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EDUCATION OUTSIDE THE CLASSROOM: FROM OPEN AIR SCHOOLS TO MODERN EDUCATIONAL PRACTICES

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ABSTRACT

This study examines the historical evolution of Open Air Schools and the development of modern educational practices that take place outside the traditional classroom environment. Their establishment in the early 20th century responded to the need to address the health and social problems of industrial cities. Education in open spaces was seen as a solution to limit the spread of tuberculosis and other diseases while also providing an alternative learning environment for children from vulnerable social groups. The first initiative focused on linking physical health with the learning process, aiming to create a school framework that promotes hygiene and physical activity.

The transition of Open Air Schools from their initial health-related role to a broader pedagogical model was influenced by social and scientific factors, such as developments in public health, the pedagogical theories of the 20th century, and the increasing awareness of the interaction between the environment and learning. Improvements in urban health conditions reduced the necessity of these schools as a means of disease prevention, leading to their gradual transformation. The introduction of child-centered approaches and the recognition of experiential learning as a core element of the educational process contributed to the evolution of Open Air Schools into modern outdoor schools.

Today's "modern outdoor schools" combine the dynamics of outdoor learning with contemporary teaching approaches, incorporating technological tools and integrating concepts such as environmental education and sustainability. The emphasis on interdisciplinary knowledge and the development of skills such as collaboration and critical thinking highlights the role of modern outdoor schools as educational environments that transcend the boundaries of the traditional classroom.

Keywords: Open Air Schools, contemporary learning, education outside the classroom, virtual environment education, educational innovation, virtual learning environments

1.0 INTRODUCTION

The development of outdoor schools in Europe is a characteristic example of the dynamic interaction between social needs and pedagogical theories. The emergence of Open Air Schools in the early 20th century was directly linked to the epidemiological and social challenges of the time, primarily tuberculosis, unsanitary living conditions, and the need for an educational policy that would respond to public health conditions (Brehony, 2004; Grosvenor & Burke, 2008). However, the subsequent trajectory of these schools highlighted a shift from their initial

health-focused orientation toward a multidimensional pedagogical perspective. This perspective incorporated elements of experiential learning and the development of social skills, as well as modern outdoor educational models such as forest schools (Waite, 2017; Maynard & Waters, 2007). This evolution reflects broader social and educational changes, as well as the influence of new theoretical approaches to learning and child development.

The establishment of the first Open Air Schools was based on the belief that education could function as a means of preventing infectious diseases, particularly tuberculosis, which had reached epidemic proportions in European industrial cities (Cunningham, 2005). The school facilities of these institutions were designed to maximize exposure to fresh air, aiming to improve students' health and enhance their physical resilience (Guldberg, 2009). Furthermore, education in these schools was combined with specialized programs in nutrition, physical exercise, and hygiene, while pedagogical practices were adapted to meet the needs of students who were considered vulnerable (Holt, 2011).

The transition from Open Air Schools to "modern outdoor schools," such as forest schools, was the result of social and pedagogical changes that took place throughout the 20th century. As tuberculosis was effectively managed and public health conditions improved, the need for schools exclusively focused on disease prevention significantly declined (Palmer, 2016). At the same time, the development of new educational theories that emphasized the importance of experiential learning, children's interaction with the natural environment, and the reinforcement of their autonomy contributed to the transformation of outdoor schooling into a pedagogical space with new objectives (Bilton, 2010).

The foundation of modern outdoor schools was based on theoretical approaches that highlighted the value of experiential learning and play in a natural environment. Dewey (1938) argued that education should be based on students' direct experience, while Piaget (1950) emphasized the importance of interaction with the environment for cognitive development. These principles contributed to the establishment of forest schools, which promote learning through exploration, collaboration, and creative activities in a natural setting (Knight, 2013).

In contemporary European educational policy, "modern outdoor schools" are integrated into broader strategies aimed at developing adaptability, creativity, and ecological awareness among students (Waller et al., 2017). The reinforcement of these approaches is supported by studies showing that outdoor education contributes to the development of social skills, the improvement of mental health, and the enhancement of the learning experience through direct interaction with the environment (Rickinson et al., 2004).

The evolution of outdoor schools from health-oriented institutions to pedagogical establishments reflects shifting perceptions of the relationship between humans, the natural environment, and education. From an initial approach focused on health protection, outdoor schools have transformed into spaces that promote a holistic pedagogical approach based on experience, participation, and the enhancement of students' creativity. Through this historical trajectory, it becomes evident that the educational process is directly influenced by social conditions and theoretical developments, continuously shaping educational practices and pedagogical objectives.

2.0 PURPOSE AND EVOLUTION OF OPEN AIR SCHOOLS

The establishment and purpose of Open Air Schools were shaped by the social and health conditions prevailing in Europe in the late 19th and early 20th centuries. Rapid industrialization and the accompanying urbanization increased population density in cities, exacerbating the spread of infectious diseases, particularly tuberculosis. The impact on public health underscored the need for new approaches to both prevention and education, reinforcing the search for more flexible forms of teaching. Within this context, schools operating in outdoor spaces were developed, where the natural environment was considered more suitable for students' health (Grosvenor & Myers, 2006).

According to Antony Wohl (1983), tuberculosis was referred to as the "scourge of the industrial age," as poor living conditions, lack of fresh air, and inadequate nutrition contributed to its spread. The urgent need for measures to protect children's health led to the establishment of the first recorded open-air school in Berlin in 1904 by Bernhard Bendix and Hermann Neufert, with the goal of educating children vulnerable to tuberculosis (Porter, 1994). In Germany, open-air schools operated under the auspices of the Deutscher Verein für Schulgesundheitspflege (Cunningham, 2012). Their operation was based on the belief that a clean environment, sunlight, and a balanced diet could contribute not only to improving students' health but also to enhancing their educational process.

The idea of Open Air Schools developed as a response to the needs of children who had either contracted tuberculosis or were considered vulnerable. Similar initiatives were adopted in other European countries, such as Britain, France, Belgium, and the Netherlands, responding to growing concerns about public health and child mortality. At the same time, these programs were adapted to the specific local conditions and educational traditions of each country (Grosvenor & Myers, 2006).

The development of social medicine and health reforms in the early 20th century led to the recognition of the need for hygienic school infrastructure (Baldwin, 2009). Government and municipal authorities supported the creation of healthy school environments, realizing that combating childhood tuberculosis was a priority both for public health and for strengthening the economic productivity of the population. At the same time, social reformers of the era, such as Jules Ferry in France and Robert Baden-Powell in Britain, supported initiatives that promoted education alongside physical well-being.

The demographic boom in industrial cities, combined with overcrowded housing and inadequate basic sanitation infrastructure, contributed to the spread of infectious diseases. Additionally, education in urban areas was characterized by large, dark, and often poorly ventilated school buildings, creating unfavorable learning conditions. Open Air Schools were not only a measure to prevent tuberculosis but also an effort to reshape the school environment to better serve students from socially vulnerable groups (Baldwin, 2009).

The primary purpose of Open Air Schools was to protect students' health for medical reasons. Students underwent regular medical check-ups, and their nutrition was strictly regulated. The hygiene regulations implemented in open-air schools served as a model for the subsequent development of school health policies across Europe (Porter, 1994). Furthermore, medical research of the time showed that fresh air, a healthy diet, and light physical exercise could not only improve the health of children who were infected or at risk of infection but also strengthen their immune systems (Rothman, 1995; Rosen, 2015).

To meet all these challenges, the first open-air schools were structured based on specific principles. Students spent most of their day outdoors, while classes were held in wooden pavilions or semi-open classrooms. The daily schedule included extended breaks and physical activities to ensure a balance between learning and well-being. The educational routine was not only aimed at reducing the risk of disease transmission but also at enhancing children's overall health, reflecting contemporary views on the importance of the natural environment in maintaining well-being (Brehony, 2004).

Beyond health and social parameters, open-air schools introduced an alternative approach to learning that distinguished them from traditional schools. Teaching practices incorporated more physical activity, a student-centered approach, and a flexible schedule to accommodate students' needs (Grosvenor & Burke, 2008). Instead of static learning within classrooms, emphasis was placed on direct contact with nature, free expression, and interdisciplinary teaching, contributing to the evolution of progressive pedagogical movements such as those of John Dewey and Maria Montessori.

The questioning of the traditional classroom as the sole space for knowledge transmission had already been articulated in their theories, with Dewey (1938) advocating experiential learning and Montessori supporting an environment that fosters children's autonomy and engagement. The educational model of Open Air Schools, which was based on interaction with the natural environment, incorporated some of these ideas, promoting a more experiential and student-centered teaching approach (Montessori, 1912).

The differentiation in the structure and function of open-air schools also underscored the importance of students' emotional and physical well-being (Cunningham, 2006). Unlike traditional schools, where students had to adapt to strict rules and static environments, Open Air Schools promoted a dynamic approach that allowed students to learn through experience and direct interaction with nature (Weston, 2004). Innovation in the pedagogical approach was not limited to acquiring knowledge but also focused on developing personal skills such as self-esteem and cooperation, which were considered equally important for students' holistic development.

The expansion of Open Air Schools was inextricably linked to public health policies and broader social restructuring that shaped Europe during that period. Their experience provided valuable lessons on the connection between education and well-being and laid the groundwork for later educational initiatives that emphasized the importance of the environment in the learning process (Gutman & De Coninck-Smith, 2008). The evolution of Open Air Schools highlights the adaptability of education to students' needs and changing social conditions, demonstrating that learning is not confined to a fixed and predetermined environment (Waite, 2017). From public health to the promotion of educational freedom, the example of outdoor schools illustrates how education can function as a tool for social change and improving children's quality of life.

3.0 SOCIAL AND SCIENTIFIC FACTORS OF THE TRANSITION

The evolution of Open Air Schools into "modern outdoor schools" with a pedagogical orientation reflects the social and scientific developments that shaped education in the 20th and 21st centuries. Advances in public health, through improved sanitation conditions and the

development of effective treatments for diseases such as tuberculosis, reduced the need for schools primarily serving a health-focused role. At the same time, perceptions of childhood evolved, with increasing emphasis on the importance of play, free exploration, and emotional development as fundamental components of the learning process. Developments in educational science, particularly the expansion of theories focusing on experiential and participatory learning, also influenced the operation of these schools, transforming them into educational environments that promote autonomy, collaboration, and the holistic development of children.

Progress in public health played a crucial role in the transformation of Open Air Schools, leading to the gradual redefinition of their purpose. After World War II, the discovery of antibiotics and the development of more effective treatments significantly reduced tuberculosis and other infectious diseases, lessening the need for schools primarily aimed at protecting students' health (Care, Evans, Holder, & Kemp, 2015). Additionally, the strengthening of vaccination programs and the improvement of sanitary infrastructure, such as enhanced water supply and sewage systems, were critical in reducing epidemics that had previously affected school communities (Rosen, 2015). These changes allowed for a reconsideration of the role of outdoor schools, which gradually shifted away from a purely health-oriented approach and evolved into environments that emphasized the psychological and pedagogical dimensions of education, integrating contemporary learning and developmental theories.

Perceptions of childhood and education underwent radical transformations in the 20th century, centered on securing children's well-being and rights. UNICEF, through its declarations, highlighted education as a fundamental right, promoting pedagogical values that emphasized the holistic development of students and the creation of educational environments that support emotional, social, and cognitive growth (Heywood, 2001). Open Air Schools, initially established to address health challenges, were influenced by this shift and gradually adopted educational practices that fostered autonomy, creativity, and experiential learning. The pedagogical evolution of outdoor schools is an integral part of the broader social changes that shaped modern educational thought. Education was no longer seen merely as a mechanism for transmitting knowledge but was recognized as a dynamic process that shapes active and conscious citizens (Hendrick, 1997).

The evolution of educational science contributed to the transformation of outdoor schools from institutions serving primarily health-related purposes into learning environments with an emphasis on experiential learning. The evolution of pedagogical science has reshaped the operation of outdoor schools, expanding their role from disease prevention spaces to environments that promote children's learning and personal development. In the early 20th century, education focused on the transmission of knowledge within rigidly structured classrooms, giving little consideration to students' needs and experiences. However, the theories of John Dewey emphasized experiential learning, introducing the idea that education should connect with children's real-life experiences and incorporate the natural environment as an active learning tool (Dewey, 1938). Similarly, Jean Piaget highlighted cognitive development as a dynamic process, arguing that interaction with the environment shapes thinking and perception of the world (Piaget, 1950). Meanwhile, Maria Montessori introduced a child-centered approach, where freedom and self-directed learning were integrated into the structure of the educational environment. Kurt Hahn emphasized the value of outdoor education as a means of fostering responsibility, collaboration, and self-discipline. Over time,

outdoor schools began incorporating these pedagogical principles, ultimately transforming into modern learning environments that prioritize students' holistic development (Montessori, 1912; James & Prout, 2015; Michl, 2020).

Educational reforms in the 20th century played a crucial role in the gradual departure from Open Air Schools, which were initially founded as a response to health crises. As education became compulsory and national education systems adopted standardized curricula, there was a need for a broader integration of outdoor learning into a structured educational framework. Adaptation strategies included the incorporation of outdoor activities into the daily school curriculum, preserving elements of the original Open Air School concepts without requiring separate educational institutions. These activities were not limited to simple outdoor lessons but embraced a pedagogical philosophy that recognized the significance of nature in fostering children's holistic development. With the advancement of modern pedagogical methods and the influence of theoretical approaches that supported the connection between learning and the natural environment, the value of outdoor education gained further recognition. This ultimately led to the establishment of modern educational models that utilize the natural world as a tool for students' psychological, emotional, and cognitive growth (Cunningham, 2006).

The transformation of outdoor schools into contemporary educational structures is linked to a complex interaction of social, scientific, and pedagogical factors, shaping a new educational orientation. The decline of epidemics, fundamental shifts in social attitudes toward childhood, and advances in educational theory all contributed to the formation of a model in which outdoor education is no longer perceived solely as a health protection measure but as a significant educational process. Today, it serves to promote personal development, autonomy, and social skills among students (Waite, 2017).

4.0 THE PROGRESSIVE CHANGE IN THE PERCEPTION OF SCHOOL

Social perceptions of schools in Europe underwent a radical transformation in the 20th and 21st centuries, reflecting changes in economic, political, and cultural structures. The school, once an institution primarily focused on discipline and rote memorization, evolved into an environment that fosters creativity, autonomy, and students' social skills. The recognition of childhood as a distinct developmental phase, the strengthening of democratic values in education, and the need to adapt to the demands of the digital age made it necessary to reconsider the role of the school (Aries, 1965; Biesta, 2011). The enhancement of inclusive education and personalized learning highlighted the transition toward educational models that accommodate the diversity of students, taking into account their individual learning needs and the social challenges of the modern world (Fielding & Moss, 2011).

In the industrial societies of the 19th and early 20th centuries, education was structured as a mechanism of discipline and control, serving the need for mass schooling aimed at ensuring worker discipline and social uniformity. However, the social and economic changes that followed the two world wars, along with the establishment of the welfare state and new perceptions of childhood, contributed to the shift toward a more human-centered and student-oriented educational model (Green, 1990). Within this framework, the concept of school was redefined, emphasizing not only the transmission of knowledge but also the development of critical thinking, creativity, and social skills, which are essential for integration into a rapidly changing society (Lawn, 1996).

This shift had a direct impact on perceptions of school spaces and teaching methods, leading to the adoption of alternative forms of education, including outdoor schools. Open Air Schools, initially developed to address health problems, gradually became part of a new pedagogical movement that recognized the importance of the natural environment in the learning process (Cunningham, 2006). During the 20th century, the gradual decline of epidemics and the institutionalization of compulsory education reduced the need for separate outdoor schools, but their core principles were integrated into modern educational practices. Outdoor education re-emerged as a means of fostering experiential learning and students' psychosocial development, in contrast to traditional educational settings confined to the classroom (Waite, 2017).

The expansion of access to education and the gradual establishment of more inclusive educational policies in European countries in the 20th and 21st centuries were linked to broader socio-economic and cultural changes, leading to a reassessment of pedagogical approaches. The increasing need for an educational system that does not focus solely on knowledge transmission but enhances critical thinking, experiential learning, and adaptability led to a shift away from strictly structured, normative models toward more flexible and interactive forms of teaching (Waite, 2017). Research on the effectiveness of traditional teaching methods and the influence of theories such as Vygotsky's (1978) constructivist approach and Kolb's experiential learning contributed to the development of pedagogical practices that emphasize student participation, interaction with the environment, and the cultivation of skills essential in a knowledge-based society (Woller, 2008; Biesta, 2011). The distinction between formal, non-formal, and informal education began to be questioned as experiential and empirical learning became established as integral components of the learning process (Woller, 2008).

In the context of the educational shift of recent decades, education outside the strictly structured school environment has not merely been a deviation from traditional educational models but has evolved into a modern and innovative educational setting. The integration of nature into the learning framework reflects the fundamental principles of experiential learning and active participation, which are highlighted as essential for contemporary educational practice (Waite, 2017). The transition from traditional education models to modern education beyond the classroom is reinforced by the recognition of the importance of interdisciplinary knowledge and integrative learning. At the same time, the role of natural and social parameters in the holistic development of students is emphasized (Knight, 2013).

In contrast to traditional, rigidly structured school environments that confine the learning experience within the classroom, "modern outdoor schools," such as forest schools, promote the idea of a dynamic, open, and interactive learning environment. Contemporary educational systems do not focus solely on traditional teaching within the classroom but also incorporate learning in outdoor spaces as well as the application of new technologies and virtual environments. Students have the opportunity to interact directly with their natural surroundings, enhancing their autonomy, creativity, and critical thinking (Waite, 2017). The developmental and emotional needs of students, as shaped within the school community, are integrated into an educational model that aims for their holistic development (Gilbertson et al., 2022).

The connection of the learning process with the social and natural environment highlights the importance of interaction with it, as well as the need to adapt education to the specific needs of

students. Learning in the natural world offers an opportunity for authentic and experiential learning, fostering the development of key skills such as collaboration, resilience, and emotional intelligence (O'Brien, 2007). Students actively participate in activities that reinforce experiential learning, providing them with opportunities for personal development and strengthening their connection to the community and the broader social environment.

“Modern outdoor schools”, as educational models, incorporate the contemporary trend of an educational space that strengthens students' connection with nature and society while allowing for the structuring of a learning framework that promotes the multidimensional aspects of human development (Knight, 2013). In this way, the significance of the social and environmental dimensions in the educational process is highlighted, extending beyond mere academic progress to the development of well-rounded personalities.

The need for innovative educational environments that respond to the demands of a technologically advanced and socially complex era is a central issue in 21st-century educational policy. The renewed interest in educational models that utilize the natural environment is linked to the necessity of creating more flexible and multidimensional learning frameworks capable of addressing the challenges of an era of rapid technological advancements and increasing social complexity (Waite, 2017).

“Modern outdoor schools” emerge as an innovative educational model that integrates nature into the learning environment, enhancing experiential learning, the development of collaboration skills, and the cultivation of environmental awareness. The connection between learning and the natural environment enables students to develop a deeper relationship with the world around them, reinforcing their understanding of the importance of sustainability and ecological balance. At the same time, interaction with the natural environment fosters critical thinking, creativity, and the ability to solve complex problems (O'Brien, 2007).

The adoption of outdoor schools and other alternative educational models is directly linked to the trend toward interdisciplinary learning, as it integrates different knowledge domains into unified learning schemes, aiming to create a more comprehensive and synthetic understanding of the world. Interdisciplinary learning enhances the learning experience by encouraging students to develop skills that allow them to understand and solve problems across various fields. Additionally, it strengthens the sense of participation and responsibility (Knight, 2013).

Furthermore, the need for participatory and dynamic educational environments is once again at the forefront, as social and technological conditions demand new learning models adapted to societal and economic changes. Hybrid learning models, which combine traditional teaching with the use of outdoor spaces, offer new possibilities for creating a more flexible and participatory learning environment. In many European countries, such models have been adopted, creating a space where learning is not confined to classrooms but extends to the outside world. This expansion of educational spaces is linked to the need for the development of new forms of learning that reflect the rapid changes in the educational landscape (Gilbertson et al., 2022).

The integration of outdoor schools and outdoor learning into educational institutions in Europe strengthens the connection between school experiences and real life, promoting an approach that leverages both the natural and social aspects of the environment. Thus, “modern outdoor”

schools and hybrid educational models contribute to the restructuring of the learning process, making it more adaptable to the contemporary needs of students and society (Waite, 2017).

The need for educational systems that promote creativity, autonomy, and social skills arises from profound social changes and new educational expectations. Contemporary educational models do not solely aim at preparing students for the labor market but also at shaping them into active citizens with adaptability and critical thinking skills. “Modern outdoor schools”, responding to contemporary educational needs, continue to play a crucial role in promoting and establishing new pedagogical approaches.

5.0 STRATEGY OF THE NEW SCHOOLS IN THEIR MODERN FORM

“Modern outdoor schools” are a key component of contemporary efforts to shape innovative educational environments that are adapted to the demands of the 21st century and the necessity of adjusting educational practices to current social and environmental challenges. Modern societies require an educational system that integrates technology, contemporary pedagogical theories, and sustainable development while also promoting environmental awareness, social responsibility, and student collaboration. “Modern outdoor schools” embody these principles by transforming the natural environment into a living learning space where students gain experiential knowledge and develop skills that prepare them for life in an increasingly uncertain world that demands collaborative action.

The success of these educational programs lies in their ability to provide an education that is not confined to traditional teaching methods but instead encourages students to discover, create, and connect with their natural surroundings. This approach enhances interdisciplinary learning and critical thinking while addressing students’ need to engage with social and environmental concerns. At the same time, it enables them to utilize modern tools and technologies to analyze, understand, and influence the world around them (Schrittesser et al., 2014). In fact, education in outdoor settings can contribute to the development of essential skills such as environmental consciousness, collaboration, and sustainability, which are crucial for meeting the challenges of the 21st century. These competencies empower students to become active and responsible citizens in a globalized and ever-changing society (Adams & Owens, 2015).

“Modern outdoor schools” play a significant role in broader initiatives at the EU and international levels that seek to reinforce educational policy with a focus on sustainable development. Their connection to sustainability strategies, environmental education, and sustainability initiatives is a central aspect of modern educational reforms, as reflected in the policies and initiatives promoted by the European Union (European Commission, 2020).

The integration of outdoor schools with EU sustainability policies has gained increasing importance in recent years, as educational institutions seek to embed sustainability principles and environmental awareness into the learning process. Policies such as the EU Green Deal and initiatives for Education for Sustainable Development (ESD) promote students’ connection with the natural environment, recognizing nature as a living laboratory for learning. “Modern outdoor schools”, which embrace this philosophy, function as educational frameworks that foster concepts such as climate change, recycling, sustainable consumption, and responsible social practices. They also allow students to develop a practical understanding of sustainability

through direct interaction with the natural world and the application of sustainable practices in their daily lives (Waite, 2010). Through educational programs, children engage with natural phenomena firsthand, creating experiential learning opportunities that help them grasp the challenges facing the environment and the need for action (O'Brien & Murray, 2007).

Across Europe, the adoption of such educational approaches aligns with broader EU sustainable development strategies. The EU Green Deal acknowledges the need for structural change in education to enhance environmental awareness and prepare future generations for the challenges of the climate crisis. Sustainable development is now a core element of education policies aimed at fostering citizens who can actively participate in ecological, social, and economic sustainability (United Nations, 2015).

Modern outdoor education is not limited to direct contact with nature; it also incorporates technological advancements that support the learning process without replacing the experiential aspects of outdoor education. Technology, particularly artificial intelligence (AI), is increasingly being integrated into "modern outdoor schools" in ways that enhance learning while maintaining the hands-on experience of the natural environment. For example, plant and animal recognition applications enable students to interact with ecosystems and learn about biodiversity and ecological functions in real time by providing personalized information (Lynch & Thomas, 2024). Furthermore, the use of virtual and augmented reality (VR and AR) technologies allows students to link outdoor learning with scientific concepts and research, offering new perspectives for understanding the world around them (Bower et al., 2014).

At the same time, educational programs that incorporate artificial intelligence (AI) adapt teaching to the individual needs of students, improving the learning process and enhancing student engagement. Personalized learning, which is facilitated by AI, enables students to learn at their own pace and according to their personal preferences, thus fully realizing their potential (Holmes et al., 2019). These innovative technologies, combined with nature-based learning, create a dynamic educational environment that meets the contemporary demands of both education and sustainability.

The alignment of outdoor schools with EU sustainability policies, along with the integration of modern technological advancements, highlights the potential for harmonizing nature and innovation in education. "Modern outdoor schools" contribute to the development of environmental awareness and sustainable practices while simultaneously incorporating new technologies to enrich the learning experience and provide an education that is adapted to the needs of the 21st century.

6.0 CONCLUSIONS -CRITICAL REVIEW

The evolution of Open Air Schools reflects the continuous adaptation of education to the social, environmental, and technological conditions of each era. Their development did not follow a linear trajectory but was closely linked to broader trends in educational planning. The first outdoor schools, which emerged between the 19th and 20th centuries, were primarily associated with public health concerns, as urban areas posed significant sanitary risks for children. Their gradual integration into pedagogical programs highlighted outdoor education not only as a means of health protection but also as a dynamic field for reshaping learning approaches. From their initial role as a public health measure to modern approaches focusing

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on sustainable development and innovative educational practices, outdoor schools and, more broadly, education beyond the traditional school framework, embody the social and educational priorities of each era (Cunningham, 2005).

The need for fresh air and contact with nature served as the foundation for establishing outdoor schools, which, in their original form, aimed to protect students' physical health. However, the choice of outdoor learning was not dictated solely by medical reasons. It also reflected a social response to the growing inequalities characterizing urban societies, where access to healthy living conditions was not guaranteed for all children. As pedagogical theories and social priorities evolved, outdoor education acquired a multidimensional role, surpassing disease prevention to incorporate the development of critical skills, social inclusion, and sustainable education. These schools' functions expanded with the integration of pedagogical approaches that promoted experiential interaction with the natural environment, recognizing its importance in the holistic development of children. They did not remain merely a health protection measure but evolved into spaces where knowledge was approached through action, observation, and participation. The influence of theorists such as John Dewey and Maria Montessori was pivotal in shifting the educational process from passive knowledge reception to an experiential understanding of the world, where education was directly connected to practice and the environment (Grosvenor & Burke, 2008).

The evolution of outdoor education did not arise solely as a response to environmental and social challenges but also because of changes in pedagogical theories that emphasized nature as an integral component of the learning process. In European education, Open Air Schools marked an initial attempt to integrate outdoor learning into daily school life. However, the evolution of social conditions and technological advancements created new demands, redefining the relationship between education and both the natural and digital environments. Outdoor learning today is no longer limited to direct contact with nature but is enriched through technological applications such as virtual and augmented reality, interactive systems for recognizing the natural world, and artificial intelligence algorithms that adapt the learning environment to each student's needs. These technological advancements do not replace direct contact with nature but expand the experiential dimension of learning, providing access to knowledge even in settings where physical presence is not feasible (Biesta, 2011).

Modern outdoor education, leveraging the opportunities provided by new technologies, allows students to experience the "real" world around them, whether it is the natural environment or other spaces that are not directly accessible. The integration of outdoor learning with technology and artificial intelligence is not limited to merely representing the natural world but enhances students' ability to understand and interpret it in an experiential and realistic way. This dynamic approach opens new pathways for the educational process, making modern outdoor education a tool for understanding the world. At the same time, it strengthens experiential learning and the development of critical thinking among students.

The contemporary challenges facing European education include climate change, technological advancements, and the need to develop interdisciplinary skills. The policies of the European Union, through initiatives such as the Green Deal and Education for Sustainable Development, promote outdoor education as an integral part of school life, aiming to cultivate attitudes that respond to environmental and social challenges. The expansion of outdoor learning is not

limited to physical experiences but incorporates multidimensional approaches connected to technology and sustainability. Modern educational policy highlights interdisciplinary learning and the connection between theoretical knowledge and practical application, integrating schools such as forest schools and sustainable educational centers into the learning process (Waite, 2010).

The homogenization that characterizes globalized education reinforces the need for a strategy that goes beyond the close connection to the labor market and places active participation and environmental responsibility at its core. The integration of technology into outdoor education has been presented as a means of broadening the learning experience; However, the increasing reliance on digital media raises questions about the detachment from physical experience and the substitution of experiential relationships with the environment. Digital technologies and artificial intelligence create new fields of educational interaction, but they also pose the risk of shifting focus from direct experience to a mediated and often sterile representation of the natural world. Virtual tours and interactive applications cannot substitute for physical presence, and the increasing mediation of technology makes it uncertain whether outdoor education can maintain its role as a tool for connecting with the world. In light of these critical issues, the educational process must reassess the use of technology, ensuring that physical experience remains an integral part of learning rather than being replaced by virtual simulations that may reinforce detachment from the environment rather than alleviate it (Holmes et al., 2019).

The evolution of Open Air Schools holds a central place in European educational thought, as it incorporates the fundamental principles of European policies on sustainable development and education for sustainability. The development of outdoor schools represents a significant contribution to the European educational vision, which seeks a deeper integration of environmental consciousness and the strengthening of social responsibility. Europe aims to complete a transition toward an educational system with a greater environmental focus, aligning with broader European policies for fostering a society with higher levels of social and environmental responsibility (Waite, 2017).

The expansion of the perception of nature and technology in the educational process offers students new perspectives, redefining their relationship with the environment and contemporary society. Outdoor schools, in all their transformations, remain a testament to the constant need to adapt educational practices to the ever-changing social, environmental, and technological conditions. Education in Europe is not defined by stasis, but reflects the intense negotiation of social, economic, and technological currents. The formulation of educational policy requires critical thinking, flexibility, and a vision for the future to meet the challenges of the 21st century while remaining faithful to the human-centered values that underpin learning. From the early steps of outdoor schools to their modern implementations, they retain the energy and dynamism of a living example: how education continuously adapts to social and political changes, shaping our future.

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