When making the child within the field of governmentality, there is a need for a necessary stabilization of knowledges and, because of that, nowadays, this strange methodology presented more than a century ago does not sound strange to us:

Make then all the lines' fortunes defined, triangles, quadrilaterals, polygons, geometric figures, cubes, prisms, cones, etc., coordinating them symmetrically, in an enjoyable manner to see. Afterwards, draw puerile toys, gardening instruments, utensils, flowers, leaves, a rock, a row of walls, in sum, all the objects that delight the child, thus guiding him to the acquisition of new knowledges. (Branco 1886: 628)

Through considering the above exercise, today's reader gains access to the historicity of their own present. But the reader will feel more familiarity – and, simultaneously, strangeness – upon confronting the division, the increasing complexification, and the

methods that configured the teaching of drawing's discursive order. The hybridization between teaching's role in the construction of disciplined subjects and the position it holds within the "symbolic" web of artistic learning makes explicit the need we have to abandon the cleavages between freedom and discipline, between governmentality and autonomy. Halfway through the nineteenth century, there was no discursive police to inhibit the dictum of the exercise of drawing being like a kind of gymnastics that should be imposed on students; in this view, only excessive training would lead to a fully fledged dominance of the self. The new order of sight was fabricated within what constituted the pedagogical discourse about drawing. The exercises, regarded as means of both continuous exposure to observation and the repetition of making, were assumed as the general rule.

In a way, it was treated as implicitly true that objects would appear to be clearly orchestrated and arranged when perceived by an illuminated (trained) eye. This way of seeing was learnable, but it was necessary to weave the parameters of how it was constituted. It was about treating sight as a physical property of a person and, therefore, as a field of governmentality. But this did not mean reducing sight to a physiological property – rather, it meant opening the possibility of modifying and expanding that property. What deserves to be emphasized here is the possibility of learning to draw and grasp a panoply of shapes through absolute commitment to the exercise of observation and the training of the hand. Binding attention to those tasks was the key to the student's self-governmentality and to a literacy that would be transformed into industry's great common sense. Learning to see was perpetuated as the primary goal. Achieving it would only be possible through intense training in the properties of line, measurements, angles, and orientations.

The line of drawing attached itself to vision, and an entire grammar, intended for the production of objects, was established in the to and fro between reality and its translation by the language of drawing. Drawing was regarded as a science. Its internal articulations occurred through the codification and possibilities for analyzing shapes. Relief exercises that followed two-dimensional shapes constituted the moment of putting to the test all of this acquisition of the "first letters" of learning to see. It was recognized that the first dive into the grammar of drawing was excessively abstract, but "it couldn't be otherwise, because it was necessary to insist on the principle of method" (Branco 1886: 629). It was the teacher who was responsible for diminishing that distance between the real world and the abstraction of its translation through its representation on a sheet of paper or graph paper (dotted or entirely white) or on the blackboard. Ornamental figures, whether because of their decorative elements or because of their capability to combine the abovementioned principles and even symbolically represent art, were the "pleasant applications" available to the student in this first drawing phase (Branco 1886: 629). Studying them was founded on copying. After being introduced to ellipses, ovals, and spirals, students were next introduced to copying ornamental figures inspired by the plant world. It was thought that knowledge should be constructed after being deconstructed so that students could grasp it. The starting point was an extremely flat drawing, which introduced students to several ideas: that everything could be reduced and tamed using the empire of the line; that the line itself could be subdivided into the desired number of parts; that positions and objects could be constructed via the relations between lines; and that curved lines could be found in art and in nature. Finally, before students began to learn about

three dimensions, it was necessary to initiate them in memory drawing and dictated drawing.

This last exercise, dictation, was structured as the moment to access the degree to which students had assimilated previous lessons. For that reason, the figure to be drawn had to have a geometric nature and be extremely clearly recognizable from an oral description. The teacher would choose a figure with distinctive phases of execution and would successively dictate to the students the stages of how to draw it. This exercise was envisaged to contribute toward three great goals: “to determine the terms employed in drawing”; “to enlighten the student on the steps to follow in construction”; and “to force the student to reflect before tracing lines” (Branco 1886: 630). The method would later be developed and made more complicated, but it would always refer to what had been done before: moving on, stepping back, or reversing aspects of the original exercise. It was deemed that demonstrating knowledge resulted from gradual and linear learning of a process and that, after mastering this path, students would be able to follow it both forward and backward. The student would then be in possession of knowledge regarded at the time as true and immutable: “If, after completing the exercise ... the student is able to dictate a certain figure’s construction, this will be an opportunity to develop the child’s spirit of analysis and the precision of their language” (Branco 1886: 630).

Memory drawing, which was executed by rote, adopted from scratch, and undertaken in parallel to copying figures, proved fruitful in the training of attention. This was the moment, the most radical of them all, when the child and the youth would confront the limits of their own capabilities. A single exercise can both show the skill of those who complete it and expose those who cannot complete it and, in this way, it can invalidate the latter as holders of a knowledge that is desired: “Memory drawing is the sanction of observation by the eyes; an object well and intelligently observed and copied must be reproduced by rote” (Branco 1886: 630).

In practice, just as in theory, geometry spread as the basis of drawing. As Nesbit (1986) observes, the language from which the learning of drawing was imagined, and the principle on which its perceived necessity in modern life was founded, was based on an aesthetic of neutrality, configured, however, according to regimes of both particular visibility and visuality. Cézanne had earlier proclaimed the importance of the cylinder, the sphere, and the cone as the three elements capable of containing everything and of generating everything in the world of visuality; this was seen as common sense in the technical learning of drawing. That neutrality asserted itself through its retinal nature. The truth of the represented objects, whether in a drawing that sought to capture an object’s surface, in a mechanical drawing, or in a perspectival drawing, was not optical. In the discourse of those who advocated the teaching of drawing as a tool and as a language of daily use, drawing was about sustaining a language of work applicable to the new industrial world. Drawing’s capability to create progress made it the technological sublime of the nineteenth century and, more importantly, produced the possibility of expressing “things” rather than ideas.

Industrial Drawing: The Grammar of the Machine

It was in the context of drawing as the nineteenth century’s technological sublime, in 1836 – the year of the foundation of the academies of fine arts in Porto and in

Lisbon – that legislators created the Conservatório de Artes e Ofícios de Lisboa (Conservatory of Arts and Crafts of Lisbon) and the Conservatório Portuense de Artes e Ofícios (Conservatory of Arts and Crafts of Porto). The decree that established the capital's conservatory, whose principles would be followed in Porto, stipulated its nature and purposes: “There will be constituted in Lisbon a general deposit of machines, models, utensils, drawings, descriptions, and books relative to the different arts and crafts” (decree of November 18, 1836). The conservatory, thus, would be the archive and museum for industry and for those arts employed within it, incorporating a collection of machines and their multiple related objects, such as models, drawings and descriptions, and books. Even though the description of the conservatory's contents started by mentioning machines, what should be noticed is that the decree denoted an axis running through the grammar of the machine in the sense of its conceptualization and production. The legal decree's words encapsulated the horizons of the machine.

According to the decree, a room, or more than one, should be set aside to store “the machines or artefacts that in the future will be invented in the country,” and their inventors would have the “obligation of depositing in the general exhibition Sala Pública [Public Hall] a model, a drawing, or a description of the invention,” thus illuminating the creative process (decree of November 18, 1836). Within this context, in which there was a clear and conscious understanding of the envisioned future of machines, progress would inevitably be made through the technical advancements of Portuguese scholars. In December 1852, at the instigation of the politician Fontes Pereira de Melo, industrial education was set in motion in the two main cities in the country (Lisbon and Porto).

In terms of a historical chronology, 1852 was the year when industrial education was established in Portugal, through the creation of the Instituto Industrial de Lisboa (Lisbon Industrial Institute) and the Escola Industrial do Porto (Porto Industrial School). However, the idea of a technical education that would be capable of keeping pace with the production needs of society and with modern emerging economies dated back many years. This is evidenced, for example, in the earlier establishment of industrial and commercial *ensino técnico* (technical instruction) and even the founding of the aforementioned Oporto and Lisbon academies of fine arts. The idea that was becoming established was that the progress of civilization, both moral and economic, would be one of the driving forces, if not the only one, in the advocacy of an artistic heritage for the nation and of improvements in the study of applied arts (not just the fine arts but the industrial arts and crafts as well). The modernization that was imposing itself throughout most of Europe showed that economic development would result from a policy of organization rooted in learning. The principles of government, economics, and aesthetics were mixed, naturalizing the idea that art and knowledge of it constituted the strategic vector in mass education. The mastery of drawing as a new tongue that everyone should learn became the nineteenth century's topos, although, in terms of methods, there were various conceptions of what that drawing would be.

The state thus found itself obliged to answer the changes within the world of labor, not only guaranteeing the training of future workers but also, more than that, ensuring the production of subjects capable of being inserted into the factory's new discipline. What was happening here was the development of a new literacy, not just visual but technical as well. Technical literacy involved the mastery of four notation systems and their respective vocabularies and grammars: alphabetical expression, scientific notation, mathematical notation, and graphic and spatial representation of objects (Stevens

1995: 2). It was under this new literacy, which was particularly based on drawing, that the discourse of progress began to emerge, combining the factory, the workshop, and the studio. Future workers' horizons of development and morality were deemed to be joined to this knowledge, which then emerged as useful. It was said that teaching, when "properly oriented, is the people's greatest moralizer," and it was thought that it should be mobilized to offer a perfect means of organization and to provide the necessary means to exert "its action effectively." "Bad and incomplete teaching," warned the legislature, "may be harmful to the citizen, but it is always dangerous for the state" (decree of December 5, 1918). The discipline of the workshop, studio, or factory has as its purpose the fabrication of a body capable of responding efficiently, as if the body itself is part of a multi-segmented machine. The habits of discipline, circumspection, and reflection allow for the development of a morally fit citizen. This was the apparatus into which drawing was inserted as a form of education intended for the masses. Students were envisaged to be, essentially, the children of the lower income classes, and the following was envisaged to be the process of training:

The targets of the legislators of our industrial redemption must be this: to make teaching practical, by entirely annexing classes to the workshop, as much as possible, and fixating the worker's incontestable skills on the historical tradition of the old industries and Portuguese factories ... Once the apprentice has been familiarized with the course's graphic and scientific rudiments, has made drawings by hand, and has looked into the secrets of perspective, the importance of color, and the geometric and aesthetic perceptions of the object to be copied or created – to make him a righteous worker or an extremely agile and elegant artist – it is indispensable to summon him to a field of creation where his inventive abilities may spread their wings; [this field of creation should allow] infinitely varying conceptions and avoid the old methods, including falling into the deleterious routine of mechanical repetition, which is antagonistic to the process and honor of a nation that desires to be industrial. (Almeida 1892: 341)

Technical Drawing at the End of the Nineteenth Century: An Almost Futuristic Mode of Drawing

Ah, to be able to wholly express myself like a motor expresses itself! To be complete as a machine!

Pessoa (1915: 77)

Due to the significant changes it heralded, especially regarding drawing and the introduction of arts and crafts within the curricula of industrial schools, this section will examine the decree of October 5, 1893. In this document, general elementary drawing was divided into two courses, with two years for the first and three years for the second. Short, concise, and focused sentences configured drawing's curricular programs within technical instruction. The first year's curricular prescription began with an "intuitive knowledge of bodies, surfaces, lines and dots" (decree of October 5, 1893). The curriculum explicitly paved the way to learning visual language's basic

14 | *Histories and Philosophies*

elements, crystallizing the modern grammar of artistic education. Topics covered included bodies' limits, volumes, surfaces, dimensions, and lines, in terms of straight, broken, curved, horizontal, vertical, perpendicular, oblique, and parallel lines, and the dot. Students would draw by sight, copying "figures made of stone by the teacher in the students' sight" and consisting of straight lines and solid geometric objects. First students would draw the cube, the parallelepiped, the prism, and the pyramid, and then the cylinder, the cone, and the sphere. All drawings were made in charcoal and pencil. The "intuitive knowledge of perspective" (decree of October 5, 1893) was among the list of desired results. Exercises using cardboard to construct solid geometric objects were added to the simple exercises involving combination and the simple application of lines, polygons, and the circumference.

The next step shows that teaching was still undertaken progressively, not yet considering students' physical or mental ages. However, the exercises' graduation determined their disciplinary efficiency. Students were introduced to the auxiliary instruments of geometric drawing – ruler, compasses, set square, and protractor – and would then use them to trace parallels, perpendiculars, angles, various polygons, fretwork, and curves. The previous exercises on perspective were continued but made more diverse – for example, including simple elements of architecture and simple vases. Solid geometric objects in cardboard would be employed but "applied to gradually more complicated cases" (decree of October 5, 1893).

In the second course, starting in the third year, there was an insistence on exercises in perspective, now targeting groups of solids and everyday objects. The course covered the notions of plane geometry, projections, nets, and cavalier perspective, via simple exercises. So as to be adapted to industry, the student should rigorously understand the back and forth between the object and its translation in the plane of drawing. Scales emerged, as did the proportional compass, symmetrical and other similar figures, the circle, tangent circles, tangents, and secants. Drawing was conceived as a tongue that would not be a stranger to mathematics. Students studied the oval, the ovoid, spirals, the ellipse, and the processes used to trace them. There was a constant process in which ever-harder examples were introduced. During the fourth and fifth years, ornamental drawing was studied: The fourth year covered drawing from sight of "stylized models," whether leaves, fruits, or other decorative elements, and in the fifth year students drew "decorative national motifs," in charcoal, pencil, and stump. Pencil and watercolors were explored in the drawing from sight of models from architectural pictures. "Pieces and organs of machines and tools" were also to be drawn from sight, and modeling exercises (also graduated) evolved in parallel to drawing. In the fifth year, blueprints were used for "wood cutting and joinery" or "everyday iron objects" (decree of October 5, 1893). Elements were used, such as garden fences and simple furniture, that fitted with the students' visual culture, though the drawing from sight of these elements was undertaken with just as much rigor as other drawing. The idea of drawing as a tongue for industry, arts, and crafts was no longer new. But it was recognized that this language needed to be taught as a foreign language, which was why the necessary knowledge was subdivided and compartmentalized in this way.

The human figure and the landscape would disappear in the third year, having fleetly appeared in the second year. They never appeared again in either architectural drawing or mechanical drawing. Joaquim de Vasconcelos, a Portuguese historian and art

critic, for example, marked his position against the introduction of the human figure within industrial drawing. In 1891, regarding an exhibition of industrial schools, he said that “the human figure cannot and must not go into such drawing if not as a simply decorative element, otherwise we will have a hybrid education that will neither be academic nor industrial” (Vasconcelos 1891: 9, 10). Drawing of the human figure was seen as a core area to be developed only within a fine arts education, at the risk of incurring misunderstandings and mistakes with regard to the nature of each type of teaching.

The great goal was to make the student observe: to train the sight and form the hand. Sight was to be governed through methods and processes of representation, and through models that acted like entries in a dictionary of drawing and that were made relevant to reality via their applicability to knowledge of the grammar of shapes. The lessons of drawing resembled lessons about things. Every object, including the body itself, could be represented, planned, fragmented, thought of, and recognized within the tongue of drawing, which could represent reality through effective construction. But drawing was the objective reality, the truth of the object. And, in mechanical drawing, one could penetrate objects’ most intimate truths. Beyond visual language’s formal elements (dots, lines, planes, surfaces, and the intersections between them), the “organs” of each machine were separated, divided, and named. Just as with a body, each and every object could be completely dissected:

Simple machines, levers, scales, pulleys, reels, tows, and cranes. Oblique planes, screws, wedges, etc. – mechanical labor ... machines’ elemental tools and organs ... connecting organs: rivets and spikes, various screws, keys, and pins; sealing organs: tubes and their connectors, valves and taps, cylinders, pistons, etc.; tractioning organs: ropes, cables, chains, hooks, etc. ... various grinders, trunnions, transmission shafts; fixed, articulated, interlocking, and uncoupling, and frictional connections; pillow blocks and various greasing boxes; easels, racks, overhangs, hangers, the articulated stands of Seller, Kuhn, Lorenz, etc.; drums and belts, rollers, various cylindrical and conical gear wheels; endless screws; helicoidal wheels; cranks and eccentrics, tie beams, cross heads, and twins. (decree of October 5, 1893)

Listing each piece does not fall far from futuristic poetry’s celebration of machines. But it was necessary to return to a precise and objective form of knowledge. It was believed that these contemporary machines should be drawn thoroughly, as if they were natural objects.

Drawing at the Turn of the Twentieth Century: Jaime Moniz’s Reform

Until 1895, drawing programs for secondary education were abridged to lists of contents to be administered. In 1836, the decree that reformed the *Instrução Secundária* (Secondary Instruction) had paired drawing with arithmetic, algebra, geometry, and trigonometry (decree of November 17, 1836).

In 1844, the Reform of Public Instruction had proclaimed that primary instruction, although only as far as its second year of learning, should consist of “linear drawing,” while for the girls it specified “the most usual labors for the female gender.” Regarding secondary instruction, it defined “arithmetic and geometry as being applicable to the arts, and first notions of algebra.” At the Liceu de Lisboa (Lisbon Secondary School), “geometry and mechanics applied to the arts and crafts” were introduced (decree of September 28, 1844). In 1860, the Curso Geral dos Liceus (Secondary School General Course) began to include “linear drawing,” with two lessons per week (decree of April 10, 1860).

In 1895, at the instigation of the politician Jaime Moniz, a complete modern matrix was defined for the principles of the teaching of drawing in secondary education. These principles would remain in place until the rise of modern psychology, which in the case of drawing, arts, and crafts dramatically accentuated the attention given to expressivity, interiority, and the student’s “self.” Modern psychology was widely used by educators from the second half of the twentieth century, widening the span of the already echoing governmentality. For Lúcia Penim, who studied the subjects of drawing and Portuguese in relation to their definition of territories of identity, this reform was “the first instance of made-to-measure teaching, to which the new education [*educação nova*] movement gave voice in the twentieth century’s second decade” (Penim 2008: 30).

Moniz claimed that all interests on which depended “the policed man’s graduation” would be evidenced in the structuring of teaching. He intended that “both sides of culture, the humanist and the real, and even the arts and practical applications” would fit within his reform (Moniz 1918: 409). He used examples from Germany – particularly from Wilhelm Rein – to support the logic of his secondary school scheme:

Next to ethical teaching there is aesthetic teaching, just as psychological reason requires. Good and beauty relate at heart so narrowly that the same origin may be assigned to them, although between the two there are very prominent differences that confer more value to the first, which is, by its nature, imperative and categorical. No one is obligated to be an artist: to all flows the duty of doing good. But beside the culture of the good there is the culture of taste ... In short, teaching manual labor must be considered a component of the [teaching] plan, as it fits with the teaching of drawing and modelling within the humanist [side of culture], accompanies the study of natural sciences, and complements the necessary practice of geography, geometry, physics, chemistry, etc. and the corresponding theoretical teaching in the school’s garden and in the school’s laboratory. (Moniz 1918: 411)

The presence of artistic subjects in secondary instruction was thus justified. They were assigned territories that were peripheral to the classroom but of great importance to the production of knowledge in the student, be it “in the school’s garden” or “in the school’s laboratory.”

Once the principles and the lines that wove together secondary instruction had been drafted, the reform next specified the duration of each discipline’s classes: a one-hour lesson, except for drawing, which had one and a half hours for the first two classes and up to two hours for the following classes, although the classes were pushed to the day’s margins. The teaching of drawing would always occur at the end of the afternoon. Tables

were created that set down what the content of drawing classes would be, how its teaching would be distributed between different classes, and which types of drawing would be taught: geometric drawing and drawing from sight.

It remained clear in this reform that the purpose of drawing was not to “educate the eyes and the taste in the appreciation of shapes, colors, and the distribution of light, and enable the hand to exert the corresponding graphic operations.” Its reach was much bigger and without chromatic digressions: “to develop the powers of analysis and synthesis of the spirit” and “rescue geometric studies and other subjects in the secondary frame.” The feeling was also that drawing was a special subject, within secondary schools, that displayed a high degree of “malleability,” which made it the bearer of an absolute “fairness” as it could be adapted to a “student’s intellectual development”; it was seen to be most useful “when the culture of the intellect” proved itself to be “thorny” (decree of September 14, 1895). Drawing represented salvation, through its simultaneously intellectual and pragmatic character.

What was obvious in the body of this legislative text was the “shared pedagogical language,” as Jorge Ramos do Ó (2003: 10) called the way of talking that has become common to a whole set of experts who invaded the pedagogical landscape of the twentieth century and settled there. What was also obvious was the idea, as Nikolas Rose (1990) elaborated from a Foucauldian perspective, that the subject’s governmentality would start to depend on an array of images, produced by psychological, medical, and pedagogical sciences, that shape subjectivities and promote regulation. It was necessary to trace a dividing line between the teaching of drawing for artists, which should refer solely to the domain of fine arts, and another kind of teaching, which should be practiced within the secondary school’s core. The dividing line appeared as a result of the objectification of the essentially intuitive character that the teaching of the subject should acquire in this context, and the methodology quoted below assumed the aforementioned graduation, or progressive character, of the acquisition of knowledges, from the simple to the complex. The reform required that, when orally addressing the class, the teacher would not use a “dogmatic” manner at all. It was the sequence of facts, “similar to premises,” that would make “conclusions intuitive” (decree of September 14, 1895). Another way of saying this is that the obligation of describing the journey between the world of objects and their two-dimensional representations was deposited in the figure of the teacher, making quite clear that the schooling of knowledges was deemed to obey a certain curricular alchemy (Popkewitz 2007).

All the prescriptions aimed at the modeling of the student’s spirit so that the student would be receptive to “the study of pure mathematics.” In addition, the much-desired interdisciplinarity became possible at the level of the observed objects themselves. In graphic works related to the natural sciences, a teacher of that subject would be summoned to explain the notions corresponding to the objects that were being analyzed. And teachers, whether in mathematics or the natural sciences, would request every school year from each student a “graphic work produced in drawing class during the previous year” (decree of September 14, 1895). In this way, drawing meddled in the neighboring classrooms, not because of its “artistic” aspect but because of its didactic or illustrative component.

In the first and second classes of the drawing courses, illustrations or prints could be attached to the walls of the classroom to facilitate exercises in magnification and natural

scale. Drawing was taught in many ways: memory drawing, dictated drawing, object drawing, free drawing, inventive drawing, drawing within a time limit, and drawing exams. The official method of learning magnification and scale involved the *stigmographe* (a French term denoting a kind of three-armed compass). The apparatus had to be prepared for use in the classroom according to a standardized procedure. On the blackboard, the teacher would draw a grid of horizontal and vertical lines 10 centimeters apart. The students were given tailor-made brown boards and neutral-colored paper, with or without a line created by the *stigmographe*. The distances between *stigmomas* (i.e., the distance between the lines' intersections) varied between one and five centimeters.

A rigorous base would be provided to the student, on which the student would start executing the various proposed exercises. Accuracy became the key to a dynamic that was intended to progressively set the student free rather than restrain the student using rules. That would happen when the student had learned to embody the grammar of drawing.

In a process of infinite circularity, drawing allowed for the establishment of the body-instrument, the body-machine, and the body-listener, but also the visible body, through the ability to perform each task:

[The intention is] to make, with clarity and accuracy, an analysis of a part of work that must be executed, thereafter drawing it on the blackboard, giving the students time to exert this part, continuing like so until the exercise's completion. This variant has the advantage of compelling the class to continuous labor, paying close attention to the teacher. When the teacher executes the model, in the presence of the class, he will only trace the lines sufficiently so that all students can see them, and he will demand that they draw them ever so slightly. After the sketch is completed, he will trace the definitive lines intensively. Students will proceed analogously, being allowed to use charcoal for the sketch. ... In the second class, the teacher will introduce, just as we have mentioned before, exercises of magnification, at scales designed by him and at a natural scale. In the last case he will ensure the drawings are not products of cheating, notwithstanding this fraud not having a large probability of happening before the employed method. (decree of September 14, 1895)

The guidelines with which Moniz closed the 1895 decree contained in them the entire simultaneously individualizing and totalizing procedures of pedagogical modernity, allowing for back and forth between the individual and the collective; for the production of images according to students' abilities (as assessed through examination); and for "the perpetual characterization of the individual either in relation to this term, in relation to other individuals, or in relation to a type of itinerary" (Foucault 1995: 161). This also allowed for a longer project of work, also permanent, over oneself. Drawing disciplined, but at the same time it also sublimated the body's strengths and impulses. The student's energy was applied toward this rigorous task of achieving exactitude, interspersed with moments of invention, and this rigor and this exactitude glued themselves to the student's skin and soul. The administration of all became the self-administration of every person. School disciplines, with their alchemies, activated the technologies of self-government.

Notes

- 1 Except where stated otherwise, all translations are the author's.
- 2 In Portuguese, *colégios* (singular, *colégio*) is nowadays a word usually used to differentiate a regular public school from one bearing a certain specificity. This word is also used for a Jesuit educational institution.

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ABSTRACT

At the end of the eighteenth century, two groups in Portugal began to receive an art education: children at risk and the elites. The principles followed for each group were different, as were the objectives pursued. However, it was through the education of the masses that the arts, especially drawing, underwent great development. Drawing was perceived as a language, that of the emerging industry, that would make the student a citizen of the modern world of work and, simultaneously, activate mechanisms of self-government.

KEYWORDS

arts education; Casa Pia de Lisboa; drawing; Portugal; Real Colégio dos Nobres; self-government; technical drawing

