



Historical Trends in Professional School Access: The Case of Barcelona's Maritime Students since 1769

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ABSTRACT

The aim of this study is to analyze how the student's age has changed through history in the Faculty of Nautical Studies of Barcelona (FNB) - from the moment it was created as a Nautical School in 1769 until today when it forms part of the Universitat Politècnica de Catalunya - BarcelonaTech. The research also looks into what admissions criteria were established throughout the years and which factors may have been involved in changing them, thus representing one possible way to understand the changing profile of access to nautical education. An analysis on the evolution of the age of entry in nautical studies is developed as a case study of the Faculty of Nautical Studies of Barcelona. The study presents results that could be applied to other professional programs. After having located and analyzed all the most important primary resources relating to age and other admission criteria for nautical studies, and after having statistically treated the gathered data, the study concludes..

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1. Introduction.

This research focuses on how the age of students has evolved throughout the history of the Faculty of Nautical Studies of Barcelona (FNB) since it was first created as a Nautical School in 1769 and became part of the Universitat Politècnica de Catalunya (UPC)-BarcelonaTech. The study also explores the factors that have contributed to changing student admissions ages during the course of this development and illustrates how the profiles of access to the faculty have changed through time.

2. Methodology.

The methodology used for this study is a result of the work done with a historical approach using as main source of information documents that were produced by the Royal Board of Commerce of Barcelona (the Reial Junta de Comerç), which are

found in different libraries/archives: the Biblioteca de Catalunya; the General Archive of the Navy Álvaro de Bazán in Viso del Marqués; the library of the Barcelona Maritime Museum; the Library of the Provincial Council of Barcelona; and the FNB. The study further incorporates an analysis of these documents alongside the legislation in force during each period.

3. Development.

3.1. Foundational Period (1769-1850).

The first phase spans from 1769 when the school was established as "Barcelona School of Nautical Studies" (Escola de Nàutica de Barcelona), through the process of obtaining official academic status in 1850; this was on September 20th when the school received official designation as a "Comprehensive School of Nautical Studies" (Escola Completa de Nàutica); and then five days after receiving its comprehensive designation, the school received formal incorporation into the "Institute of Secondary Education, attached to the Literary University of Barcelona", now known as the University of Barcelona.

The "School of Nautical Studies in Barcelona" (the Barcelona School of Nautical Studies) was created in 1769 by Sinibaldo Mas with financing and assistance from the Royal Board of

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Commerce. The school has evolved into what we know today as the "University College of Naval Engineers" or (Universitat Politècnica de Catalunya's), Barcelona School of Nautical Studies (FNB)..

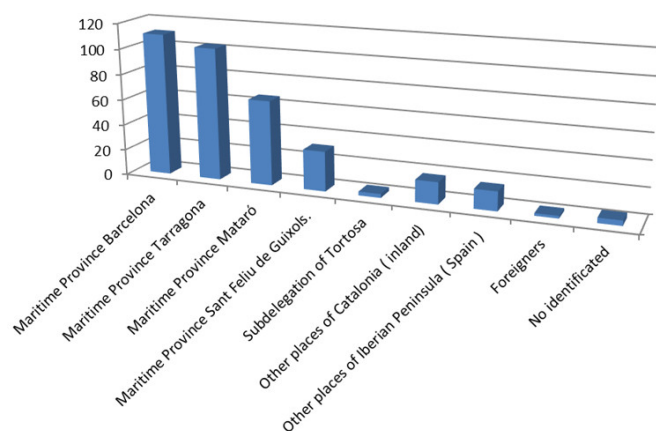
On August 21, 1769[1], the Book of Agreements recorded that the Board of Commerce had accepted the petition (*memorial*) of Joseph Andreu, from the Province of Mataró, dated the 19th of the same month. This document included a certification from the Marine Minister stating that he had found him to have *suficiencia en la Letra e inteligencia de las quatro reglas de la Aritmetica*² In his petition, this student requested admission to the school.

Twenty places were offered annually, which were distributed among the Maritime Provinces according to the provisions of the ninth rule of the Book Agreements. The Province of Barcelona was allocated four places, the Province of Mataró six, the Province of Sant Feliu de Guíxols four, the Province of Tarragona four, and the Sub-delegation of Tortosa two places.

Individuals of the Naval Register (*Matrícula de Mar*) who wished to enter the School had to apply to the Marine Minister³ of the Department of the Maritime Province, where the candidates were examined. If the number of applicants exceeded the places assigned to that Register, a draw was held in the presence of the interested parties. The specific procedure for these draws remains unknown. This process was regulated by the second rule.

The candidates selected by the Marine Ministers presented themselves in Barcelona before the Board of Commerce with their petition, requesting admission as students. The students included a certificate accrediting their selection by the Marine Minister of their respective Province. The Board then re-examined the candidates; they were admitted only if they passed this examination, as strictly stipulated by the third rule of the Book Agreements.

Figure 1: Pupils' origin from the list dated January 5, 1792[2].



Source: (Ríos, 2009, p. 671).

²Proficiency in Literacy and understanding of the four rules of Arithmetic.

³Maritime authority of a maritime province department in the 18th century.

3.1.1. Student Profiles: Age and Geographic Origin.

The data regarding student ages has been extracted from the following records: August 21, 1787[3]; January 5, 1792[4]; and the annual lists for 1795[5], 1797[6], and the period 1799–1804[7]. The primary source for these ages is the doctoral thesis of J.J. Ríos Delgado[8].

The typical age for student admission to the center was between twelve and sixteen years old, although outliers exist, including one case of a seven-year-old and another of a twenty-seven-year-old. Consequently, classrooms could be composed of both very young pupils and adults. The only entry restriction was based on prior knowledge and proficiency; thus, it is possible that *child prodigies* were present—a concept that was not commonly used at the time.

In comparison, the age of entry at the College of San Telmo in Malaga [9]—an institution where nautical studies were conducted with a stronger emphasis on Christian morality—was between eight and fourteen years old.

Note on student status, concerning two differentiated categories: The *colegiales* were usually orphans or children from humble seafaring families who were exempt from tuition and boarding fees. In contrast, the *porcionistas* were responsible for covering their own costs.

As for geographic origin, the records from 1795 to 1804 reveal that the student body was not limited to Catalonia. There were students from other territories of the Spanish Crown and even from abroad. Although the initial intention had been to limit candidates to those originating from Catalan provinces, the scope was eventually broadened to encompass the entire Crown.

The analysis of the entry age (ranging from twelve to forty years old), which presents as a bimodal distribution—categorized here as the *young core* and the *adult core*—demonstrates a notable age disparity and a hybrid access profile:

- **Young Core (Academic Model):** The vast majority of the student body (48% between the ages of 15 and 18) was close to the typical entry age of other educational institutions of the time. This proportion indicates that the training was primarily aimed at young individuals without extensive prior experience.
- **The Adult Core (Professional Model)** is the most clear indicator of this; the fact that students were accepted after their 24th birthday – with some continuing on into their 40s – indicates that the school was functioning to support the continued education needs of established and experienced sailors who required formal documentation. The ability of the School to admit adult students demonstrates an additional distinct function — the School served as both a professional entrance point for adults and as an academic/technical training institution for youth.

The school has shown its duality by having the function of an academic-technical school for young people and to be a professional training school for older students. In this sense, it is different from schools at the time like San Telmo College in

Table 1: Pupils’ age of ingress during the period 1799-1804[10].

Pupils’ age	1799	1800	1801	1802	1803	1804	1799-1804
11 years					1	1	2
12 years		3	2	3	10	6	24
13 years		3	1	4	6	2	16
14 years	2	2	1	4	7	10	26
15 years	7	8	5	4	9	4	37
16 years	3	5	5	6	12	10	41
17 years	10	6	1	3	4	5	29
18 years	8	7	8	3	5	4	35
19 years	4	6	1	3	8	4	26
20 years	3	3	1	1	4	2	14
21 years			3	2	1	3	9
22 years			1	9		1	11
23 years			2	1	7	1	11
24 years				1	1		2
25 years				2	2		4
26 years					1		1
28 years				1			1
29 years				2	1		3
30 years					1		1
36 years				1	1		2
40 years		1					1

Source: (Ríos, 2009, p. 697).

Malaga. The college’s admissions process allowed for greater flexibility with regard to the applicant’s age, based on their knowledge or ability rather than age.

Table 2: Resume of pupils’ age of ingress during the period 1799-1804[11].

Pupils’ age	1799	1800	1801	1802	1803	1804	De 1799 a 1804
Under 15 years	2	8	4	11	24	19	68 (22,9%)
From 15 to 18 years	28	26	19	16	30	23	142 (48%)
From 19 to 24 years	7	9	8	17	21	11	73(24,7%)
More than 24 years		1		6	6		13 4,4%)

Source: (Ríos, 2009, p. 698).

The records from the Barcelona School of Nautical Studies for the period between 1824 and 1847[11] confirms the continuity of this diversified access profile, similar to that of the foundational era. These registries show the presence of students under fourteen, confirming the persistence of entry at very early ages. Student origins were by no means local; the archives show a steady influx of applicants from across the Spanish Empire, including those born in the Americas. Such geographic

reach confirms that the School was much more than a regional academy.

3.1.2. Comparative Analysis with Other Schools of the Royal Board of Commerce.

We compare the entry age at the FNB with that of other institutions under the Royal Board of Commerce (*Reial Junta de Comerç*) that represent clear examples of schools offering what are today considered university-level studies: the School of Experimental Physics, the School of Mathematics, and the School of Drawing and Noble Arts.

In the case of the School of Experimental Physics [12], the analysis of surviving documentation reveals four students with recorded ages in 1824: two aged thirteen old and two aged sixteen old. It should be noted that, in this school as in the others analyzed, most of the records consulted do not specify the age of the students, which partially limits the capacity for an exhaustive quantitative analysis.

Regarding the School of Mathematics[13], for the same year (1824), two students with documented ages were located, both fourteen years old. This confirms the existence of access at ages clearly lower than those currently standard in higher education.

Finally, in the School of Drawing and Noble Arts[14], the lists for the year 1850 show a wider and more heterogeneous age distribution. In this case, three students aged twelve, one aged thirteen, six aged fourteen, and others aged sixteen, nineteen, twenty, and twenty-two were identified, evidencing notable flexibility in admission criteria.

We analyzed the regulations of the School of Naval Architecture of Barcelona, which operated under the Royal Board of Trade (*Reial Junta de Comerç*). This institution is considered the first civil engineering school in Spain and has been cited by various researchers, including Ruiz i Pablo (1919)[15].

Evolution of Admission Requirements:

- Study Plan of June 30, 1834[16]: It was stipulated that applicants had to be at least fourteen years old and demonstrate sufficient mastery of the basic competencies of the period, i.e. the ability to read and write correctly and knowledge of the fundamental principles of arithmetic.
- Study Plan of January 19, 1836[17]: Article No. 3 of this plan introduced a significant exception. Although other sections maintained fourteen years as the general rule, this article specified that an applicant could be under twelve years of age if accompanied by their father or guardian at the time of application.

In cases of young students, the professor was required to record precise details regarding their place of residence (street and number) to ensure proper action could be taken in the event of any unforeseen circumstances or incidents.

Based upon this information, there is substantial evidence to support the conclusion that the Barcelona School of Nautical Studies was comparable to all other schools of commerce regulated by the Royal Board of Commerce in respect of their relatively young entry age and flexibility compared to what would

occur in the present day. The evidence therefore supports the assertion that in contrast to today, technically and vocationally educated students in the eighteenth and nineteenth century educational systems were permitted to enter higher or equivalent levels of education at much younger ages than are the students in modern educational systems.

The findings further provide strong supporting evidence for the proposition that the educational pathway structures in both pre-industrial and early industrial societies allowed for transitions to high-level studies as well as professional specialization through apprenticeships at relatively younger ages than those which exist in contemporary societies.

3.2. Pre-University Period (1851-1975).

Institutional names and governing structures fluctuated during this period hence a detailed account of these transformations has been omitted, as the primary objective of this analysis is the determination and study of the students’ entry age.

According to Article 45 of “*Proyecto de Reglamento de las Escuelas Especiales de Náutica, de Maquinistas, de Construcción Arquitectura Navales*”⁴ of Barcelona, dated August 31, 1880[18], the minimum age for admission was set at fourteen years: “*Para ingresar en las Escuelas de Náutica ó Construcción Naval, deben los aspirantes acreditar haber cumplido catorce años y ser aprobados en un exámen previo de Geografía y Aritmética elementales, sistema decimal, lectura correcta y escritura al dictado. Estarán exentos de este exámen los que hubieran verificado en otra Escuela Especial o tuvieren ya aprobados académicamente los estudios que se exige para el Bachillerato en Artes*”⁵ Despite this formal requirement, the minimum age rule was not strictly observed in practice, as evidenced by the student registries from 1901 to 1913.

The student list from the *Historial de la Escuela Especial y Provincial de Náutica de Barcelona* of 1901[19], compiled by the director and distinguished professor José Ricart y Giralt, provides comprehensive data regarding the total number of students, their names, origins, and the specific studies they were pursuing. In that year, the student body totaled one hundred and one individuals.

Figure 2: Students age records at 1901.

Estos 101 alumnos por la edad se descomponen en 1 de 12 años; 2 de 13; 7 de 14; 16 de 15; 14 de 16; 19 de 17; 12 de 18; 13 de 19; 8 de 20; 3 de 21; 1 de 22; 2 de 23; 1 de 24; 1 de 25 y 1 de 27.

Source: (Historial de la Escuela Especial y Provincial de Náutica de Barcelona of 1901.

⁴The Draft Regulation for the Special Schools of Navigation, Marine Engineers, and Naval Construction and Architecture.

⁵To enter the Schools of Nautical Studies or Shipbuilding, applicants must certify that they have reached fourteen years of age and pass a preliminary examination in elementary Geography and Arithmetic, the decimal system, correct reading, and writing from dictation. Those who have already been examined at another Special School or have academically passed the studies required for the Baccalaureate in Arts shall be exempt from this examination.

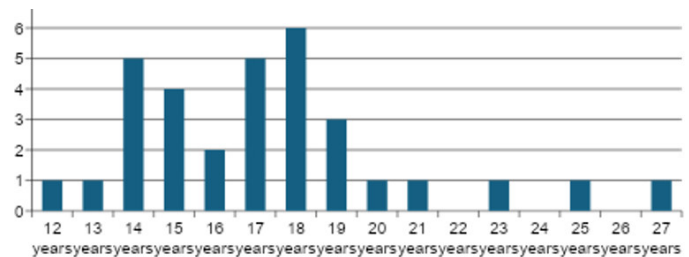
According to Image 2, while it is not possible to determine the exact number of new enrollments for that year, the figure can be inferred from the list of students in their first year of study, extracted from the aforementioned source. In total, there were thirty-two first-year students, with the following age distribution:

- 1 student aged twelve.
- 1 student aged thirteen.
- 5 students aged fourteen.
- 4 students aged fifteen.
- 2 students aged sixteen.
- 5 students aged seventeen.
- 6 students aged eighteen.
- 3 students aged nineteen.
- 1 student aged twenty.
- 1 student aged twenty-one.
- 1 student aged twenty-three.
- 1 student aged twenty-five.
- 1 student aged twenty-seven.

Once again, the records show students originating from Catalonia, the rest of Peninsular Spain, the Americas, and the Philippines.

The data from the 1901 student list enables a clear interpretation on the continuity of the dual access profile previously observed during the foundational period (1769–1806).

Figure 3: Pupils’ age of ingress in 1901.



Source: Authors.

3.2.1. Analysis of the 1901 Entry Age.

The analysis of the entry age for the first-year class of 1901, despite being a limited statistical sample, confirms of the hybrid access model that characterized the institution since its inception.

1. Consolidation of the *Young Core*.

The majority of the thirty-two enrolled students were concentrated within the typical age for secondary or technical education:

- **Main Age Group:** A total of 18 students, 56% of the total, were between 17 and 19 years old, with the mode being 18 years of age, 6 students. This concentration demonstrates that the School was already firmly established as an institution accessed shortly after completing initial cycles of formal education.
- **Early Access:** The trend of admission at younger ages continued, with 7 students between the ages of 12 and 14. Despite being in the minority at 22% there is a clear indication that the requirements for age to be eligible to attend were still very much open to interpretation and based on past experience rather than an individual's standardized chronological age.

Therefore these results also demonstrate clearly the existence of students who are less than 14 years old in the records of the Escuela Especial y Provincial de Náutica de Barcelona; thus indicating that there was no compliance with or, alternatively, a willful disregard of the provisions set forth by the Royal Decree of May 10th, 1880.

3.2.2. Cases of Students Under 14 Years Old (1903–1913).

The following documented cases provide specific evidence of students admitted below the legal age requirement:

- November 10, 1903[20]: The case of Coll Miranvell, José, Student No. 12, is recorded at thirteen years old.
- September 30, 1904[21]: Students Bacle Baxeras, Santiago, No. 1 on the list, and Sust Vives, Jaime are recorded as being thirteen years old. It should be noted that in these first three cases, the students were nearly fourteen.
- September 30, 1905[21]: The student Mendez de Higo, Cerdà Manuel, No. 48, was only twelve years old.
- November 16, 1907[22]: This registry is particularly significant, showing multiple underage students:
 - Miñane Perez, José Antonio, No. 2, aged twelve.
 - Briques Maní, Agustí, No. 6, and Maristany Casajuana, Pedro, No. 11, both aged twelve.
 - Molins Costa, Sebastian, No. 5, aged thirteen.
- December 24, 1908[23]: Documentation shows the case of de Sierra García, Carlos, No. 11, aged thirteen.
- October 1, 1909[24]: The most extreme case (outlier) is recorded: Blasco Cirera, José, No. 5, aged only eleven. Additionally, students Moré Verdaguer, José. No. 3, and Bertran Serna, Francisco, No. 4, were thirteen years old.
- October 1, 1913[25]: Five cases are recorded, students Nos. 3, 4, 6, 7, and 8, involving the following students aged thirteen: Emilio Bayer Brillas, Julio Bayer y Brilles, José Franco y Moyua, Enrique Padró y Giralt, and José Torras y Villanueva.

This detailed evidence demonstrates that, despite formal regulations, flexibility regarding the admission of very young students was maintained well into the early 20th century.

2. The Persistence of the Adult Professional Profile.

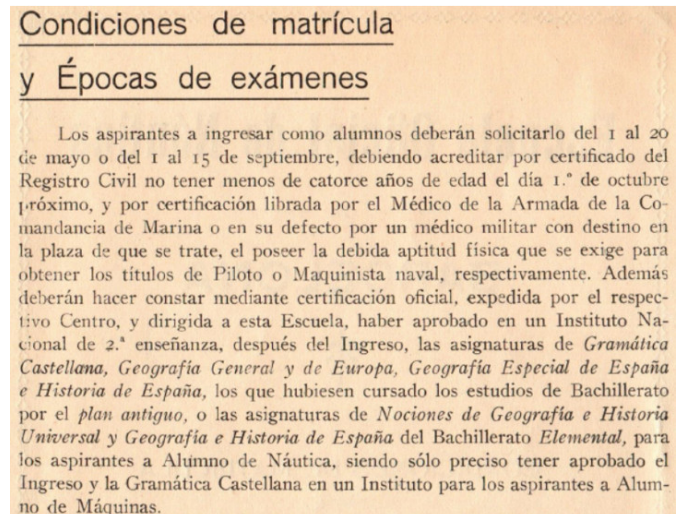
Adult students made up four out of thirty-two students (or twelve point five percent), which included three twenty-three year olds, one twenty-five year old, and one twenty-seven year old. This is significantly older than when most adults began to have access to the educational facilities of an academic center during the early part of the twentieth century.

A turning point in the access profile occurred with the publication of the enrollment conditions of the Official Nautical School on May 14, 1926[26].

This regulation establishes a strict minimum entry age of fourteen years.

The change has a high degree of significance because this change does away with the ability for students younger than 14 years old to have the opportunity to enter based on their academic abilities as was seen during the earlier periods (such as when 12 year olds and 13 year olds were allowed into school). It also continues the direction of a standardized entry point at the end of compulsory schooling. As a result of these changes, the center increasingly deviates from its earlier approach to vocational education for young people and progresses closer to an established model of secondary education after compulsory education that was then being used by other schools.

Figure 4: Enrollments conditions and examinations periods, the publication of the enrollment conditions of the Official Nautical School on May 14, 1926.



Source: Authors.

Figure 4 shows the enrollments conditions and examinations periods, the publication of the enrollment conditions of the Official Nautical School on 1926.⁶

⁶ Applicants seeking admission as students must apply between 1 and 20 May or between 1 and 15 September, providing a certificate from the Civil

To contextualize admission age regulation to the Nautical School, we analyze the case of other technical centers dependent on the Barcelona Provincial Council in 1916[27]. The Industrial School (now Industrial Engineering) and the Higher School of Agriculture set the minimum age for entry at fifteen and sixteen years respectively.

This shows that the Special and Provincial School of Nautical Studies in Barcelona, along with the aforementioned technical institutions, set entry ages below eighteen years. This is significant, as it indicates that age restrictions were a widespread feature in higher technical education centers of the time, differentiating themselves from the open access model of traditional university faculties, although Nautical Studies maintained a more flexible (or less observed) age limit until the regulation of 1926.

4. University Period: Standardization (1975–Present).

The Royal Decree 1439/1975 of June 26, 1975[28], marked the formal beginning of higher-level qualification for studies taught at the Schools of Nautical Studies. This measure was decisive in changing the student profile.

This affiliation with the higher education system culminated in the approval of a new curriculum on October 18, 1977[29]. This plan established a five-year academic structure aligned with university degrees of the time, offering Associate Degrees (*Diplomat*, initial three years) and Bachelor's/Master's Degrees (*Llicenciat*, five full years), in addition to a Doctorate program.

The integration process into the higher education system started in 1975 and reached its completion in 1990[30], when the Barcelona School of Nautical Studies (FNB) became a teaching center affiliated with the Universitat Politècnica de Catalunya (UPC). Therefore, there was a transition period during which the Schools of Nautical Studies whose studies were recognized as university-level but without being affiliated with any specific university.

Consequences for Admission: Standardization

This formal evolution led to the full standardization of the entry age at the Barcelona School of Nautical Studies (FNB) for the following reasons:

1. Academic Requirements: Admission require the High School diploma and, subsequently, the passing of the University Entrance Exams, definitively eliminating any access based exclusively on basic technical knowledge.

Registry confirming that they will be at least fourteen years of age by 1 October of that year. They must also submit a certificate issued by the Naval Medical Officer of the Naval Command, or, failing that, by a military doctor stationed at the relevant location, attesting that they possess the physical fitness required to obtain the qualifications of Pilot or Marine Engineer, respectively. Furthermore, applicants must provide an official certificate, issued by the relevant institution and addressed to this School, confirming that they have passed, at a National Institute of Secondary Education and after the entrance examination, the following subjects: Spanish Grammar; General and European Geography; Special Geography of Spain; and History of Spain, for those who completed the old Baccalaureate curriculum; or Introductory Geography and Universal History, and Geography and History of Spain from the Elementary Baccalaureate. For applicants to Nautical Student, these requirements apply in full, whereas for applicants to the Engineering programme it is sufficient to have passed the entrance examination and Spanish Grammar.

2. Age Homogenization: The entry system via University Entrance Exams led to a homogenized student body, setting the entry age for new students around 18 or 19 years old (the age for university entry), with additional pathways for students over 25 years old.

Starting from the 2010-2011 academic year, the implementation of the European Higher Education Area (EHEA), known as the Bologna Plan, took place[31].

- New Degree Model: The FNB adapted its qualifications to the new Degrees four years and University Master's Degrees.
- Uniform Access: With Bologna, access is governed exclusively by the criteria of admission cut-off grades and academic demand within the university pre-enrollment system.

The application of the Bologna Plan consolidated the homogeneity of the student body: the entry age at the FNB became standardized and now corresponds to the standard age of incoming university students in Catalonia, generally 18 years old. However, access is allowed for students holding a higher vocational qualification from nautical-fishing training schools, who are granted credit recognition for several subjects.

Conclusions.

The evolution of the entry age at the Barcelona School of Nautical Studies (FNB) reflects a substantial change in the access profile for technical degrees with deep professional roots. The system has transitioned from a training model initially linked to labor practice and the guild model, where students of diverse ages and experiences coexisted, showing a bimodal distribution (18th-19th centuries), toward a fully structured academic model. This process has culminated in a completely homogeneous access age, typical of 21st-century post-secondary education.

1. Milestones of the Change in Standardization

The chronological analysis demonstrates that this shift occurred through several crucial regulatory phases:

- a. Initial Regulation, 1926, whereby the first stage was the elimination of absolute flexibility by establishing a minimum entry age of fourteen, reducing cases of access for minors under that age.
- b. Integration into Higher Education, 1975–1990, given that the affiliation of the School with higher education, 1975, and its definitive integration into the Universitat Politècnica de Catalunya (UPC) in 1990 (Decree 13/1990) forced the reduction of the adult student segment by linking admission to the University Entrance Exams.
- c. Final Homogenization (Bologna Process), finally the implementation of the EHEA starting from the 2010–2011 academic year consolidated the complete standardization of the entry age. By subjecting the FNB to *cut-off grade*

criteria, the modal age of new students was firmly established around 18 years old.

2. Historical Relevance of the Change

The main causes of this evolution are complex:

Increase in Academic Demands: The higher education qualification and subsequent curricula (1977, Bologna) raised theoretical requirements, necessitating more extensive prior training and shifting the focus away from empirical knowledge.

Early Maturity in the 18th and 19th Centuries: During this period, social and functional maturity was achieved at significantly earlier ages than today[32]. This reality does not necessarily imply a biological change in cognitive development, but rather the existence of a socioeconomic environment that demanded the premature assumption of adult roles: early entry into apprenticeships and services, paid labor, and family responsibilities accelerated the learning of practical and decision-making skills.

Furthermore, the category of *adolescence* as a distinct stage was conceptualized historically quite late (late 19th and early 20th centuries); thus, transitions from child to adult were experienced and recorded using different criteria than contemporary ones. These dynamics suggest that the perception and reality of early maturity in the 18th–19th centuries are explained by institutional and economic factors rather than an essential difference in biological maturation.

Physical maturation may be completed, but psychosocial maturation (relationships, autonomy, responsibility, stability) lasts longer, as illustrated by Hochberg and Konner[33]. Not all young people or societies follow the exact same pattern: late maturation is more visible in industrialized or advanced economies, characterized by prolonged schooling, a complex labor market, and high living standards. Reaching psychosocial or occupational maturity later does not, therefore, imply that current generations are "less prepared."

3. Functional Maturity and Professional Internships

One of the main ways in which this faculty ensures that its graduates are functionally and professionally mature is through the mandatory inclusion of professional at-sea internship periods.

The use of internships was incorporated into the curriculum in its original form and it continues to be required today:

Continuity with History: The provision for internships remains part of both the founding curriculum for the BSc degree and subsequent regulatory requirements (following the implementation of the Bologna Process).

Educational Function: Internships serve to link together the theoretical aspects of academic education and the practical realities associated with working on merchant ships.

Beyond being a requirement for graduation, they ensure that the student acquires the experience, responsibility, and decision-making criteria necessary before assuming a professional role on board. Therefore, while the entry age was standardized and moved toward *academic maturity*, 18–19 years old, the mandatory nature of professional internships has ensured the continuity of functional maturity as an inherent requirement of the

degree.

In synthesis, the study of the FNB perfectly illustrates the transition from a flexible vocational training model to a rigid and standardized higher education model, a phenomenon shared by many technical degrees in Spain during the 20th century.

Rigid system

This more rigid university system regarding student access implies that certain candidates with aptitudes for professional practice cannot access the degree. While individuals without prior vocational orientation may also enter, as detailed below:

- a. **Barriers for Professionals:** A person with practical experience and knowledge from another qualification must complete many subjects that are not recognized (credited). These subjects are supposedly required to provide consistency to the contents of the subjects that are recognized. Furthermore, they must complete twelve months as a deck or engine cadet, which entails a significant economic disadvantage for an adult who must leave their regular job⁷.
- b. **Vocational vs. Academic Access:** In the initial system, only vocational students gained access. Achieving a specific *cut-off grade* was not as important; rather, there were minimum requirements, as discussed throughout this article. The positive aspect of establishing a *cut-off grade* is guaranteeing academic standards; however, many people do not enter out of vocation but as a second choice. Consequently, these students are not vocational and, therefore, do not exhibit the same level of interest as in the past.

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- [7] BC (Arxiu de la Biblioteca de Catalunya), JC (Fons antic de la Junta de Comerç), File XXVII, doc. 49, p. 1, doc. 50 p. 1 p. 5, doc. 52 pp. 1-2, doc.54 pp. 1-5 & 7, doc. 55 p. 3.

⁷Many times, it is not compatible because the person has family obligations that make them unable to afford these twelve months of boarding, which is more than a real year. We have come across cases where this has been done and the sacrifice was made by the entire family unit and was assumed with difficulty

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- [9] Archivo Museo Don Álvaro de Bazán (1787) Ordenanzas para el Real Colegio de San Telmo de Málaga. Madrid: Imprenta de Viuda de Ibarra. AMAB, Colegio de San Telmo, File 983, pp.3-12.
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- [11] BC (Arxiu de la Biblioteca de Catalunya), JC (Fons antic de la Junta de Comerç) File XCVII, Box 131 p. 7 & pp10-22.
- [12] BC (Arxiu de la Biblioteca de Catalunya), JC (Fons antic de la Junta de Comerç) File XCVII, Box 131 p. 3.
- [13] BC (Arxiu de la Biblioteca de Catalunya), JC (Fons antic de la Junta de Comerç), File XCVII, Box 131 p. 6.
- [14] BC (Arxiu de la Biblioteca de Catalunya), JC (Fons antic de la Junta de Comerç), File LXVII, Box 93, p. 4.
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- [16] BC (Arxiu de la Biblioteca de Catalunya), JC (Fons antic de la Junta de Comerç), File CVIII, p. 361.
- [17] BC (Arxiu de la Biblioteca de Catalunya), JC (Fons antic de la Junta de Comerç), File CVIII, pp. 366-367.
- [18] Arxiu de la Diputació de Barcelona. (ADPB) File 2281 p. 155.
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- [20] Arxiu de la Diputació de Barcelona. File 2367, p. 126.
- [21] Arxiu de la Diputació de Barcelona. File 2367, p. 137.
- [22] Arxiu de la Diputació de Barcelona. File 2367, p. 198.
- [23] Arxiu de la Diputació de Barcelona. File 2367, p. 208.
- [24] Arxiu de la Diputació de Barcelona. File 2367, p. 214.
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