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Marine environmental education in French schools: from sea classes to educational marine areas (1964-2022)

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Abstract: This paper focuses on marine environmental education in schools in France. From a historical perspective, it studies the initiatives leading to the natural environment, here the coastline, being considered as an educational component in its own right. It details the emergence and subsequent generalisation of two innovative measures within French schools, considered as original in the national education system: the «sea classes» (*classes de mer*) created in 1964, and the «educational marine areas» (*aires marines éducatives*), developed in 2012. Based on extensive archival work and unpublished testimonies from actors involved at all stages of the development of these models, this paper sheds light on the way in which these measures concerning marine environmental education were structured and evolved, in terms of both their applicability and their objectives. Above all, it seeks to demonstrate that although these models have long been institutionalised by the French Ministry of National Education and contribute to enriching the country's educational offer, they did not stem directly from an academic desire to reform school curricula. Rather, they originated with local initiatives implemented by stakeholders involved in action networks that enabled their projects to gain prominence and recognition within the school system. Finally, the study shows that the success of these measures and the enthusiasm they generate among educational actors legitimise the role of nature in schools. The interviews conducted, notably with teachers, highlight the fact that the natural environment, considered as a venue for learning, both contributes to the success of the lessons taught and increases the motivation of the learners. This then raises the question of the development of these measures outside of France.

Keywords: education, marine environment, sea class, educational marine area, pedagogy, measure.

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1. Introduction

In June 1964, twenty-four pupils around ten years of age boarded a bus and left their primary school in Lanrédec in the Finistère department (Brittany, western France) to relocate their classroom to the seaside. Accompanied by their teacher, they were on the verge of experiencing their very first «sea class». Hosted for a fortnight at the Moulin-Mer nautical centre in Logonna-Daoulas, near the city of Brest, they spent their days between school lessons, water sports, and discovery of the marine environment. This initiative was developed within the specific post-war context in which the new national education system promoted both active teaching methods for their pedagogical advantages as well as the outdoors for the associated health and wellness benefits (Gutierrez, 2011; Laffage-Cosnier & Vivier, 2014).

In France, the sea classes represented the continuation of a movement initiated by Dr. Max Fourestier, a school doctor in Vanves, in the southwestern suburbs of Paris, who had developed the «snow classes» (*classes de neige*) in 1953. The principle is simple: the classroom is relocated to the Alps for one month and the school day is divided in two parts with intellectual activities in the morning and physical education classes in the afternoon. The immediate success of the project encouraged Max Fourestier to extend this initiative to the «forest classes» in 1959 with a view to «bringing the classroom into the countryside» (Laffage-Cosnier, 2015). However, unlike the snow classes, the creation of the sea classes was not the work of a doctor but rather of a former teacher, Jacques Kerhoas, who had become the director of a nautical centre. Although some points of divergence can be noted in the objectives pursued through their initiatives, Fourestier and Kerhoas shared the idea that education in – and through – nature could revolutionise ways of teaching. They were the creators of the «nature classes» movement, today renamed «discovery classes», that then developed throughout France in the 1970s (Giolitto, 1978). Even today, and despite the spread of and evolution in the models (Camus-Le Pape et al., 2021), these classes relocated to the great outdoors are still extremely popular, representing a cornerstone in the pedagogical habits of many teachers, convinced by the special relationship with nature that they generate. Pierre Giolitto, former Inspector General of the French Ministry of National Education, described the nature classes as «a privileged venue for authentic education centred on the environment» (Giolitto, 1979, p. 257). He justified this statement by explaining the specific pedagogy characterising these outdoor classes: «nature classes are classes in which the pupils are in permanent contact with nature and its inhabitants. (...) The pedagogical activity is based on the study and systematic use of the environment. The time spent by the pupils within the four walls of the classroom is thus greatly limited» (Ibid., p. 261). Consequently, by getting out of the traditional classroom setting and by involving non-academic actors, these classes made it possible to redefine the traditional «educational form» (Vincent, 1980). More specifically, these sea classes constituted the first measure implemented and institutionalised to promote the discovery of and education with respect to the marine environment. Despite this, they do not seem to be well known outside of France and have not received the same level of recognition as the snow classes, which subsequently developed in Canada, notably in the 1960s. In addition, over the last ten years or so, a new measure that places the

natural environment at the heart of learning in schools has reinforced this policy of marine environmental education. This project involves entrusting the management of a small coastal area, referred to as an «educational marine area», to a school class for an entire academic year, with a view to raising awareness among the pupils concerning the protection of the marine environment.

Regarding marine environmental education, we can indeed note the original nature of the teaching initiatives developed in France, both in terms of their history as well as their objectives and the means employed. But what were the benefits sought by the inventors of these models in making the natural environment a privileged venue for education? How did these initiatives aimed at legitimising nature in schools develop and subsequently evolve to ensure that they endured in school curricula? What do these transformations of the initial models reveal about the latest social concerns in terms of environmental education? This paper aims to question these educational measures based around the marine environment to demonstrate the extent to which they redefine the link between the learner and the natural environment and revolutionise ways of learning. Furthermore, this study shows how the medical concerns of the first experiments gradually disappeared in favour of pedagogical motivations related to environmental education. In this respect, this paper aims to shed light on an original initiative in the French education system based on the study of the natural environment for the acquisition of the fundamentals of education.

To achieve this, we draw on Michel Foucault's concept of heterotopia (2004).[1] By modifying the space and by holding classes outside the school building, we consider that the sea classes, like the educational marine areas, provide a new definition of the roles of each person and offer a break with the «conventional» educational form. Furthermore, we examine how the evolution of the models encourages the study of these educational measures through the lens of eco-training (Pineau, 1993), which considers the formative relationship between the learner and their environment. Finally, the growing importance of environmental education, theorised by Lucie Sauvé in the early 1990s, attests to social changes, particularly in the perception of our relationship to the natural environment. We therefore consider it essential to take a closer look at this area for a detailed analysis of these measures, which have evolved over the years and with the various actors involved.

2. Methodology

Our investigation is primarily based on the study of multiple and unpublished sources, which can be divided into four main categories.

Firstly, the archives of several complementary establishments were consulted. These included the documents concerning the sea classes movement in the archives of *Nautisme en Finistère*, a public organization which promoted nautical activities in the department, which proved invaluable for this study, and particularly for understanding the historical implications of the movement. In addition, we were able

[1] Foucault defines heterotopias as 'other' spaces. Here, the new codes offered by the new space enable new relationships to take shape for a physical representation or approximation of a utopia through a greater use of the imagination.

to consult the private archives of Jacques Kerhoas, creator of the sea classes, which provided fascinating biographical information for a better understanding of both the man and the reasons behind his educational project. The archives of the French Ministry of National Education were also studied using keywords,[2] complemented by the archives of the National Museum of Education in Rouen. Finally, in this category, access to the archives of nautical centres hosting sea classes in the Finistère department since the creation of the first initiatives enabled a more local focus on the operation and organisation of this educational measure. The letters, pedagogical reflections, minutes of meetings and photographs thus obtained offered an initial and very in-depth view of our object of study.

Secondly, several interviews were conducted to gain a better understanding of this silent history (Artières, 2015). The interviewees involved in the sea classes or educational marine areas came from a variety of backgrounds (directors of nautical centres, teachers, and even academic officials). Above all, in order to better understand the evolution of French policy in terms of marine environmental education, we ensured a historical dimension to our interviews by meeting with actors involved throughout the years since the first initiatives, i.e. from the 1960s to the present day. Rather than a succession of pre-established questions, we conducted the semi-directive interviews (Combessie, 2007) in the form of more informal discussions. The data collected was thus all the richer as the interviewees were given the opportunity to discuss the subjects in a more natural way (Kaufmann, 2016).

Subsequently, field observations were made during sea classes or school outings to educational marine areas. These observations enabled us to see first-hand exactly how these measures work, and supported the statements made by our interviewees.

Finally, we were also able to consult certain video archives thanks to the resources of the French National Audiovisual Institute (INA), and notably its «Ina THEQUE» service with its large catalogue of audiovisual collections. A keyword search made it possible to select a few reports and documentaries that were particularly relevant to our analysis.[3] Comparing them with our contemporary observations, these documents from the past allowed us to identify changes in the discourse of the actors and the content of the marine environmental education measures for each period concerned.

These four complementary methods served as an epistemological basis for this paper in order to understand the transformations in the models and the evolution of the issues at work. Before looking at the creation of the sea classes, we first examine how the natural environment became an educational tool in post-war France and contributed to the development of a new pedagogy. We then focus on the introduction of the sea classes and their subsequent widespread use in teaching practices. Finally, we discuss the concept of the educational marine areas, which originated within a

[2] The following keywords were used: «sea class», «discovery class», «nature class», «snow class», «school trips».

[3] Here, the keyword search was limited to «sea class», which returned a substantial list of over 700 audiovisual files.

particular context and which have revolutionised marine environmental education in France.

3. The natural environment as an educational tool: from the first educational initiatives to the creation of the sea classes

Debates around a conception of nature as having an educational value and being essential for human development are not new. Some examples have been studied in recent years, notably the educational paradoxes posited by French philosopher Jean-Jacques Rousseau (Fedi, 2011). As early as the 18th century, Rousseau proposed an education based on nature, in which children up to the age of twelve would be introduced to aspects of the natural environment to stimulate their physical awakening. During the following century, Swiss pedagogue Rodolphe Töpffer proposed an innovative educational model. Within the context of debates on the school reforms to be implemented, he organised group excursions on foot in the Alps to provide what he considered to be a well-rounded education: physical, intellectual and moral (Töpffer, 1844). His project inspired the French Alpine Club, which created the «*caravanes scolaires*», hiking trips during the school holidays to «collect the lessons of nature in the field» (Hoibian, 2009). From that point on, the natural environment began to assert itself as a major resource for education, although it was initially integrated for its wellness benefits with a view to improving the children's health. This was especially true for the seaside, an environment that was considered to be exceptionally beneficial in the treatment of children with tuberculosis (Grandvoinnet, 2010). In the first half of the 20th century, the coastline was gradually accepted as an asset for the physical training of pupils, particularly in military schools such as that ofCancale in Brittany, which took advantage of its proximity to the sea to organise training activities there.[4]

[4] Archives of the National Museum of Education in Rouen: Hériot Military School, Cancale, 1926-1927.

Photo 1: Using the coastline for physical training, Hériot Military School, Cancale, 1926/1927 Archives of the National Museum of Education in Rouen.

However, it was not until after the Second World War that educational measures outside of the traditional classroom were really institutionalised in France. The context was particular in this post-war period, when it was felt that a reform of the education system was necessary. Paul Langevin and Henri Wallon, two intellectuals linked to the French Communist Party, were appointed for this task. They produced the Langevin-Wallon plan in 1947 proposing a democratisation and restructuring of the education system in France. Among the key ideas, they notably suggested transforming teaching practices by making students more active. While, in the end, this plan was never fully adopted, it did inspire the educational thinkers of the second half of the 20th century. Some of the principles of the Langevin-Wallon plan were implemented in Dr. Max Fourestier's snow classes and subsequently in Jacques Kerhoas's sea class project. Moreover, the snow classes were the first real outdoor school measure to be institutionalised and developed on a large scale within the French education system. In Fourestier's model, the addition of fresh air to the traditional school model was systematically based on a health and wellness conception of this reform of the education system. As a school doctor, he designed a model in which the school day was split in two, between teaching and physical education, with a view to improving the health of the pupils (Laffage-Cosnier, 2013). Implemented in the snow classes, this model led Pierre Giolitto to say that the primary aim of these classes was to ensure «preventive action in the field of health» (Giolitto, 1970, p. 89). The health and sports motivations dominant in the design of the snow classes were also found

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in the sea classes, but on a lesser scale. The creator of the latter, Jacques Kerhoas, was an original and pioneering teacher. He openly expressed his interest in the snow classes when he created his sea class initiative:

> For many years now, the snow classes have been working in a satisfactory manner for everyone involved, and I thought that a stay by the seaside could be just as beneficial to both the health and the intellectual development of children[5].

Passionate about education, Kerhoas was first and foremost interested in the establishment of a new relationship to knowledge. He wanted to make the natural environment the ultimate teacher. With the sea classes, he sought a new reflection on teaching methods by proposing «a school activity, but presented in an appealing and enjoyable manner».[6] In this respect, the sea classes were «an opportunity to question the pedagogical relationship, the very foundations of this pedagogy» (Courtrot, 1975, p. 4) but without marking «a break in school life» (Clair, 1974, p. 15). The guestbook of the first sea class indicates that «the children were very enthusiastic» about the stay, that they «learned about the sea» by observing it, sailing in it, diving into it, recovering treasures from it, but above all that they «finished their school programme with joy».[7] Despite the common inspirations behind the models and the similarities between them, the specific histories of the two measures were strongly shaped by the personal trajectories and affinities of their respective creators.

[5] Interview with Jacques Kerhoas (1964) in the programme *Littoral*, France 3 Bretagne, 2015, available online: https://www.youtube.com/watch?v=U5SnaZfegtc, accessed 08/02/2022.

[6] Interview with Jacques Kerhoas (1964) in the programme *Littoral*, France 3 Bretagne, 2015, available online: https://www.youtube.com/watch?v=U5SnaZfegtc, accessed 08/02/2022.

[7] Archives of Finistère 360°: Guestbook of the first sea class, page 4, 1964.

Photo 2. Jacques Kerhoas, creator and founder of sea classes. Source: Archives of *Nautisme en Finistère***.**

4. Jacques Kerhoas and the creation of the sea classes: between political activism and educational reform (1964-1971)

To understand a creation, it is necessary to first understand the personality of its creator. The sea classes were created and developed by Jacques Kerhoas, an emblematic figure whose life path had shaped his pedagogical thinking and his desire for change. A genuine mover and shaker, he could not imagine a fixed school model in which teachers taught and students learned within the four walls of the classroom. This pedagogical thinking was, however, only one of the multiple facets of his personality. He was first and foremost a former member of the French Resistance who had fought against the German occupation in Finistère during the Second World War, and who had continued to maintain an extensive network and strong ties with his comrades in arms long after 1945. Moreover, it was by relying on this network that he was able to restore an old, abandoned building in Logonna-Daoulas, a village located on the coast a few kilometers from Brest, transforming it into the nautical centre that would later host the first French sea class. Kerhoas was also a communist activist. A member of the French Communist Party, he ran in

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the legislative elections for the Landivisiau constituency in Finistère.[8] While he was finally not elected and gradually distanced himself from the Party, he nevertheless maintained certain links with it, particularly on educational issues about which he felt very strongly, notably school inequalities and the integration of educational leisure activities into school curricula.[9] At a symposium on the national education system in 1971, Kerhoas expressed his ideas: «Why this dissociation between school and leisure activities? Don't both contain educational virtues for the child's personality?»[10] His convictions were thus directly linked with popular education which, in the post-war period, challenged the hierarchical relationship to form part of «a tradition closely uniting the culture of the body with that of the mind, (...) evidenced by the new popular aspirations for the open air, leisure, pacifism, internationalism, conveying representations of health, the aesthetics of the body, physical effort, and encounters with nature» (Vennin, 2017, p. 68). This connection with the natural environment was reflected in Kerhoas's passion for the sea. An integral part of his daily life during his childhood, he took every opportunity he could to go sailing, and was indeed considered a «good sailor».[11] But above all, Kerhoas devoted his professional career to teaching. Coming from a «generation for whom the profession of teacher was a calling», he trained at the *École Normale* teacher-training college at a time when «the theorists of physical education in schools privileged the scientific and medical dimension, while nevertheless including a social and moral dimension» (Solal, 1999, p. 226). He was thus particularly interested in methods aimed at making pupils actors in their own education: the desire to open up primary school learning, to hold classes «outside the walls of the classroom», to train the body as much as the mind. All these aspects and more were to be found in his teaching practices, particularly in his experimental work with the sea classes. Encouraged by the success of the snow classes, Kerhoas explained that the idea of teaching classes on the coast had struck him as obvious after realising that many children were not familiar with the sea despite their geographical proximity to it. By teaching there, he wanted to «get out of the school ghetto, get out of the structures, and get the children out of the city» (Doucet, 1974). In May 1964, he contacted the National Education Authority of the Finistère department about his project, justifying its usefulness by notably pointing out «the problems related to the teaching, education and health of children».[12] The Departmental Inspector agreed to the organisation of a two-week experimental sea class in June of the same year. During this stay, the activities were divided along the principle of teaching in the mornings and activities in the afternoons, as implemented in the snow classes. One pupil wrote the following in the guestbook of the stay:

[8] Le Maitron, https://maitron.fr/spip.php?article107821, accessed 08/02/2022.

[9] Archives of Finistère 360°: Personal memorandum by Jacques Kerhoas, 1964.

[10] Archives of Finistère 360°: National symposium on the sea classes, May 1971.

[11] Journal *L'Éducation*, 1968 in Gardet, M. (2015). *Histoire des PEP. Tome 2, 1940-1974 : à la croisée du plein air et de l'enfance inadaptée*. Beauchesne: Paris, p. 196.

[12] Archives of Finistère 360°: Letter from Jacques Kerhoas to the Inspector of National Education of the Finistère department, Quimper, 1964.

> At 8:30 in the morning I was in the classroom with my classmates. At noon, a fantastic meal was laid out for us in the canteen. At the end of this meal we took a little nap. At half past two we embarked on the «Caravelles». We came back from this trip two hours later, exhilarated by the fresh sea air. I went to the dormitory to change and ate a biscuit there that my mother had given me when I left home. At 7 o'clock in the evening we had dinner[13].

Photo 3: A sailing lesson during the first sea class. Source: Archives of *Nautisme en Finistère***, 1964.**

The school programme continued in this way, with the mornings being devoted to basic learning such as mathematics or French, and the afternoons to sailing or to the study of the environment in the broad sense of the term thanks to the intervention of professionals such as oyster farmers. Above all, the teaching was based on the activities organised outdoors for the children. For example, marine coefficients or the speed of boats were used in calculation lessons, while the experiences on the water were recounted in writing assignments (Doucet, 1974, p. 34). At the end of the stay, the feedback from the educational leaders on this first experience of a sea class appeared to be very positive at all levels:

> From a health perspective, the general condition of the group was excellent. All the children gained weight.

[13] Archives of Finistère 360°: Guestbook of the first sea class, page 3, 1964.

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> From a pedagogical perspective, the children displayed a renewed interest in their studies. The lessons in history, geography and science, systematically given in the open air, were based on careful observation of facts and things.
>
> From a psychological perspective, the pupils who were a little restless during the first few days became extremely calm afterwards. Whether between the children and the teacher, or between the children themselves, everyone got to know and to value each other better than in the often somewhat artificial environment of the classroom. In contact with nature, exchanges became easier because they were more varied and more spontaneous. We were able to appreciate the values of mutual aid and solidarity. Not least among the merits of this sea class experience is the excellent apprenticeship of life in society that it provided[14].

Based on this success, supported by the local authorities, and encouraged by the National Education Authority of the Finistère department, Jacques Kerhoas was keen to see the rapid development of his model so that the experiment could spread and become an innovation through institutionalisation. In short, he wanted the sea classes to become part of the French school landscape and expected recognition from the Ministry of National Education. To achieve this, he created the *Association Finistérienne pour le Développement des Classes de Mer* (AFDCM) on 1 December 1966. The aim of this association, which was based in the premises of the National Education Authority of the Finistère department, was to «encourage the creation of sea classes and help with their organisation in terms of administration, management and pedagogy».[15] From that point on, the number of schools organising sea classes increased very quickly, with their development spanning all the Breton coastlines from 1967 onwards:

	1963-1964	1964-1965	1965-1966	1966-1967	1967-1968	1968-1969	1969-1970	1970-1971
Number of classes	2	4	5	14	46	65	98	198
Number of children	53	85	98	371	820	1,937	2,409	5,277

Seconded to the AFDCM by the Ministry of National Education with a view to perfecting his sea class project, Jacques Kerhoas refined his method, with the figures proving the success of this initiative: sea classes were increasingly integrated into teaching practices and the geographical origins of the classes became more diversified. At the same time, thanks to the sea classes, the morning and afternoon schedule gradually gave way to a schedule dividing the day into three main periods: fundamental learning, childhood development activities, and physical activities. The

[14] Archives of Finistère 360°: Guestbook of the first sea class, page 17, 1964.

[15] Archives of Finistère 360°: Declaration of creation to the Prefecture of Finistère of the *Association Finistérienne pour le Développement des Classes de Mer*, Quimper, 1 December, 1966.

aim of this adaptation was to «go beyond the stage of the sports class and reach that of an original global educational enterprise» (Giolitto, 1978).

The importance that the sea classes had taken on in school curricula also encouraged the Ministry of National Education to take a closer look at this initiative with a view to creating a specific regulatory framework governing it, the sea classes having been considered up to this point within the same framework as the snow classes. Thus, in 1967, the Minister of National Education wrote to Jacques Kerhoas requesting «a very detailed report on the operation of the sea classes in the Finistère department. This report should provide very clear answers to the various questions raised.»[16] Then, on 14 November 1968, circular no. IV 68-450 was published on the subject of «fresh air classes, sea classes, snow classes».[17] It dealt in particular with the safety problems that could arise. The institutionalisation of the sea classes was nevertheless slow in coming. In its absence, the AFDCM continued to structure this sector, notably by producing educational documents on the sea classes. These documents served as a basis for the long-awaited institutionalisation, which finally occurred with circular no. 71-168 of 6 May 1971, seven years after the first sea class. The circular defined the sea classes as follows:

> these are classes typically comprising any of the three levels of education: pre-primary, primary and secondary. The stays shall last at least three weeks with the full complement of pupils and their usual teachers. However, in the case of nursery classes and by way of derogation, a stay limited to two weeks may be authorised. (...) The teacher shall remain responsible for his or her class in all circumstances, but the programme of activities shall be drawn up by the entire supervisory team. The latter shall establish a voluntarily flexible timetable to ensure the good osmosis or alternating of physical and intellectual activities, also taking all local circumstances into consideration. However, the timetable should still allow for schoolwork in accordance with the class curriculum and the instructions concerning the three main periods of the day[18].

This status enabled marine environmental education to assert itself as a pedagogical issue in the French education system, and for the sea classes to take on a professional aspect in order to continue to develop. In addition, the regulatory framework was reinforced by circular no. 71-302 of 29 September 1971, which set out the specific nature of the sea classes: «A day that could have been organised into two parts, one sports-oriented, the other academic, is replaced by a continuous day in which all of the activities involve the study of the environment.»[19]

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[16] Archives of Finistère 360°: Letter from the Minister of National Education to Jacques Kehoas, 1967.

[17] Archives of Finistère 360°: Circular no. IV 68-450 of 14 November 1968, «Classes d'air pur, classes de mer, classes de neige», Paris, 14 November 1968.

[18] Archives of Finistère 360°: Circular no. 71-168 of 6 May 1971, «Organisation des classes de mer et des classes vertes», Paris, 6 May 1971.

[19] Archives of Finistère 360°: Circular no. 71-302 of 29 September 1971, «Pédagogie des classes de mer et des classes vertes. Centres permanents», Paris, 29 September 1971.

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5. The natural environment as an exceptional venue for learning

The issue of supervision was central to the sea classes. From the outset, Jacques Kerhoas considered it to be essential, and designed it in such a way as to support the teacher who had to be able to count on support in order to derive the maximum educational benefit from the stay, as they were arriving in a maritime environment that was not necessarily familiar to them, and that could even seem hostile. Supervision was initially entrusted to teachers who were in the process of being trained and who had a thorough knowledge of the marine environment. However, faced with the development of the sea classes, it very quickly became apparent that this was not sufficient. Consequently, Kerhoas and his network wanted to set up a specific training course to train «marine environment educators» who would be able to supervise the children on the water but would also have sufficient scientific knowledge to teach them about the natural environment they discovered during the sea classes.[20] A training centre for marine environment educators was thus created at the Moulin-Mer nautical centre with a view to professionalising the supervision of the classes by means of specific profiles. Pierre Giolitto noted that these marine environment educators constituted «the only relatively coherent group within the heterogeneous group of instructors» of discovery classes (Giolitto, 1978, p. 93). They participated in the creation of very relevant teaching materials in line with the objectives of the sea classes: «an educational approach to the coastal environment, an original way in which to discover the sea, educational benefits for all children.»[21] In fact, in the decades following the institutionalisation of the sea classes, the question of the renewing of teaching methods remained a major issue. The sea classes were still considered and designed as a time outside of normal schooling, enabling the children to learn differently through immersion in an unusual setting. In this respect, the heterotopia defined by Foucault seems appropriate, the marine environment appearing as an 'other' venue renewing the relationships between the pedagogical actors (teacher/pupils) and redefining the relationship to knowledge. Philosopher Emmanuel Nal (2015) considers that «the heterotopic space is also that which is seized, and therefore that which conceals the possibility of an appropriation, which is certainly never definitive because specific to each person, evolving and adapting according to the potential of imagination and sensitivity involved». For example, a child interviewed in a focus group by researchers Gilles Brougère and Baptiste Besse-Patin[22] following a sea class explained that he particularly remembered «the cormorant because I loved it when it put its wings like this [making the gesture]; it looked like Batman». This testimony is interesting because it helps to understand the appropriation that children make of the natural environment they discover during

[20] Archives of Finistère 360°: «Pour une action éducative globale en milieu marin dans le département du Finistère», AFDCM, 1975.

[21] Archives of Finistère 360°: «Les classes de mer en Finistère», AFDCM, 1985.

[22] These focus groups are conducted within the framework of the CLASMER project, the objective of which is to bring together researchers specialising in issues related to the coastline, tourism and learning, to examine the sea classes from historical, geographical, educational, sociological, anthropological, economic and architectural perspectives (https://clasmer.hypotheses.org/a-propos).

the sea classes. Despite the richness of the lessons learned during these classes, the children first emancipate themselves from the usual constraints of the school through observations that are more directly related to their personal sensitivities. However, the learning that takes place outside the classroom is as relevant and important as that occurring inside the school, if not even more significant (Byrnes, 2001; Knight, 2013; Chawla, 2015; Dillon et al., 2016).

Photo 4. A sea class renews the pedagogical link between teachers and pupils by using the coastline as a classroom. Source: Archives of Centre Nautique de Douarnenez.

The discovery of the marine environment has always been the major issue behind the sea classes. Even physical activities such as sailing or kayaking were first considered as a means of accessing the natural environment,[23] of offering a different perspective of the coastline and its foreshore with a view to increasing knowledge of them. Imagined as early as the 1960s, the sea classes can therefore be considered as an avant-garde project of environmental education that went on to become popular during the 1970s (Bourquard, 2016; Jacqué, 2016), before being theorised by Lucie Sauvé (1994) as the relationships between individuals and their environment. Sauvé identifies three analytical perspectives: an environmental perspective studying the overall quality of the environment, a psycho-social perspective questioning the relationship maintained with the environment, and a pedagogical perspective analysing the quality of both the teaching and the learning processes. The sea classes propose a model in which the relationship between the child and the environment is predominant, despite this model having undergone certain evolutions with the passing years. The circular of 6 May 1971 insists on the fact that the «environment» must be the privileged centre for all the activities, while

[23] Interview with Henri Lebeul, Secretary of the AFDCM from 1971 to 1981.

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a memorandum dating from 1982 stipulates that the sea classes aim «to encourage the development of the whole personality of the children, relying on their need to act, to understand and to communicate, and helping them to better situate themselves in their natural or cultural environment».[24] During the 1990s, the issue remained similar: the sea classes «must enable the children to understand and to respect nature. The main thing is to awaken their interest and curiosity in nature, to inspire them to observe and question.»[25] However, as an educational measure, the sea classes have undergone significant changes since their creation, particularly in their form. Indeed, the average length of the stays has been drastically reduced: the compulsory three weeks in 1971 have gradually given way to shorter stays, mainly of between four and twelve days. This evolution can be explained in part by budgetary issues, with the public authorities committing themselves less to these initiatives, as well as by increased administrative constraints, particularly where safety issues are concerned. The main objective of the sea classes nevertheless remains the same: to get children out of the classroom and to offer them a renewed relationship with education. Moreover, the actors of environmental education continue to evolve, proposing new pedagogical approaches – proof of a still dynamic sector.

6. Educational marine areas, a new measure for marine environmental education

In 2012, a group of scientists from IFREMER conducted an oceanographic research mission in the Marquesas Islands in French Polynesia, a mission that also included a presentation of their work to the pupils of the Vaitahu primary school in Tahuata Bay. Taking a top-down approach of knowledge imparted by adults to children, the scientists explained the reason for their visit and the importance of taking care of the marine environment. During the presentation, one pupil wondered why the children could not take care of the preservation of these natural marine resources themselves. This question gave rise to the concept of an «educational marine area», which was initiated in this school in 2013. The principle of this initiative involves entrusting the management of a small coastal area to the pupils of a school for a whole school year, working in association with a designated specialised structure and the municipal authority of the town in which the coastal area is located. Inspired by marine protected areas (Chaboud et al., 2008), educational marine areas are designed to raise awareness among the younger generations about protecting the marine environment. They are based on three fundamental principles, derived from education for sustainable development (Pellaud, 2011): training in eco-citizenship and sustainable development, reconnecting pupils with nature and their region, and encouraging dialogue between pupils and maritime professionals. This new measure met with immediate success among the teachers involved, and subsequently experienced rapid and spectacular development. Initially limited to French Polynesia until 2016, the initiative was then successfully exported to mainland France where

[24] Archives of Finistère 360°: Memorandum no. 82-399 of 17 September 1982, Paris, 1982.

[25] Archives of Finistère 360°: Circular no. 93-118 of 17 February 1993, «Classes d'environnement à l'école primaire», Paris, February 1993.

more than 260 educational marine areas have now been inventoried by the French Biodiversity Agency,[26] which coordinates this measure. Surveys carried out among teachers show that, once again, this success is primarily explained by the new way of learning involved. Indeed, as it is conducted over the course of an entire school year, the educational marine area provides a common thread to the curriculum that evolves according to the pupils, who thus become actors in their own learning. In addition, the measure provides a realistic and civic dimension because, after conducting an inventory of the natural area they manage, the pupils must implement actions to protect and ensure the sustainability of this area. For example, a school on the island of Réunion in the Indian Ocean undertook an action to revegetate the beach under its responsibility in order to preserve the habitat of marine turtles. Above all, the pupils are able to explain the reasons for their actions, even to adults, as one teacher told us:

> I organise my entire school year around the educational marine area. This also enables me to implement a different type of teaching... (...) It is beneficial for the children's motivation: they are outside, they have less of a feeling of being forced to learn and yet they still learn... In the end, the requirements of the reference framework of skills to be acquired are met because the children have studied science, they have written essays, and of course they realise that they have a role to play in preserving their environment. (…) Many discover the environment for the first time as they never went there before. Or they did go there, but they didn't pay attention to it[27].

From this perspective, the measure can be compared to eco-training (Pineau, 1993) in the sense that a formative relationship is created between the learners and a natural environment that takes on the role of teacher. The children's experience in their educational marine area places them in a position where they can reflect on the natural environment. They learn by doing, by experiencing nature first-hand. From that point on, nature becomes the teacher, redefining the traditionally accepted approaches of school models. This contemporary measure responds to societal issues by seeking to recreate the link between individuals and the natural environment. Unlike the sea classes, which represent a break during the school year in a natural environment, educational marine areas allow pupils to leave the classroom at any time during the year. In this respect, they constitute a good response to contemporary societal issues that encourage us not to limit schools to four walls but to take advantage of natural areas to diversify educational approaches. Moreover, a variant of the measure has been created, namely the educational land areas. Operating along the same lines as the educational marine areas, it is the natural area studied that is different – a forest, a river, even a city park – but with the same objective of renewing the educational relationship and the link with the environment.

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[26] *Les aires marines éducatives*, website of the French Biodiversity Agency (OFB), https://www.ofb.gouv.fr/les-aires-marines-educatives, accessed 08/02/2022.

[27] Interview with a school teacher in Réunion, 2021

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7. Conclusion

Marine environmental education is unique in the French education system which, while rarely highlighted for its capacity for innovation in teaching practices, nevertheless boasts two innovative and original measures with the sea classes and the educational marine areas. We note however that the two projects were initially created at the local level by determined and committed actors, and that the institution, represented by the Ministry of National Education, was never involved at the origin of these measures.

Stemming from a movement strongly linked to popular education and from a teacher's desire to break with the traditional school model, the sea classes have existed for nearly sixty years now. The success of Jacques Kerhoas's project can be explained by his avant-garde vision and his ability to mobilise and structure a network around him. The measure has also been able to adapt to the changes in society and to new contemporary challenges in order to evolve. Despite a few difficult periods, particularly at the time of the death of their creator in 1992, the sea classes form part of the French school heritage. At the crossroads between an educational project and a leisure activity, this measure promoting marine environmental education continues to be acclaimed by teachers who are utterly convinced of its benefits. However, the fact that it is not well known outside of France is surprising. A European project, Atlantic Youth, funded under the Erasmus+ programme, was launched in 2017 for a period of three years to create the first European sea class. Inspired by the model at work in the French system, the aim of the Atlantic Youth project was «to develop an inclusive maritime and nautical education at school with a strong contribution to the educational project, accessibility for all students and an affordable cost».[28] Bringing together six partners from France, Spain, Portugal, Ireland and the United Kingdom, the project has the underlying objective of introducing this model of marine environmental education to other European countries. The interest shown by the participating schools testifies to the vitality of a measure that would deserve to be renewed and reinvented on new coastlines.

Educational marine areas offer a more contemporary vision of marine environmental education. They are marked by the concepts of education for sustainable development and the participatory management of natural areas. Their immediate success demonstrates that this measure responds to concerns that are increasingly present in society. In this way, they provide a new perspective on societal expectations in terms of the preservation of natural areas. For a long time limited to the decisions of scientific experts, questions related to environmental management are today more open, and the pedagogical approach of the educational marine areas demonstrates the desire on the part of the younger generations to be involved in protecting the environment. Moreover, the renewed motivation of pupils taking part in sea classes or in educational marine area projects proves the benefits and the need for an education system that integrates the natural environment.

[28] Presentation and aims of the Atlantic Youth project, http://www.cim-altominho.pt/gca/?id=1526

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