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SEARCHING FOR A NATIONAL MODEL. EARLY PATHS IN ITALIAN INDUSTRIAL AND ARTISTIC-INDUSTRIAL EDUCATION

ALLA RICERCA DI UN MODELLO NAZIONALE: I PRIMI PASSI DELLA POLITICA SCOLASTICA ITALIANA VERSO LE SCUOLE PROFESSIONALI

The paper analyzes in a transnational perspective how industrial and artistic-industrial education was developed by Italian governments and Italian local administrations between 1861 and 1900. Due to liberal economic policy and the high illiteracy rate reached in Southern provinces, industrial and artistic industrial education was not on the Italian political agenda up to 1868. Thereafter, the outcomes sprang out from the Paris Industrial Exposition showed how the establishment of such a school network became pivotal in order to prompt a steady catching-up process. Throughout the following decades, Italian governments reformed the field frequently, looking on the enquiries and the reports teachers and fresh Engineering graduates wrote about European vocational system.

L'articolo analizza secondo una prospettiva transnazionale i primi passi della politica scolastica italiana per lo sviluppo dell'istruzione industriale e artistico-industriale. Scuole industriali, artistico-industriali e di disegno, dopo aver conosciuto nei primi anni del Regno d'Italia uno scarso interesse governativo nei loro confronti, acquisirono una diversa priorità successivamente al 1868, quando, con la riforma dell'istruzione tecnica, il sistema italiano si ritrovò privo di un adeguato sistema di formazione pratica. La sua costituzione, nonché le frequenti modifiche che i cambi i strategia apportarono, risentirono profondamente dell'influenza di analoghe esperienze europee, giunte a Roma tramite il fitto reticolo costituito da contatti, esposizioni, viaggi di studio.

Key words: Vocational education; Industrial education; Italy.

Parole chiave: Istruzione professionale; Istruzione industriale; Italia.

Lessons from the Paris Exposition

Since the second half of XIX century to the Great World War, in Europe the second wave of industrialization carried on with it a new set of technologies. On the side of the human capital, the second Industrial Revolution needed new skills (Galor and Moav 2004, 1004; Goldwin and Katz 2008). At the same time, the middle class push for more of their sons to attend secondary schools as, until those years, they were opened only to a narrow élite (Muller, Ringer and Simon 1987, 3). However, they had not enough money to pay for their sons University attendance. Along with Lyceums, a new kind of school was organized in order to educate the intermediate ranks of workers in factories – the vocational schools.

Despite its relevance in economic history, vocational school history has not been

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studied very much (Soldani 1987; Conti 2000; Morcaldi 2005; Martinelli 2014; d'Amico 2015). For several countries (e.g. Germany, Japan, France and Scandinavian countries) the topic has been widely studied, but it is not the case of countries as England and Italy (CEDEFOP 2004; Heikkinen and Lassnigg 2015; Berner and Gonon 2016; Michelsen and Steenstrom 2018; Bodé and Venes 2004; Bodé and Foltz-Gaveau 2005). Several reasons have prevented scholars to deal with this research in Italy (Zamagni 1996, 623-35). Italian vocational schools were established and managed by councils, private institutions and citizens; only from the last decades of XIX century a few governments tried to rule the schools. Therefore, lack in central control made national-wide data be rare; furthermore, available sources do not collect them in a standardized way. Giving a fully detailed context means collecting and reading all the booklets each vocational school published between XIX and XX century.

In this paper Italian history is framed in the European context; transnational and comparative history about vocational schools are underdeveloped but a glance of them helps to understand Italian governments' decisions better. Almost each West-European state tried to fulfill the new demands and enacted laws and guidelines about vocational schools between XIX and XX century (CEDEFOP 2004; Heikkinen and Lassnig 2015; Berner and Gonon 2016; Michelsen and Stenstrom 2018). The most important were Prussia (and then Germany) and France as both Italian vocational schools legislation and the whole Italian scholastic legislation were influenced by Prussia and France (La Penna 1995; Ragazzini 2011, 186-91).

This paper deals with two kinds of Italian vocational schools, i.e. the industrial and the artistic industrial ones. Therefore, technical education is not considered in this paper. Up to the very first years of the Italian kingdom, technical schools curricula were more theoretical than vocational schools ones and made technical education more similar to a sort of "modern lyceum" (Soldani 1981, 96; Fumi 2013, 174, 180). The difference between technical and vocational education, which did not exist at all in England, was shaped from Prussian and French education system. In the wake of the Italian unification, both countries had established a well-defined technical education, clearly identifiable from vocational schools: in Prussia the six-year post-elementary *Realschulen* were settled from the first years of XIX century and in 1882 the nine-year *Oberrealschulen* were established. They did not allow graduates to attend University; their curricula was focused on science, modern languages and technology. In France the Minister of Education Victor Duruy established a four-year post-elementary technical schools, the so-called *enseignement spécial*: in 1886 the school was reformed and became a six-year course which allowed their graduates to attend University (Muller et al. 1987, 53-84).

European vocational schools system born later and it was marked by the continuous influx of news which reached a great number of countries. Universal Expositions, parliamentary enquires and travel grants given to prominent Engineering graduates and teachers were the most common strategy governments applied in order to study foreign vocational schools.

Its growth was marked and sprang in 1868 by one, pivotal event: the Paris Univer-

sal Industrial Exposition. Before that year, only few people were aware of the effects a widely spread vocational schools system could have displayed in national industrialization and economic growth. Diffidence in second-comers country's economic potential and theories about the alleged impossibilities for them to overcome industrialized countries discouraged political elites in developing the secondary sector. Italian kingdom's first years of life were heavily conditioned by such a policy (Hunecke 1977, 24; Are 1965, 175-205; Bardini 1998, 6-12). A similar process occurred to vocational education, which until 1870 was marked by these featuring elements: dispersion; lack in organization and centralization; an everlasting swinging attitude between the traditional concept of charity education and a more modern, industrial-oriented workers' training (Pepoli 1862). Vocational education itself was not a not-well defined label. What did "vocational education" mean at that time? Did it mean industrial workers' training? Or did it include the shapeless galaxy of charity schools? Nevertheless, it is true that the implementation of a coherent vocational education system was not encouraged by the Italian scant industrial development and the high rates of illiteracy reached in Italian Center-south (De Fort 1996a, 11-37; Vigo 2018, 135-46).

In the meantime, two kinds of vocational education system emerged. They came from the two countries which devoted the main part of their efforts in planning an industrial policy: Prussia and France (CEDEFOP 2004, 25-9). By 1868, the most important system was the Prussian one. It started to be organized from 1830, when private citizens and factories had developed a system of Evening industrial post-elementary workers' schools. There were two kinds of Evening schools: the first one was a three-year school attended by young workmen, the second one was a three-year school aimed at training perspective foremen (CEDEFOP 2004, 86-89; Lundgreen 1976, 29). Among German regions, Prussia was the one where the main part of this kind of school was established, though after German unification such schools were founded also elsewhere, almost of all in Baviera and Sassonia (CEDEFOP 2004, 86-9). However, during the first years of XX century, the main part of German students and schools were still in Prussia: there in 1904 was concentrated the 55% of German vocational pupils (MAIC 1907, 1064-70).

A bunch of Day post-elementary schools was established between 1872 and 1909 for training technicians and middle managers; however, in 1903 only 2,31% of vocational students attended day schools[1]. In order to develop further vocational education, in 1891 a federal act allow German regions to force adolescent workers to attend vocational courses; eventually, through a federal law approved in 1900, Germany forced young workers to attend at least three years of evening post-elementary vocational schools.

German system was featured by the relevance of workers' tuition and by a private initiative ruled by Federal and State legislations (CEDEFOP 2004, 20-3). On the other side, the French system was featured by a growing State involvement and it was focused on the massive implementation of day courses. Suppressing guilds in 1791

[1] My elaboration from data available from MAIC 1907.

through the Chapelier Act urged revolutionary government to establish vocational education in order to give suitable training to artisans and foremen: under Napoleon I, three post-elementary day vocational schools were already established. The most important innovation concerned the *Conservatoire des arts et* métiers, an industrial museum and an evening school for workers and artisans (Day 2001, 9-10). French initiatives were imitated by other European countries as Austria and Italy, where the Industrial Museum was opened in Turin in 1871 (*Annali dell'industria e del commercio* 1871, 80-90; MAIC 1907, 1033-5).

After Bourbon Restoration, vocational tuition was scarcely considered (Bodé and Foltz-Gaveau 2005, 23). Only under Napoleon III the establishment of a network of vocational schools appeared again into the political agenda. Between 1863 and 1867 an enquiry about the development of vocational education was carried out; however, its outcomes were ambiguous as teachers interviewed did not agree with each other regarding how vocational schools should have been reformed (Day 2001, 11). Two different opinions emerged: the first ones suggested establishing daily manual training schools; the second one recommended to replicate Prussian evening workers' schools. Hence, the commission suggested that government subsidize private vocational schools: following the advice, in the same year the Morin government guaranteed to industrial and artistic industrial schools a financial aid which could have covered 2/3 of their whole annual budget (Brucy and Togner 2000, 9; Charmasson et al. 1987, 29-31).

In the meantime, the establishment of the Third Republic in 1879 marked French vocational schools history (Bodé and Foltz-Gaveau 2005, 29-30). Nation-building process involved vocational tuition too, as republican politicians established industrial and artistic-industrial schools for improving workers' skills, shaping their mentality and their political believes (Weber 1976; CEDEFOP 2004, 76-7). Therefore, French government increased their power on vocational schools. Following a second parliamentary enquiry in 1880, the Corbon Act allowed State to establish and to manage industrial day schools: the écoles manuelles des apprentissage, a day post-elementary schools which lasted three or four years. Furthermore, the act tightened government control on private schools: before courses were opened, the Minister of Commerce had to check and approve their school curricula. Notwithstanding state control over vocational education, the role of not-State schools should have not been undervalued: whereas French ministerial schools educated technicians and middle managers, private schools were chosen by factory workers. In 1904, the Minister of Commerce recorded 4223 private schools with 95000 pupils (Bennet 1939, 149-53; Marchand 2001, 157-73).

Politicians hoped the écoles manuelles des apprentissage became one of the elements of a well-structured system of technical education which should have involved pupils from three to eighteen years: for reaching the task, three boarding schools in Armentieres, Veirzon and Voiron were established between 1881 and 1882. However, the purpose failed and eventually French State prompted the establishment of middle non-boarding schools between 1890 and the First World War (Day 2001, 17;

Anderson 1975, 92). A second kind of school was introduced in 1899: the écoles *nationalles professionelles*, a kind of experimental schools which devoted the main part of weekly activities to manual training (Anderson 1975, 93-4).

The intermingling between new workers' schools and growth in secondary industrial revolution sectors – such as the electrical, the industrial artistic and the steel production – was showed by the Paris Industrial Exposition in 1868 (Geppert and Baioni 2004). Previous Exposition showed so clearly and so patently the prominent relevance of England that it seemed obvious that in no way the first industrialized country could have been reached by second-comers. Nevertheless, for the first time in 1868, the Paris World Exhibition made clear that a catching-up process was carried on by a handful bunch of countries: France itself, Belgium and, almost of all, Prussia (Lacaita 1973, 63-5). Industrial development was not already forecast: it have been possible, also for second-comer countries, to gain positions. The event highlighted the links between Prussian steady industrial development and its wide network of vocational schools.

Prussian huge success made two pillars of Italian liberal economic policy fall. Firstly, that England was uncatchable by any second-comer country, whoever it was, whatever economic efforts and policies they would have implemented. Secondly, as a direct consequence of the first axiom, any agricultural country could have set up an industrialization process, if it would have planned a proper economic policy (Pellegrino 2011; Lacaita 1973, 63-5).

Therefore, the Paris Exhibitions strengthened the industrialist view in every part of the European continent, Great Britain included. Prussian and French catching-up potential marked the end of English assumptions about everlasting Great Britain industrial supremacy (Lazonick 1979, 231-262; Hartwell 1981; Musgrave 1967, 70-9). However, while the first industrial revolution had not required medium and high-skilled technicians, so did the second one: if English low-skilled workforce was able to follow first-wave innovations, they were not able to understand and to implement second-wave ones (Galor and Moav 2004, 1001-26). English backwardness in steel and electricity industry revealed patently this new, potentially dangerous situation (Sanderson 1999, 14-5).

In 1868 itself, the Government appointed a commission for studying continental vocational schools and for proposing reforms in workforce training. The commission, chaired by the philanthropist and industrial Bernard Samuelson, led to a voluminous enquiry about European and not-European (namely, U.S.A. and Russian) vocational education. Though its wide circulation and the several translations (in Italian too) it enjoyed across the continent, Samuelson commission's job did not led to any systematic, nation-wide reform (More 1980, 199-206; Lang 1978; Pontifex 1939).

Samuelson second commission, appointed in 1884 by the English Government, was more effective and successful, as its remarks prompted local politicians to take into consideration Evening vocational schools (Charles 1887, IV-V). Municipalities' subsidies to this kind of school were allowed by the *Technical Instruction Act* in 1889. Always in 1889, adult workers were allowed in attending Evening vocational schools,

which were reserved to adolescent pupils until that year[2]. In 1913, a system of Day vocational schools was designed through the establishment of the so-called *Junior Tech School*, aimed at training technicians and drawers (Sanderson 1990, 247-71).

Learning from the success achieved by vocational schools in Paris, Exhibition organizers reserved in the 1873 Wien Exhibition an area dedicated to vocational schools. There, a huge debate was arisen by new educational strategies implemented by Victor della Vos in the Moskow Imperial School (CEDEFOP 2004 143-63; Benenati 1999, 51-6). A former engineer, Victor Della Vos was appointed to reorganize the Moskow Imperial School, an Engineering university similar to the ones set up everywhere in the continent after the école *des ponts et chaussées* Napoleon I inaugurated in Paris (Bennet 1936, 14-22). Della Vos reformed the college dramatically, as it put practical factory work at the basis of the new academic curriculum; from 1868 onwards, students enrolled at della Vos' Imperial School had to work for one year in the industrial workshops the University implemented before attending mathematics and science courses (CEDEFOP 2004, 143-63).

Russian reform did not attract so much interest in University councils, but its stress on real factory work arouse a wide debate among secondary industrial schools. If della Vos' backers pointed out industrial work would have improved vocational students' practical skills, perplexities were arisen by the difficulty in making productivity demands suitable to training plans. Furthermore, quick obsolescence in industrial machinery made della Vos' reform not economically affordable. Anyway, the incoming decade saw manual training schools flourishing throughout Europe: firstly there was the *Scuola industriale* Alessandro Rossi established in Vicenza, in 1875, in London, in 1878 and in Iserlohn, in 1879 (Rossi 1877; Bennet 1936, 14-22).

Italian homework after the Paris Exposition: looking for a suitable vocational model

Which was the Italian role among these continental-widely reforms in vocational education? Not a leading one, certainly. Ministerial archives confirm the little attention the other European countries paid to the newborn kingdom. Among the several enquiries and letters the Italian Ministry of Agriculture, Industry and Commerce (which had taken in charge technical and vocational education since 1860) wrote dealing with foreign industrial schools and educational reforms, only two letters asked more information about the Italian scholastic system: one, received in 1886 and written by the Russian Minister of national infrastructure; and one another, sent in 1887 and written by the French government[3].

Anyway, although the pivotal relevance Paris Exposition played in Italian scholas-

[2] Chapter 76, *An Act to facilitate the Provision of Technical Instruction,* 30 August 1889.

[3] Italian National Archive (hereafter INA), bundle 372, ms, *Lettera del consigliere di stato russo Bacheracht*, bundle 373, ms, *Domande del governo francese* and bundle 402 a, ms, *Lettera del Ministro delle comunicazioni russo, 26 agosto 1886*.

tic debate, before 1868 the topic was not completely undebated among politicians and teachers. In 1865 the professor of Modern History Pasquale Villari was sent in France and Germany by the Ministry of Public Education to study their scholastic systems (Villari 1868). Two years later, the professor of Italian literature Emanuele Celesia traveled around the most advanced west-european countries – namely France, Prussia and Belgium – in order to analyze the organization of the feminine post-elementary education and professional training: his remarks were collected in an essay published by the Minister of Agriculture, Industry and Commerce (Celesia 1869, 82-100).

Such an interest did not correspond to enough efforts in devising and ruling vocational schools. The Casati Act (1859) did not organize them as it assessed three kinds of post-elementary schools: the lyceum, the technical education and the normal school, aimed at training perspective primary schoolteachers[4]. Actually, according to Minister Casati and his assistants, technical schools had to give vocational training to their pupils: hence, if Casati's plans had been fulfilled by his successors, Italian scholastic system would have enjoyed a sort of vocational system. However, from 1862 to 1878 reforms of technical education were so continuous and so dramatic that, at the end of this process, technical education was completely different from the one envisaged in 1859 (Soldani 1981, 78-111). As the relevance of practical workshop was dramatically reduced, the hours devoted to scientific subjects as mathematics, physics and chemistry increased in order to make technical schools and technical institutes similar to Prussian *Realschulen*.

Hence, vocational education should have chosen different paths for developing itself. Indeed, the Casati Act had allowed the establishment of post-elementary schools which could not follow the curricula the act had determined for technical schools and Lyceums[5]. They could have been established by whoever had enough sources for doing it, from private citizens to trade unions or any kind of local administrations (such as local councils or provinces); no obligation concerning the curriculum was set up by the law.

Anyway, during the first decade after *Risorgimento*, the number of industrial and artistic industrial schools was low and it increased very slowly: in 1862, a ministerial report stated, Italian vocational schools were ten; in 1878, a national census enlisted still only 32 vocational schools (Pepoli 1862; Annali dell'industria e del commercio 1878).

Even though such a small increase, state interest in vocational schools was persistent and it born with the Italian kingdom itself. Already in the aftermath of the first National industrial Exposition – the one which took place in Florence in 1861 – some of the wittier visitors such as a young Giuseppe Colombo noticed Italian in-

[4] The first one was divided into the *ginnasio* and the *liceo*: the *ginnasio* lasted five years and was opened to eleven-year-old pupils, the *liceo* lasted three years and was opened to those students who have attended *ginnasio* previously. Only the *liceo* allowed students to attend University. Technical education was divided into the *scuola tecnica* and the *istituto tecnico*: the first one lasted three years and was opened to eleven-year-old pupils; *scuola tecnica* graduates could attend five-year *istituto tecnico.* The *scuole normali* lasted three years and they were open to sixteen-year-old male pupils and fifteen-year-old female ones (Soldani 1981, 96; Ragazzini 2011b, 241-54; de Fort 1996b, 58-68; Scotto di Luzio 2001, 36-75).

[5] R. dl. 13/11/1859, n° 3725, Capo VII, articolo 308.

dustrial backwardness: industrials and workers' scant endowments in human capital did not allow to implement modern technologies. Hence, national production systems remained obsolescent and out-of-date (Colombo 1985, 89-152; Bolchini 1986, 9-10; Misiti 1996, 33-54).

One year later, the London Exposition showed patently to a wider audience Italian flaw in industrial production. Performance was poor in every modern industrial branch – e.g. steel industry, art design and electricity production. Issues emerged were dealt with the appointment of a Real Commission on the London Exposition, which suggested developing workers' and industrials' technological mechanical knowledge in order to prompt innovations (Bolchini 1986, 13, 15, 26, 30).

However, it was the Paris Exposition in 1868 that changed abruptly and dramatically politicians' ideas about vocational education. The Exposition highlighted two issues: the first was the economic convergence of Prussian, French and Belgian industrial system to the English one; the second was the relationship between the industrial development of these countries and the establishment of vocational schools. Italian stagnation contrasted with this situation sharply. With the Paris Exposition, a dramatic shortage in innovative factories endowed with up-to-date machineries and skilled workers was highly noticed not only by a narrow elite of industrials and teachers, as it occurred previously; but it was acknowledged and debated by a wide range of Italian journalists and scholars (Are 1965, 43-75; Soldani and Cappelli 1994, IX-LXII).

Lacking initiatives by local administrations and factories prompted industrialist and politicians to back state-guided, highly centralized policies. Italian scholars like Giuseppe Colombo, industrial entrepreneurs like Alessandro Rossi and politicians like Quintino Sella and Luigi Luzzatti pointed out Prussian industrial success was closely linked to state commitment in devising a protectionist policy (Curti and Grandi 1998, 29-30; Colombo 1985, 261).

In the wake of the Paris Exposition, a growing part of the public opinion asked the end of *laissez-faire* policies and a tighter state engagement in modernizing Italian industries (Lacaita 1973, 63-75; Van Wesemael 2001). As the Expo showed clearly, Italian production was still divided between a highly skilled, artisanal production and a poor-skilled one: scale production did not emerge in Italian pavilions, as MAIC's delegate Giuseppe Colombo acknowledged again (Are 1965, 45-73; Lacaita 1973; Soldani and Cappelli 1994, IX-LXII; Colli 1999, 757-842; Carreras 1999, 181-273).

From 1869 onwards, a debate about vocational education was aroused in Italy. The centralized path already taken into account for setting up Italian administrations was highly debated among politicians, economists and industrials. In 1869 itself Quintino Sella took the initiative founding a vocational state-led school in his town, Biella (an industrial center close to Turin) (Audenino 1995, 235-61). Again in 1869, the topic was arisen in Genoa during the second Chambers of Commerce's congress: Marco Minghetti, the incumbent Ministry of Agriculture, Industry and Commerce, pointed out in his opening address the necessity to stimulate economic growth through increase in industrial and artistic industrial training centers (*Congresso delle Camere di Commercio del Regno* 1870, 6). The problem was dealt with also in the concluding

report of the Education commission by the incumbent deputy from the Chamber of Commerce in Ancona (and future Italian Prime Minister from 1916 to 1917), Paolo Boselli. There, scarcity in workers' schools was noticed and complained extensively. Meanwhile, solution was seen in strengthening centralization: government should have coordinated and co-funded private and local scholastic initiatives. However, in Boselli's plans the state should have exerted a secondary and temporary role: government should have been included only until local administrations and private associations would have been ready for maintaining vocational schools (*Congresso delle Camere di Commercio del Regno* 1870, 175, 199, 203).

Whilst Boselli's ideas about centralization were endorsed among politicians and industrialists, his interest towards practical schools was scarcely approved (*Congresso delle Camere di Commercio del Regno* 1870, 175-9). Only the industrialist Alessandro Rossi tried to implement a school of that kind in Schio, a little town near Vicenza where he established its textile industries: its technical college was inaugurated in 1875 and it remained a elitarian perspective for industrialists' and high managers' offspring (Rossi 1877; Lanaro 1974, 101; Benenati 1999, 51-5).

Thanks to its newly-appointed secretary, Luigi Luzzatti, the Italian Ministry of Agriculture, Industry and Commerce (hereafter MAIC) took the initiative in studying foreign models in vocational education (Petrovich 2003, 233-64). As France and England, the Ministry appointed a few scholars in order to analyze foreign vocational schools. As we can see from MAIC's archive, between 1869 and 1880 the Minister funded several long-term travel journeys in order to make possible for several teachers and young engineers to study industrial schools in Prussia, France and Belgium. Maintaining scholarships required writing periodical reports and a final essay for the Ministry.

The first one was the fresh graduate Carlo Sandri, who in 1879 traveled for a year around Germany and Belgium: his remarks appreciated teaching methods in German schools but expressed some concerns about manual training schools economic affordability[6]. In 1880 Luigi Gabba, the incumbent Biella vocational school headmaster, was enrolled for a one-year travel study in Germany and Belgium in order to continue Sandri's work[7].

Meanwhile, scholars' findings were implemented by MAIC through the establishment of state-managed, industrial day-schools in a bunch of Italian towns. Eight schools were set up between 1869 and 1875: in Biella, Iglesias, Palermo, Prato, Fabriano, Savona, Foggia, Carrara and Colle Val d'Elsa (close to Siena) (Audenino 1995, 235-61; Landi 2001; Soldani 1987, 15-5). All of them were chosen thanks to their bulks of artisanal activities: Biella and Prato hosted a flourishing wool and silk production; mining industry was predominant in the Sardinian town of Iglesias; Carrara was the main center for marble carving. Actually, ministerial plans concerned the modernizations of such industrial centers through highly-skilled technicians. Never-

[6] INA, MAIC papers, bundle 371, ms, *Viaggio d'istruzione dell'ingegner Carlo Sandri*.
[7] Ivi, ms, *Viaggio d'istruzione del professor Luigi Gabba*.

theless, political influence played its relevant role – Biella was not only one of most remarkable textile industries center Italy had; it was also Quintino Sella's political feud (Audenino 1995). In the hopes of MAIC's officials, practical curricula focused on factory work should have trained the highly-skilled workers necessary for encouraging industrial innovations and economic growth (*Annali dell'Agricoltura, dell'Industria e del Commercio* 1870, 80).

State-led day schools were fiercely backed by the most important enquiry about the topic, i.e., the one written in 1870 by the ministerial inspector Dino Carina, who published his records in 1871 (Carina 1871). Dino Carina suggested that day schools had to be established in the most important industrial towns in order to train a new class of skilled foremen, but he rejected the possibility of establishing manual training and Evening schools. The day post-elementary vocational school established in Biella should have been the example to be followed by councils and private initiatives. Indeed vocational courses should have been established thanks to private initiatives as only these ones could have known local economic demands properly (Santagati 2010, 122-4). Schools curricula should have been planned by each school councils and they should have focused on a small number of vocational subjects. Several reasons suggested to Carina his concerns about manual training schools and Evening courses: for him, the first kind of school demanded enormous investments to buy up-to-date machineries, whereas the second one was considered unsuitable to train pupils properly. Eventually, Carina urged governments to reform *convitti*[8]: in his opinion the State should have increased its control power on these institutes in order to modernize them (Carina 1871).

However, two kinds of problems stopped state-led schools project at their very first paces. Firstly, up-to-date industrial machineries turned to be economically unaffordable for their scholastic budgets (Sella 1873, 43-4)[9]; notwithstanding Ministerial official notes, practical curricula did not be put in practice by any school (*Congresso delle camere di commercio del Regno* 1870, 178). Secondly, families and industrials found industrial schools training not useful for their aims; graduates were considered too much overskilled for being hired as workers and foremen, hence the most part of them turned out to be hired in clerical jobs as drawer or teacher. State-led industrial schools met three different fates: Biella and Prato, which could afford the presence of up-to-date machineries thanks to their industrial backers, became two relevant training center for industrial managers and headmasters; a second group – Colle Val d'Elsa, Savona, Foggia, Fabriano, Carrara – faced a long-term economic and enrollment crisis; finally, industrial schools in Iglesias and Palermo were forced to be closed (Audenino 1995*; Annali dell'industria e del commercio* 1880, 2).

Carina's state approach was followed strictly by Italian governments in the aftermath of the Paris Exposition. Neverthess, due to the low rate of people enrolled in

[8] A *convitto* was a hostel that provided children with primary and secondary education in internal schools.

[9] Furthermore, no debate was arisen by publications on the Swedish primary, practical vocational schools, namely the *sloyds schools* (Ahlstrom 1993, 115-140; Stenstrom and Virolainen 2015, 327-47).

day post-elementary education (in 1870 only the 3% of eleven-year-old to eighteen-year-old people were enrolled in lyceum, technical schools, vocational schools and normal schools), politicians decided to look to the Prussian model of Evening schools (Vigo 1971). Carina's model run the risk to fail due to the shortage of people who could have afforded daily education until the age of sixteen and seventeen years old. On the contrary, Evening and Sunday schools had got a big advantage: their students could have worked and studied at the same time. Therefore, the cost-opportunity of Evening and Sunday schools was higher than the cost-opportunity of Day schools.

Following local demands

Already in the very first years after the establishment of the eight state-led schools, the Ministry of Agriculture, Industry and Commerce acknowledged the failure of its initiative. In 1873-4 the Ministerial official Emilio Morpurgo traveled around Germany, France and Belgium in order to collect new data about western-Europe industrial and artistic industrial education. One year later, he published his enquiry (Morpurgo 1875). Re-evaluation of Evening and Sunday schools was the core topic of his records; in his opinion, such kinds of schools could have addressed in training factory workers, apprenticeships and artisans. Therefore, they were a suitable strategy for spreading vocational education among the lowest ranks of Italian industry (Morpurgo 1875, 155-8).

Morpurgo's advice inaugurated a new wave in ministerial policy towards vocational schools. State-led schools highlighted difficulties in recognizing and answering to local industrial demands from a central level, as it was well explained in Morpurgo's enquiry. Decentralization in the establishment and management of vocational education seemed to be the best option for fulfilling local demands (Morpurgo 1875, 166-7).

A reform in vocational education took definitely place three years after Morpurgo's enquiry, in 1878. Meanwhile, another remarkable event occurred in Italian education history, stimulating new attitudes towards industrial and artistic industrial education. In 1878, technical education had faced a new, definitive, reform: technical institutes new curriculum, focused on theoretical subjects as mathematics and physics, was designed for training medium-skilled clerk and technicians. Furthermore, their management, which until that year was delegated to the Ministry of Agriculture, Industry and Commerce, was delegated to the Ministry of Education (Soldani 1981, 96). Hence, in 1878, MAIC managed only vocational schools and the main part of them were still former *convitti* (*Relazione del Ministro di Agricoltura, Industria e Commercio* 1862). Such a shift marked technical education new status and it left a blank zone to be filled – the one about workers' training.

The official letter Minister Benedetti Cairoli sent to Italian prefects in 1879 tried to fill this blank space. The letter urged private initiatives in the field of industrial education and tried to ease them according financial benefits to whom (local administrations, associations, trade unions, private citizens) was willing to set up a vocational school.

Cairoli assured the State guaranteed a financial aid to whom would have sent to the Ministry the plan of the vocational course it planned to set up (*Annali dell'industria e del commercio* 1880, 8-14). The plan had to report the following elements: the schools already established in the town, the admission criteria for perspective students, the subjects the school planned to teach and an assessment about the number of students.

For encouraging private initiatives, two kinds of schools were suggested and a model of their curricula was provided in the official letter: the *scuola di arti e mestieri* (Arts and Craft School) and the *scuola di arte applicata all'industria* (School of Industrial Arts). Both of them lasted three years like Prussian vocational courses, but this was their only similarity with the foreign model. The first one was a three-year course for the workers of big factories who had attended all the five-year primary school. The second one lasted three years and its curriculum was focused on drawing (*Annali dell'industria e del commercio* 1883, 6-10). Subjects suggested for industrial schools were: math, mechanics, physics and geometry. Instead, the curricula suggested for artistic industrial schools was easier than the latter because they were focused on geometrical and mechanical drawing (*Annali dell'industria e del commercio* 1883, 8-9). Generally speaking, in both schools curricula was practical and it was focused on drawings, science and technology.

The path was different from the one Dino Carina pointed out eight years before: Cairoli was influenced by both the French and the Prussian models, as it is well shown by the blueprints the Ministry and his officials prepared and discussed (Day 2001, 12-13; Charmasson et al. 1987, 49). Preference for the Prussian model was evident in the official letter: therein, the Minister stated local administrations and private institutions should have preferred Evening courses more than Day ones. Such a statement was justified by differences in scholastic attendance: day school attendance was limited to pupils whose families did not need to collect offspring's income; on the contrary, Evening and Sunday schools could have been attended also by workers and apprenticeships. Through them, also workers' class could reach a post-elementary, technical qualification suitable for implementing industrial innovations (*Annali dell'industria e del commercio* 1883, 5-6).

If Prussian industrial schools were the model for vocational courses organization, French financial policy inspired Cairoli's one: however, while in 1868 the French Ministry of Agriculture guaranteed up to the 2/3 of the whole annual scholastic budget, financial constraints made Italian proposal less munificent[10]. Actually, Cairoli could guarantee state aid to local administrations and private associations only up to the 2/5 of the whole annual scholastic budget (*Annali dell'industria e del commercio* 1880, 8-14).

However, Prussian and French models were not simply transferred in the Italian panorama, but they were adapted for fitting properly in it. Dividing vocational courses in two streams was an Italian innovation and it was motivated by economic and industrial national outlooks.

Industrial and artistic industrial schools were designed for answering to different

[10] INA, MAIC paper, bundle 371, ms, *Relazione al Signor Ministro*, 1° January 1877.

demands. On one hand, industrial schools aimed at training perspective foremen and technicians for medium and big-size industries. On the other hand, artistic industrial schools trained artisans and workers for small-size factories. Compared to industrial schools, they were easier to be managed and cheaper to be established: these advantages boosted their diffusion. First evidences showed the preference local administrations and private associations accorded to industrial artistic schools: Luigi Miceli, Cairoli's successor as Ministry of Agriculture, Industry and Commerce, noticed in January 1869 that 48 schools were established in three months barely. In 1877, MAIC funded 32 vocational schools; in 1881, their number arouse to 104. Also vocational pupils arose from 3302 to 11702 in barely four years. Among them, there were 43 industrial schools and 61 artistic industrial schools (*Annali dell'industria e del commercio*, 1883, 12-19). Luigi Miceli summed up his report urging local administrations and private citizens to establish this second kind of vocational schools (*Annali dell'industria e del commercio* 1883, 12).

Economic affordance was not the only reason thanks to whom artistic industrial schools spread throughout the country. Artistic industrial schools were conceived as the method for reviving Italian artistic tradition and Italian early-modern artistic factories. Through the implementation of this production system, Cairoli and his officials deemed the "social issues" that blew West European societies could have been rejected: prompting the development of small, familiar-based artistic industrial workshops was seen as a way to encourage the establishment of small industries where masters and workers worked next to each others (Soldani and Cappelli 1994, XVII, XXIII-XXIV; Pellegrino 2012, 59-61; Hunecke 1977, 27).

Italian government showed its preference to this kind of schools in several ways: whilst industrial education was not coordinated by any indipendent central commission until 1907, the supervision of artistic industrial education was guaranteed by a national commission from 1884 (Pesando 2006, 12-17, 34-67, 145-64). The standardization of artistic industrial schools curricula and the diffusion of an "Italian drawing style" was its main task: the review "L'Arte industriale", founded by the well-know architect and art historian Camillo Boito and funded by the Minister itself, should have been encourage the diffusion of a national style among artistic industrial schools (Damigella 1983, 10)[11].

Nevertheless, the enthusiastic growth recorded in the first years after the Cairoli's official letter soon left place to a persistent stagnation. As in 1893 the incumbent Minister of Agriculture, Industry and Commerce Pietro Lacava underlined in a ministerial enquiry, the diffusion of vocational courses was not dictated by an organic state policy, but by local conveniences (Selvafolta 1991, 85-118)[12]. Strong decentralization was showing its flaws as it stopped any attempts in devising a coherent, long-time educational strategy.

[11] INA, MAIC bundle, *Direzione industria e commercio* [1877], I vers., b. 371, *Relazione sull'istruzione superiore e sulle scuole d'arti e mestieri,* 2

[12] Parliamentary Acts, Leg. XVIII, Chamber of Deputies, *Documenti. Scuole professionali, d'arti e mestieri e scuole d'arte applicata all'industria,* 23rd november 1893.

Local administrations, the state as well as social and economic actors had exhibited their scant interest in prompting industrial and artistic industrial education. Per-capita aggregated (i.e., state and not-state financial aids) vocational pupils' funding was constantly lower than the one attained by pupils attending lyceums and technical institutes. In 1885 and in 1891, lyceum pupils obtained a per-capita funding of 250 and 181 lire; pupils enrolled in technical schools and technical institutes, had a per-capita funding of 310 and 274 lire; on the other hand, in these two benchmark years pupils enrolled in vocational courses enjoyed only a per-capita funding of 90 and 61 lire[13].

Low interest in vocational training was evident also in former pupils' difficulty in obtaining a proper job. Industrials and little factory owners (who often did not have any scholastic degree) found difficult to understand why they should have preferred high-skilled workers to apprentices. The latter were more subdued than the first ones; furthermore, their training was managed and planned only by foremen and factory owners. Negative outlook in the job market reduced enrollment in vocational schools, holding back innovations and increase in human capital, as it was underlined by vocational schools headmasters' reports (Buccolini 1890, 11; Chiaramonte 1990, 419).

Such circumstances made national government turn back on its paces and advocate again the necessity of a revitalized centralization. This time, French Third Republic and the Corbon Law were the model Italian politicians looked to. Notwithstanding the failure reached by the Corbon Law, the centralization prompted by the French law inspired the three bills three Ministries of Agriculture, Industry and Commerce proposed unsuccessfully in 1886, 1888 and 1892. Increasing central supervision was the main aim the bills pursued, even though their reforming aims weakened from one bill to another.

In 1886 the incumbent Minister of Agriculture, Industry and Commerce Benedetto Grimaldi proposed the first and the most innovative one. Grimaldi's bill tried to enforce state role in vocational schools management: state annual contribution was elevated from 2/5 to 2/3 of the whole scholastic annual outlay; however, its increasing financial commitment was counterbalanced with the enforcement of its supervision power as vocational schools should have implement at least one practical workshop and should have accepted annual ministerial inspections[14]. Outcomes of the international debate were extensively reported by Grimaldi: Samuelson's second commission enquiry was translated and attached to the bill in order to make clear how European and not-European governments had already chosen to strengthen centralization in vocational education[15].

Notwithstanding these concerns, Grimaldi's bill was not approved by the Parliament. The death of Grimaldi's Prime Minister, Agostino Depretis, ended up in a

[13] My elaboration from *Rendiconti consuntivi della Camera dei deputati* 1885 and 1891, *Annuario statistico italiano* 1887, 215-18; *Annali dell'industria e del commercio* 1883.

[14] A.P. Camera. Leg. XVI, sessione 1886 – 87, 29/11/1886, d. dl. R. n. 118 bis (Sull'insegnamento speciale per l'incremento delle industrie e dei traffici).

[15] See *Appendix*, A.P. Camera. Leg. XVI, sessione 1886 – 87, 29/11/1886, d. dl. R. n. 118 bis (Sull'insegnamento speciale per l'incremento delle industrie e dei traffici).

massive governmental change which made Grimaldi be removed and the bill be abandoned. No luck was met also by the two other bills Luigi Miceli and Pietro Lacava – namely, Grimaldi's successors –, proposed to the Parliament in the attempt to enforce state control over the chaotic galaxy of industrial and artistic industrial schools[16].

Centralization in vocational education became pursuable only in the first years of the new century. Improvement in economic and industrial performance and new attitudes towards factory workers prompted again state initiatives: a proper centralization of industrial and artistic industrial education was reached in 1908, when the bill proposed by the incumbent Ministry of Agriculture, Industry and Commerce Francesco Cocco-Ortu was approved by the Parliament (Ivani 2012, 51-56)[17]. Thanks to the new economic and social situation, reforming vocational education was made feasible again and it was pursued with the same strategy previous government adopted: i.e., collecting records from advanced European and not-European countries (France and Germany first of all), analyzing them and trying to adapt their innovations to the Italian context.

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[16] A.P. camera Leg. XVI, sess. 4 1889-90, 2/12/1889, d. dl. R. n. 78, (Sulle scuole di arti e mestieri e sulle scuole speciali per l'incremento delle industrie e dei traffici) and A. p. camera, Leg. XVIII, sessione I, 1892-1893, 23/11/1893 d. dl. R. n., n. 243 (scuole professionali di arti e mestieri e di arte applicata all'industria).

[17] R.D. 187 22/03 (Provvedimenti per l'insegnamento industriale e commerciale), reported in "Gazzetta Ufficiale del Regno d'Italia" 1908, 128: 2941-51.

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