

# F. NACHTEGALL AND GYMNASTICS IN DENMARK: ASCERTAINMENT HISTORY IN THE EDUCATIONAL SYSTEM

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**Abstract** The relevance of the study is due to the need to improve the quality of training of future physical education (PE) specialists. Knowledge of the legacy of outstanding teachers is the basis for the formation of professional competencies of PE specialists. The experience of F. Nachtegall, the Scandinavian educator of New Times, the main stages of his activity on the introduction of PE in education, their content and results became an impulse to recognize the importance of physical and moral health of young people as the main object of attention of authorities, benefactors and society during the period under study. The educational reforms initiated by him ensured the availability of PE to all young people, promoted the education of healthy, industrious, useful citizens and led to the institutionalisation of PE. Founding Europe's first gymnastics club and a private gymnastics school for different classes, organising and running a school for training civic gymnastics teachers, and founding a gymnastics college - these are just a small part of Nachtegall's multifaceted activities. Nachtegall's practical experience had an enormous influence on the creation of the organisational, programme, control and methodological foundations for the formation of didactic knowledge on the teaching process of PE.

**Key words:** humanist, New Time, system of gymnastics, schools, physical exercises

## Introduction

Globalization and informatization of the modern world have increased the role and importance of the personality of the teacher, the necessity of continuity and success of their personal professional development and intensified the search for ways to modernize professional education. The study of the historical experience of the development of physical education (PE) and sports can effectively contribute to the optimization of the training of future specialists in PE and sports, the formation of their professional knowledge and the mastery of socio-historical experience. A deep understanding of history helps in learning methodological skills in the field of methods of knowledge formation, sets of techniques and methods aimed at instilling value attitudes towards PE and sport. Currently, PE is an integral component of the compulsory school syllabus, is naturally recognized as a regular school subject. Although not overtly contested as a subject of the curriculum, it is unfortunately not considered a core school subject, a performance not prioritized by students unlike mathematics, physics or the native language. Underestimating the importance of physical education in the minds of modern society leads to an unsatisfactory state of physical, spiritual and moral health of the society (Shephard, 2015). The reasons for this are insufficient awareness of graduates of higher educational institutions of physical culture about the cultural and historical

foundations of physical culture and sports, their readiness for the implementation of educational activities. It is important to teach students in their future professional activities, meaningful use of the accumulated pedagogical experience, which provides an opportunity to rationally solve modern problems of school PE.

Publications in recent years illuminate various aspects of European PE and sports history. Thus, studies have recently been published that highlight and describe the characteristic features of various concepts of PE that emerged in the 19th century (Solytk, 2017). The evolution of national gymnastics systems, their mutual influence and competition is discussed (Cochet, 2012; Roper, 2021). There is a cause-and-effect relationship between politics, ideology, religion, and particularities of the introduction of organized PE in the 19th century (Bonde, 2017; Roper, 2021; Tröhler, Westberg, 2017).

PE as a new school subject in the nineteenth century, the creation of PE institutions, concepts and theories that influenced modern physical culture is covered in the works of Krüger, Hofmann (2015), Roper (2021). As previously reported in the literature, gymnastics was important for almost all social groups and genders in Europe during the 19th century (Ottosson, 2010; Wikström-Grotell et al., 2013). Most of the early studies and current work focus on the detailed study of the characteristics of the creation and development of the Swedish and German gymnastics systems, as well as the development of the sport (Melnick, 2016; Naul, Scheuer, 2020; Pfister, 2003). Characteristics and history of the formation of Turnen's gymnastics by F.L. Yan has been demonstrated by many authors (Kaimakanis et al., 2008; Krüger, R. Hofmann, 2015; Pfister, 2003; Reicher, 2020). P. H. Ling's genesis and evolution of gymnastics and his contribution to the development of kinesiology and physiotherapy are comprehensively considered (Lundquist Wanneberg, 2018; Melnick, 2016; Pfister, 2003). The educational methods of Swedish gymnastics for girls in the mid-nineteenth century have been analyzed in terms of the influence of gender representations (Leonard, 1904a; Westberg, 2018; Wikström-Grotell et al., 2013; Živanović, Milošević, 2017). The development of an educational ideology of athleticism in the late nineteenth century is discussed in terms of British interest in sport as an imperial tool ('Physical Education in State and Private Schools in Britain in the Late-Nineteenth and Early-Twentieth Centuries', 2010). A series of recent studies have covered the principle ideas of British teachers T. Arnold and E. Tring in 'context of school physical education ('Physical Education in State and Private Schools in Britain in the Late-Nineteenth and Early-Twentieth Centuries', 2010; 'Public Schools in Britain in the Nineteenth Century', 2010).

At the beginning of the 20th century, an American historian of physical education Fred Eugene Leonard analyzed the main milestones of F. Nachteggall's pedagogical activity, noted its importance for Denmark and Europe and characterized him as a leader in the field of national gymnastic education in the 19th century (Leonard, 1904b, 1918, 1923). In 1920-1930, the outstanding Polish scientist Eugeniusz Witold Piasecki wrote about the successful experience of F. Nachteggall in the organization of university physical education (Piasecki, 1929; Piasecki, 1930). Nonetheless, subsequent publications of the second half of the 20th century covered F. Nachteggall's activities in the field of education mainly in connection with his role in the creation of Europe's first military and civilian gymnastic institute (Boigey, 1932; Kun, 1984; Ljunggren, 1996). In the 1990s Scandinavian scientists studied in more detail aspects of the integration of F. Nachteggall's gymnastics in the school curriculum, emphasizing its influence on the formation of patriotism and Danish national identity (Eichberg, 1993, 1995; Hoffmann, 1993; Trangbæk, 1996a). The publications drew attention to the innovative nature of F. Nachteggall's gymnastics, the humanistic orientation towards the development of the bodily and moral potential of young people (Eichberg, 1993; Møller, 1996; Naul, 1998).

However, his activities in the early 19th century were of particular interest in promoting physical education at all levels of learning and in different types of educational establishments. This issue, in the context of the cultivation of physical education in education, is underexplored and requires further research.

We assume that studying the legacy of the outstanding Scandinavian teachers of the 19th century on the introduction of physical education into education will reveal the continuity of generations in this area and contribute to a deeper understanding of the trends in the development of modern physical culture.

The purpose of the research is to analyze, generalize and systematize the experience of Scandinavian New Time educator F. Nachtegall, to characterize the main stages of his activity regarding the introduction of physical education into education, their content, and results.

## Research material and methods

Analysis, synthesis, generalization and interpretation of scientific, archival literature and Internet materials on this issue were carried out. An axiological methodological approach was used, which made it possible to highlight the valuable content in the object under study, namely, the activity of F. Nachtegall was analyzed. The research tasks were: the introduction into scientific circulation of previously little-known facts of the facet of life and practical activities of F. Nachtegall, the study of his social and professional ties, ethic and worldview that influenced the establishment of physical education in the educational system of Denmark. The main source for the topic of our study was the archival collection of the Royal Danish Library. Old historical texts, in particular those by F. Nachtegall, are digitized and searchable. Since the texts taken as the basis were written in nineteenth-century Danish, the English translation was made as faithful as possible to the original. Materials from several leading scientific and pedagogical periodicals were used, including *The International Journal of the History of Sport*, *Nordic Journal of Educational History*, *Scandinavian Journal of History*, etc., as well as the work of leading researchers Leonard, Piasecki, Kun (Kun, 1984; Leonard, 1904b, 1918, 1923; Piasecki, 1929).

## Results and discussion

The inspiration for the educational reform in Europe, which united the physical and cognitive education of children, was Jean-Jacques Rousseau's novel «*Emile, or On Education*». Educational reformers in Germany, inspired by the novel, created schools for different grades of children in the late 18th century called Philanthropinum (Eichberg, 1995; Ljunggren, 1996). In these schools, various outdoor activities including gymnastics were organized as a compulsory part of the school curriculum. It should be noted that the concept of «gymnastics» in the New Time combined exercises with and without apparatus, such as running, jumping, wrestling, skiing, skating, defense and attack techniques, vaulting (exercises and jumps) on table and horse, pole and wall climbing, maintaining balance on ropes and trees (Leonard, 1923).

Enthusiasts-philanthropists saw gymnastic exercises as a means of physical education, the purpose of which was to form the character and intellect of future citizens.

In the future, the difficult political conditions in Europe in the 19th century, due to important historical events (the emergence of the Austro-Hungarian monarchy, the Napoleonic wars, and the strengthening of the German states) also forced the governments of Western European countries to positively change their attitude towards the idea of organizing PE for the younger generation (Cochet, 2012; Krüger, Hofmann, 2015).

The most widespread, in the first decades of the 19th century, was the humanistic concept of physical activity (PA) outlined in the works of Johann Christoph Friedrich Gutsmuths. J.C.F. Gutsmuths (1759–1839), a prominent teacher at the Philanthropist's School in Schnepfenthal, Germany, in «Gymnastik für die Jugend» (Gymnastics for Youth), presented a system of exercises based on natural science such as games, climbing, balancing, jumping, running, throwing, swimming, skating, exercises aimed at improving perception (Lundquist Wanneberg, 2018; Živanović, Milošević, 2017). He identified two main areas of gymnastics: natural, intended for healing, and artificial, whose movements aim at beauty and performance and not at function (utilitarian and non-utilitarian gymnastics) (Leonard, 1923).

The socio-political events taking place in Europe had a huge impact on Denmark, and the national and philanthropic inspirations of education were the vital prerequisites for the introduction and establishment of school gymnastics. The goal of educational reform became the government's desire to educate good Christians, patriots, and useful citizens of the kingdom (Hoffmann, 1993).

The outstanding European academic Vivat Victorius Franciscus (Franz) Nachteggall (1777–1847) became one of the disciples of J.C.F. Gutsmuths (Eichberg, 1993; Hoffmann, 1993; Leonard, 1923). From childhood, Franz Nachteggall was interested in various physical activities and engaged in fencing and vaulting. Gutsmuth's study of «Gymnastik für die Jugend» determined his life's work (Kun, 1984; Leonard, 1918).

Passion for gymnastics and understanding of its importance for the formation of a system of values through the development of bodily organization prompted F. Nachteggall to found the world's first gymnastic club («Gymnastische Gesellschaft») in Copenhagen in 1798 and a private gymnasium in 1799, the first institution at that time where students were engaged exclusively in physical training in open space. Demand for gymnastic classes increased, and between 1799 and 1803, the number of Nachteggall's students increased from 5 to 150 (Nachteggall, 1831). One of them was P. H. Ling, who later began to develop in Sweden what he had learned from F. Nachteggall (Boigey, 1932; Leonard, 1904a; White, 1887). Public sympathy and the popularity of practical classes among the young prompted him to promote physical education with great zeal. In December 1800, F. Nachteggall created The Society for the Propagation of the Art of Swimming, whose numerous members organized annual swimming competitions and encouraged the best swimmers with cash prizes (Leonard, 1918; Nachteggall, 1831).

Pedagogical career F. Nachteggall continued as a teacher of gymnastics at the private school Copenhagen Philanthropin in 1799. In parallel with practical activities, F. Nachteggall from 1802 to 1804 lectured on the history and methods of physical education for everyone to awaken more interest in this part of pedagogy (Nachteggall & Mønster, 1802). Most of the students at Blagaard Seminary attended Nachteggall's lectures, and undergraduate students participated in practical exercises with exercise equipment on the school premises. The Crown Prince Regent (the future King Christian VII) personally attended the classes several times and, recognizing F. Nachteggall's ability, appointed him professor of gymnastics at the university in 1804 (Nachteggall, 1831). We believe that his painstaking work began from this moment with the aim of legislatively fixing the obligatory nature of physical education in the form of gymnastics in all types of educational institutions.

According to the royal decree in 1804, F. Nachteggall established a military gymnastics institute (for the training of gymnastics instructors in the army and navy). At first, gymnastics was taught for two hours a day and the number of students ranged from 60 to 70. The three-year course included the study of theory and practical exercises and ended with an exam (Nachteggall, 1831).

In 1805, F. Nachteggall published the book «Instruction i Gymnastikken for de Lehrere som er ansatte ved Kavalleriets og Infanteriets Unterofficer - og Exerceerskolen» (Nachteggall, 1831). The book is structured in a question-and-answer format and includes sections on exercises to develop balance, flexibility and agility, as well as specific running and swimming exercises. It is interesting that in the book, for the first time for pedagogical gymnastics, it was proposed to perform individual and group acrobatic exercises, their types, and equipment necessary for classes are described. The definition of gymnastics in the Introduction is given as the art of exercising and training the body to make it fitter, stronger, more flexible, lighter, faster and stronger. In addition, F. Nachteggall emphasized the significance of gymnastics as a remedy of healing and hygiene. Typical mistakes made by students were explained with ways to correct them and recommendations regarding the order in which the exercises are performed. The final chapter of the book describes the responsibilities of a gymnastics teacher. For example, a teacher should set an example for students, be being physically fit, considerate about the students' abilities and health, and by being polite and tactful (Nachteggall, 1805).

A little later, in 1806, Nachteggall developed a plan for the mandatory teaching of the theory and practice of gymnastics, followed by an examination at the end of the course, thus laying the foundation for the educational method of teaching this discipline.

In March 1807, together with the seminary director, he submitted to the Commission to Improve the Management of Danish Schools («Den Store Skolekommission») a proposal to introduce physical exercise as compulsory education at Blagaard Seminary. To meet the needs of primary and general schools, a school was established in 1808 to train civilian gymnastics teachers. The established department was neither exclusive nor independent, as civilians were simply allowed to study gymnastics in a military institution. From 1809, on his initiative, gymnastics became compulsory in gymnasiums and secondary schools (Leonard, 1918; V. V. F. Nachteggall, 1831). Nachteggall organized the training of students sent from non-resident teachers' colleges («Seminarier»), who showed special inclination and ability towards gymnastics, for methodology of teaching gymnastics and various recreational exercises (Eichberg, 1993; Leonard, 1918; Nachteggall, 1831). During six years of operation of this civic institute, 31 students received diplomas as gymnastics teachers and 10 of them began teaching gymnastics in Danish teachers' colleges (Leonard, 1923; Piasecki, 1929).

It should be noted that in the first decade of the 19th century, in Danish society, a large number of prominent representatives of the bourgeoisie and authorities, physical education was regarded as a tool for reproducing national identity and patriotism, forming unity and rallying the nation, a tool for forming the military- applied physical readiness of young people to defend the fatherland. The catastrophic consequences of Denmark's participation in the war between France and England, the economic difficulties caused by the loss of Norway in 1814, and the overall experience of the war showed the army to use gymnastics to adapt to changes in military technology and strategy (Hoffmann, 1993). Accordingly, the expediency of universal military training for youth as an essential part of education pushed philanthropic considerations into the background and contributed to the introduction of military applied gymnastics in schools and physical training in the Danish army became a major force in implementation of gymnastic education. During these difficult times for Denmark, F. Nachteggall sought to support the gymnastic movement in all available ways. Probably, supplementing school gymnastics with military applied exercises, he fulfilled the requirements of the king and the government. At the same time, the Danish government followed a systematic approach of introducing gymnastics into the school curriculum and not limited to the training of gymnastics teachers.

An ordinance on the general school system in Denmark on 29 July 1814 legalized the introduction of school gymnastics (Nachtegall, 1831). Gymnastics was made compulsory for both boys and girls. Every teacher was supposed to give daily lessons to his students about gymnastic exercises like running, jumping, swimming and military exercises outside school hours and every school was supposed to have necessary equipment and an area of 3200–4800 square feet (Leonard, 1923). Students of elementary classes had to study 3 hours a week, senior classes – 2 times a week, every year from June 1 until the beginning of autumn vacation. In summer, the children had to perform swimming exercises. The regulation suggests that gymnastic exercises should be selected which could contribute most to the development of strength, coordination and ability needed by an individual in general and the working class in particular. During these years, F. Nachtegall conducted practical classes with students. To popularize swimming, according to his suggestion, classes were organized with military instructors who taught long distance swimming, diving, rescue techniques for drowning and swimming in uniform and with weapons. It was F. Nachtegall who suggested the use of cork belts as an aid in teaching swimming to beginners. He arranged for the provision of bathing suits for the learners as well (Nachtegall, 1831).

Foreign policy and economic conditions led to the expansion of the purpose of gymnastics to the training of future soldiers. F. Nachtegall supported the idea of a national educational function of gymnastics and included military-applied exercises in pedagogical (and especially school) gymnastics, the reason why the teaching of this discipline was legally restricted to boys only, the future recruits. As F. Nachtegall wrote its main objective was to correct the bodily posture of the farmer, to develop skill and physical skills that will fit him, with desire, skill and courage to fulfill his future destiny as a defender of the fatherland (Nachtegall, 1831). Let us emphasize that it was the political situation in Denmark that forced Nachtegall to focus more on the military content of school gymnastics and changed the main vector of his initiative for the physical education of students.

However, the results of the implementation of this law were much as expected. Many schools in Copenhagen introduced physical exercise into the curriculum, but military gymnastics met with resistance in rural schools. The reluctance of Denmark's rural population to take up gymnastics was probably due to the fear that gymnastics could replace traditional, folk physical education with military-applied exercises.

In 1816 the Civilian Institute almost ceased to function due to economic depression, but the Military Institute continued to provide higher gymnastic education until 1898. Gymnastics became a required subject in Seminaries (teachers' colleges) in 1818, and in 1821 Nachtegall was appointed to the position of «Gymnastikdirektor» (Director of Gymnastics) and commanded both civil and military gymnastics throughout the country.

In 1827, at Nachtegall's suggestion, the king ordered the establishment of a gymnastic college («Normalskole für Gymnasticken») where teachers from public and private schools could study gymnastics. A gymnastics school for teachers was opened in January 1828 and 200 teachers were trained there that year (Leonard, 1923).

It should be noted that Nachtegall's operations took place under rather difficult circumstances. On one hand, the state saw the potential of gymnastics as physical training for peasants for the defense of the country. On the other, peasants hated military service and did not give up their own physical culture, which was a symbol of their freedom. At the same time, economic difficulties prevented the setting up of sites and the purchase of equipment everywhere, and a general understanding of the importance of school gymnastics as an educational program was not yet established among the majority of the population.

According to the Royal Decree of June 25, 1828, the introduction of three lessons a week for the teaching of gymnastics to boys and youth in all schools of the country began immediately. In the same year, «Lærebo

i gymnastik for almue- og borger-skolerne i Danmark» was published for use in secondary and comprehensive schools, one of whose authors was F. Nachtegall (Hoffmann, 1993; Nachtegall, 1828). Thus, the Danish was the first European government to allow the publication of a school textbook on gymnastics. 4000 copies of the textbook were sent to all Danish schools at the King's expense. Teachers were given the responsibility of conducting gymnastics classes in government schools and the school authorities were given the information about the degree of difficulty of exercises, the standard of gymnastic grounds, the possibilities of swimming lessons and instructions were given to ensure necessary qualifications of teachers. The rules of gymnastics formulated by F. Nachtegall, indicated that a gradual transition from lighter to more complex and from less to more strenuous exercises should always be observed, it was proposed to widely use exercises to develop agility and flexibility, jumping, and acrobatic exercises. Therefore, gymnastics was included in the practice of educating bourgeois youth and peasant youth, who were to acquire the necessary military-applied skills in state institutions – general education and recruiting schools.

In 1934, F. Nachtegall prepared and published «Regulativ for den gymnastiske Undervisning ved de lærde Skoler i Danmark». In particular, paragraph 4 suggests that, if suitable facilities are available, at least two hours a week should be devoted to physical exercise throughout the year. However, it was added that certain exercises should not be performed during winter and hot summer days (Nachtegall, 1834). In 1836, F. Nachtegall inspected the seminaries and found a lack of sports equipment and some incorrect teaching methods, prompting him to organize a summer course for gymnastics teachers in 1837.

In 1838, at the suggestion of F. Nachtegall, an experimental school for girls was established, in which thirty pupils, aged six to fifteen, began to study three lessons a week. The success of this experiment made it possible to create a regular gymnastics school for women. In the summer of 1839, gymnastics classes with girls were opened in Royal Navy schools, and many other schools in Copenhagen took similar action (Leonard, 1918; Trangbaek, 1996b).

In 1842, F. Nachtegall handed over the leadership of the Military Gymnastics Institute to Niels Georg La Cour, but remained the director of gymnastics in Denmark until his death. After the death of F. Nachtegall, the development of physical education in Denmark slowed down. Unfortunately, La Cour could not effectively continue the work of F. Nachtegall, starting in 1859, the military began to be mainly involved in the teaching of gymnastics, who sought only to achieve the correctness of the exercises, so students began to perceive gymnastics as a means of punishment. According to Leonard (1918), his harshness and tactlessness during inspections caused a feeling of irritation and indignation among the school authorities.

After the defeat of the Danes in the 1864 war with Prussia and Austria, measures were again taken to revive general interest in national physical education. In shooting clubs, young men in military service had the opportunity to learn how to handle weapons and do gymnastics. Initially, exercise was done outdoors and with little or no equipment, but in 1871 the first dedicated gymnasium was built in Riesling (Fyn). By 1897, there were about 300 such buildings and 10,000 young people were engaged in gymnastics. Traditional classes were supplemented with exercises from Swedish and German gymnastic systems, exercises on horizontal bars and parallel bars, rings and trapeziums were introduced, and teacher training was reorganized (Eichberg, 1995; Hoffmann, 1993). As for women's gymnastics, the work of F. Nachtegall was continued by Professor A. G. Drachman, who believed that exercises for girls should be aesthetic and different from exercises for boys, and P. Petersenf, who did not adhere to any naturalistic principles for exercises, except for their external forms (Leonard, 1918).



As part of the revival of physical culture in Europe, this study demonstrates that the gymnastic movement in Denmark was not an isolated phenomenon. The main ideas of physical education were developed in Europe in the 19th century by teachers of different countries, and each of them, with their contribution to the field of education, influenced the views and activities of others, contributing to mutual enrichment and development.

These results go beyond previous reports and show that Nachteggall's activities have had an impact on democratic education, specifically in the areas of physical culture within the learning process, the creation of school curricula, and the establishment of guidelines and standards for PE. The gymnastics institutes designed by Nachteggall became the first centers in the world for the training of professionals in PE, and gymnastics became one of the elements of the rationalization of the lifestyle and the strengthening the place of PE in society.

## Conclusions

Our results shed new light on the state-political, socio-economic, and cultural-historical prerequisites for the introduction of physical education in the Danish education system during the study period. The theoretical and practical experience of F. Nachteggall is generalized and systematized, the main stages of his activities on the introduction of physical education into practice, their content and results are analyzed, and their humanistic orientation is proved. Expressing the national aspiration for unity and independence of the Danes, F. Nachteggall, as a supporter of the idea of harmonic development of personality, including mental, physical, and moral education, considered gymnastics an integral part of education, was convinced of the necessity of rational combination and searching for integrative forms of physical and military-applied exercises for the education of youth. The practical work of Nachteggall on the introduction of gymnastic exercises in obligatory educational programs promoted the fixation of physical training in the national school program of Denmark, became the impulse for the institutionalization of physical education and had a significant influence on the development of school physical training in many countries. While progress has been gradual, it has not been inconsiderable. A legal basis was created that established physical education as a school subject and gymnastic institutions were founded. Furthermore, it was Nachteggall who initiated the methodological and normative provision of school physical education.

Denmark was the first European country to introduce physical education as an indispensable part of the school studies and to train teachers in this subject, offering systematic training in gymnastics theory and methodology.

The results of the study can be used in the educational process of higher educational institutions that provide training, retraining, and professional development of specialists in physical education. Further research will focus on the historical record of the progression of school physical education in the 20th century in Europe and the world.

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