

**BODILY AESTHETICS IN ART AND EDUCATION: THE CONCEPT OF THE IDEAL BODY FROM RENAISSANCE PAINTING TO MODERN SPORTS AND PHYSICAL EDUCATION**

***ESTÉTICA CORPORAL NA ARTE E NA EDUCAÇÃO: O CONCEITO DE CORPO IDEAL DA PINTURA RENASCENTISTA AOS ESPORTES MODERNOS E À EDUCAÇÃO FÍSICA***

***ESTÉTICA CORPORAL EN EL ARTE Y LA EDUCACIÓN: EL CONCEPTO DE CUERPO IDEAL DESDE LA PINTURA RENASCENTISTA HASTA LOS DEPORTES MODERNOS Y LA EDUCACIÓN FÍSICA***



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**ABSTRACT:** This article investigates how bodily aesthetics evolved from an artistic ideal into an ideological and educational construct, interpreting this transformation through the combined lenses of art history, sport sciences, and physical education. The theoretical framework integrates Panofsky's iconological approach, Foucault's notion of the "disciplined body," and Bordo's feminist critique of corporeality to analyze how aesthetic ideals are produced, transmitted, and internalized. By bridging art historical analysis with the sociology of sport, performance, and pedagogy, this study proposes an interdisciplinary reading of bodily representation as a site of cultural and educational power. Particular attention is given to physical education as a key mechanism through which ideal body norms are taught, assessed, and normalized across historical periods. Ultimately, the "ideal body" is reconsidered not as a static form of beauty, but as a historically contingent construct shaped by artistic traditions, performance cultures, and pedagogical systems through which modern societies regulate, aestheticize, and internalize discipline.

**KEYWORDS:** Bodily aesthetics. Art. Education. Physical education.

**RESUMO:** *Este artigo investiga como a estética corporal evoluiu de um ideal artístico para um constructo ideológico e educacional, interpretando essa transformação por meio de uma abordagem integrada entre história da arte, ciências do esporte e educação física. O referencial teórico articula a abordagem iconológica de Panofsky, a noção de "corpo disciplinado" de Foucault e a crítica feminista da corporeidade de Bordo, a fim de analisar como os ideais estéticos são produzidos, transmitidos e internalizados. Ao articular a análise da história da arte com a sociologia do esporte, da performance e da pedagogia, o estudo propõe uma leitura interdisciplinar da representação corporal como um espaço de poder cultural e educacional. Destaca-se o papel da educação física como mecanismo central de ensino, avaliação e normalização dos ideais corporais ao longo da história. Conclui-se que o "corpo ideal" é um constructo histórico, moldado por tradições artísticas, culturas performáticas e sistemas pedagógicos.*

**PALAVRAS-CHAVE:** *Estética corporal. Arte. Educação. Educação física.*

**RESUMEN:** *Este artículo investiga cómo la estética corporal evolucionó de un ideal artístico a un constructo ideológico y educativo, interpretando esta transformación mediante un enfoque integrado entre historia del arte, ciencias del deporte y educación física. El marco teórico articula el enfoque iconológico de Panofsky, la noción de "cuerpo disciplinado" de Foucault y la crítica feminista de la corporeidad de Bordo, con el fin de analizar cómo los ideales estéticos se producen, transmiten e internalizan. Al vincular el análisis de la historia del arte con la sociología del deporte, la performance y la pedagogía, el estudio propone una lectura interdisciplinaria de la representación corporal como un espacio de poder cultural y educativo. Se destaca el papel de la educación física como mecanismo clave en la enseñanza, evaluación y normalización de los ideales corporales a lo largo del tiempo. Se concluye que el "cuerpo ideal" es un constructo histórico, moldeado por tradiciones artísticas, culturas performativas y sistemas pedagógicos.*

**PALABRAS CLAVE:** *Estética corporal. Arte. Educación. Educación física.*

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## INTRODUCTION

The human body has existed in art history not only as a visual theme but also as a cultural, philosophical, and ideological representation. In every period, the concept of the “ideal body” has reflected the values, knowledge system, and understanding of humanity of its era. One of the most striking differences between the Renaissance and the modern era is that the body’s meaning shifted from being a sign of divine order to becoming a sign of performance, productivity, and self-discipline. The aim of this study is to compare the concept of the “ideal body” formed in Renaissance painting with the understanding of “physical perfection” shaped in modern sports aesthetics, thereby revealing the underlying cultural, aesthetic, and power dynamics of this transformation. This topic is significant not only from an art historical perspective but also from a sociocultural one, as body aesthetics determine how humans position themselves in the world in every era. During the Renaissance, the body was seen as the measure of the universe; in the modern era, the same body has been reduced to the measure of social production, consumption, and competition. This transformation has shaped not only the representation of art but also the way humans self-view.

However, the “ideal body” is not only represented in paintings, sculptures, and contemporary sports imagery; it is also taught, learned, and reproduced through education (Schubring et al., 2021; González-Calvo & Gerdin, 2023).

From Renaissance workshops and academies that trained artists through anatomy and proportion, to contemporary institutions that cultivate athletic performance through physical education (PE) curricula, the body functions as a pedagogical medium through which cultural values are transmitted (Sealy & Lee, 2019; Shilling, 2021).

In this sense, bodily aesthetics operate not merely as a visual regime but as an educational framework that shapes what counts as a “proper”, “healthy,” “successful,” or “disciplined” body. Placing bodily aesthetics at the intersection of art, sport, and education allows us to examine how ideals migrate from images into practices—into training routines, classroom norms, assessment standards, and self-perception (Barker et al., 2022; Çeviker et al., 2023; Voelker et al., 2024).

Erwin Panofsky (1953) defines Renaissance art as “a period in which human beings was aligned with the divine order within nature.” According to him, the discovery of perspective is an aesthetic expression of man’s desire for dominion over the cosmos. In Leonardo da Vinci’s drawing of the Vitruvian Man, the human body becomes a mathematical representation of God’s universal proportions. Kenneth Clark (1956), on the other hand, interprets Renaissance nudity

as “the rebirth of the body as a sacred form.” In Michelangelo’s David statue, the muscle structure and posture are not only physical but also indicators of moral and spiritual strength.

This Renaissance investment in proportion, harmony, and anatomical knowledge also carried an implicit educational claim: the cultivated body was a sign of cultivated reason and moral order (Tekin, 2023). The teaching of drawing, anatomy, and proportion did not simply aim at artistic skill, but at forming an ideal human subject whose body mirrored a rational cosmos (Panofsky, 1953; Clark, 1956). Thus, the “ideal body” was not only depicted—it was pedagogically constructed through disciplinary training and institutional transmission (Li et al., 2017).

In contrast, Michel Foucault (1977) defines the body of the modern era as “the field of discipline.” The body is no longer the object of an external order, but rather of internalized surveillance. Susan Bordo (1993) also argues that the ideals of a “fit,” “healthy,” or “athletic” body in modern culture are actually forms of bodily control imposed by the capitalist order. In this context, modern sports aesthetics represent a seemingly liberated body, but in reality, reproduce normative codes of beauty and power.

Crucially, contemporary physical education and sport training environments institutionalize these norms by translating bodily ideals into measurable educational outcomes (e.g., performance tests, endurance targets, body composition expectations, and behavioral discipline) (Aasland & Engelsrud, 2021; Paterna et al., 2021; Quennerstedt et al., 2024; Derelioğlu et al., 2025). Through curricula, assessment, and routine practice, PE becomes one of the primary sites where “disciplined bodies” are produced and where aesthetic norms are normalized as health, success, and self-management. Therefore, the ideal body in modernity should be analyzed not only as an image circulated through media and sport culture, but also as an educational object shaped by pedagogy, evaluation, and institutional authority (Modell, & Gerdin, 2021; Barker et al., 2022; Gray et al., 2022).

Therefore, this research examines the process from the Renaissance’s divine proportion aesthetics to the modern era’s performance aesthetics, seeking answers to the following questions: Around which cultural values did the concept of the ideal body take shape in these two periods? How has the relationship between aesthetic taste and power influenced bodily representation? How does the difference between artistic works and sports aesthetics transform people’s perception of themselves? Additionally, how do educational institutions—particularly physical education—mediate this transformation by teaching, standardizing, and legitimizing certain bodily ideals over others? Based on these questions, the study proposes the following

hypothesis: “While the ideal body concept in the Renaissance represented humanity’s belonging to the divine order, modern sports aesthetics represent the individual’s belonging to the social and economic order.” Extending this hypothesis, the study further argues that education functions as a key mechanism through which these ideals are transmitted: Renaissance ideals were sustained through artistic-academic training, whereas modern ideals are reproduced through physical education, sport pedagogy, and performance-oriented institutional practices. This hypothesis combines an aesthetic trajectory in art history with sociocultural transformation. Thus, the study aims to interpret the concept of bodily aesthetics in art and education as both a historical change in form and an ideological transformation.

### **THE IDEAL BODY CONCEPT IN RENAISSANCE PAINTING**

The Renaissance period was an era in which the human body was rediscovered, and anatomy, mathematics, and aesthetics converged on the same platform. During this period, artists considered the human body not merely as a visual object, but as the earthly reflection of the order of the universe (Burke, 1998). Humans were seen as God’s most perfect creation; therefore, understanding the body was a way of understanding divine laws. Combined with Renaissance humanist thought, this understanding transformed art from a means of reaching God into a way for humans to grasp their own perfection.

One of the works that most powerfully embodies this ideal is Michelangelo’s statue “David” (1501–1504). Standing 5.17 meters tall and carved from a single block of Carrara marble, this statue became a symbol of freedom and resistance for the people of Florence. Michelangelo chose not to depict David’s moment of battle with Goliath, but rather the moment of preparation for that battle; the figure conveys a tension before action, a mental intensity. The contrapposto pose creates a dynamic balance by shifting weight to the right leg. The muscles, veins, and facial features are rendered with such realism that they appear almost alive. This physical strength is an expression not only of the muscular system but also of the inner resolve of the human spirit (Clark, 1956). David is a monument not to divine will but to human will. Michelangelo’s idea of “revealing the spirit within the marble” reflects the essence of Renaissance aesthetics: the search for spiritual beauty in matter (Eco, 2004).

The “David” statue is a large-scale male figure carved from white marble. The work captivates the viewer with its three-dimensional perception and play of light and shadow; the matte finish and smooth texture of the surface further accentuate the physical presence of the

sculpture, while the figure's musculature and anatomical details are rendered with extreme realism. The sculpture has a composition that directly affects the viewer, with the head shown in a three-quarter profile and the body shown from the front. The head's rightward turn, extending toward the back of the work, draws the viewer in. For a formal analysis of the work, the figure will be examined in three main layers: legs, torso, and head. **Legs:** The legs of the David statue are placed on a rectangular platform rising from the ground, and the figure stands completely naked. The top and sides of the platform have an uneven, natural surface texture. The distance between the figure's two feet is distinct; the right foot is positioned straight back to hip level, while the left foot is slightly forward with the heel raised. Behind the right leg are short leaf-like sections resembling tree branches, a detail that emphasizes the work's interest in nature and organic forms. The left leg is slightly bent inward, broken forward at the knee, and the upper leg is slightly tilted to the right. The figure's leg muscles and bone structure are perfectly rendered, and the accuracy of the body's anatomy is clearly observable. Specifically, the fingers and wrist of the left hand are proportionally larger and more pronounced than the rest of the body. Small anatomical details such as the hands, finger creases, veins, and nails are depicted in a highly realistic manner. **Body:** Displaying a solid anatomical structure, it emphasizes the figure's muscular build and healthy physique. The shoulders, rib cage, waist, and abdominal muscles are rendered in accordance with the biological accuracy of the human body.

The right shoulder slopes slightly downward, while the muscular arm is separated from the body and grasps the leg. The left arm is bent at the elbow and extends backward, holding an object at the shoulder. This object is a long, thin object that extends along the back, from the right waist to the hip, and ends in the other hand. The left shoulder is positioned higher than the right shoulder, creating an "S" curve in the figure's posture. The position of the legs and shoulders reinforces the dynamic structure of the sculpture, while the tension and shape of the leg muscles become prominent in the background. This anatomical harmony enhances the figure's sense of power and movement. **Head:** This is the most striking part of the sculpture and symbolizes the figure's strong, determined stance. The neck is thick and powerfully sculpted, with veins and muscles clearly visible. The head is shown in a 3/4 profile, featuring a strong jawline, prominent cheekbones, and a well-defined nose shape. A neatly closed mouth, a straight nose with large nostrils, and thick eyebrows form the facial features of the figure. The eyes are focused slightly to the right of the head and have a large, sharp gaze. The hair is curly or wavy and ends in a triangular shape at the temples and nape. The natural wave of the hair creates a

voluminous appearance with light and shadow both at the front and back of the head. The ears and the entire head anatomy are detailed in accordance with the natural structure of the human body. When the head is examined from other angles, the proportion of the right hand to the head and the marks left by the fingers prove that the work is proportionate and realistic in relation to the entire body. In particular, the hollow left by the thumb and the soft texture of the object on the other surface of the head further deepen the interaction between the visible physical characteristics of the sculpture.

**Image 1**

*Michelangelo, David Statue, (1501-1504) Accademia Gallery, Florence*



*Note.* [https://tr.wikipedia.org/wiki/Davut\\_\(Michelangelo\)](https://tr.wikipedia.org/wiki/Davut_(Michelangelo)).

**Image 2**

*Michelangelo, David Statue, (1501-1504) Accademia Gallery, Florence*



*Note.* <https://satad.org/bicimsel-ve-baglamsal-cozumleye-bir-ornek-michelangelonun-davut-david-heykeli/>.

**Image 3**

*Front and Rear Views of the Head of the Statue*



*Note.* <https://satad.org/bicimsel-ve-baglamsal-cozumleye-bir-ornek-michelangelonun-davut-david-heykeli/>.

#### Image 4

*Different views of the David statue*

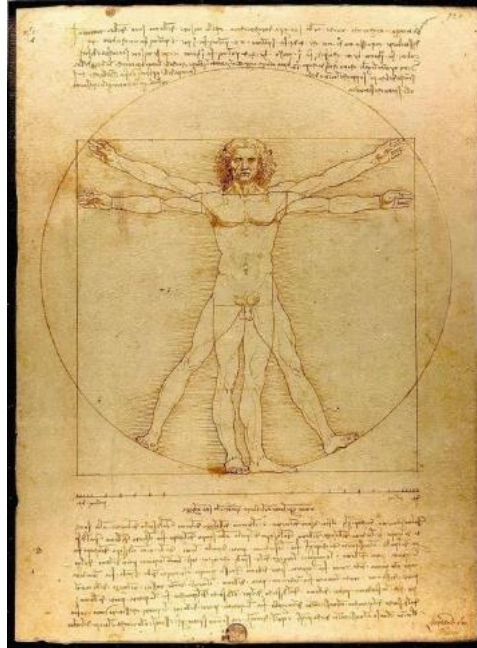


*Note.* <https://satad.org/bicimsel-ve-baglamsal-cozumleye-bir-ornek-michelangelonun-davut-david-heykeli/>.

The intellectual depth of this period can be seen in Leonardo da Vinci's Vitruvian Man (1490) drawing. The drawing was inspired by the ancient texts of the Roman architect Vitruvius on human proportions. Leonardo places the naked male figure inside both a square and a circle. The square represents the earth, measurable and orderly matter, while the circle symbolizes the celestial, infinity, and divine perfection. The fact that the figure fits into both forms at the same time shows that humans belong to both the material and divine nature. Thus, the human body carries the order of the cosmos within itself. This geometric order also demonstrates how the Renaissance established the language of civilization in art. Art now speaks more with the language of reason than with that of faith. In Leonardo's drawing, proportion, symmetry and balance are not merely aesthetic criteria but symbols of humanity's rational connection with the universe. The fact that the figure in the drawing appears in two different poses, with arms and legs open and closed at the same time, visualizes the human body's harmony with the mathematical order of the universe. Therefore, the Vitruvian Man is not merely an anatomy; it is a visual manifesto of the Renaissance human's claim to comprehend the world through reason (Clark, 1956; Eco, 2004).

## **Image 5**

Leonardo da Vinci's "Vitruvian Man" (1490) Gallerie dell'Accademia, Venice



Note. [https://tr.wikipedia.org/wiki/Vitruvius\\_Adam%C4%B1](https://tr.wikipedia.org/wiki/Vitruvius_Adam%C4%B1).

The figure in the drawing is shown in two different poses simultaneously; the arms and legs conform to both the square and the circle. This double exposure effect emphasizes how the human body can serve as a “measure” of the universe’s mathematical order. The delicacy of the line and the precision of the proportions represent the point where anatomy and metaphysics converge.

**Image 6**

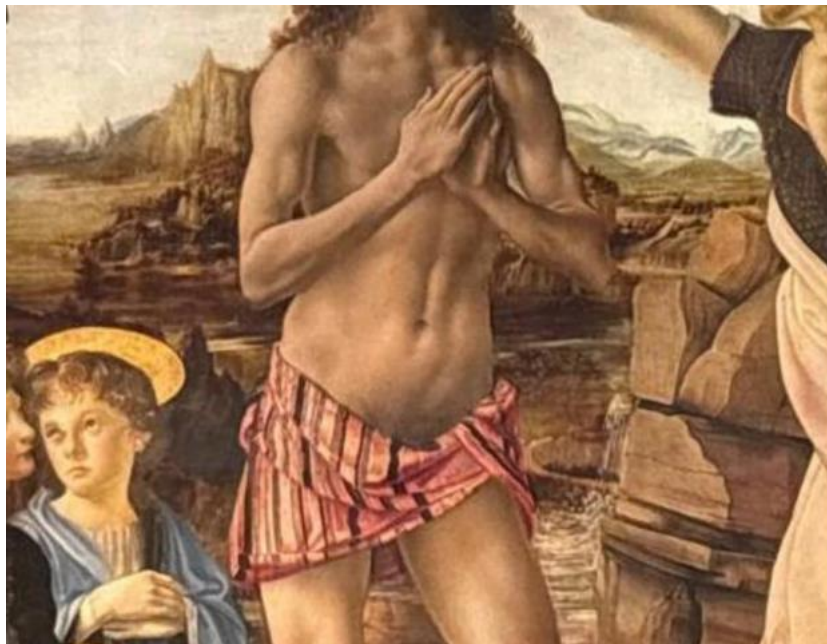
Leonardo da Vinci – Andrea del Verrocchio “The Baptism of Christ” (1475) Uffizi Gallery, Florence



Note. Emine Berfin YETİŞ, Uffizi Gallery, 30/10/2025.

**Image 7**

Leonardo da Vinci – Andrea del Verrocchio “The Baptism of Christ” (1475) Uffizi Gallery, Florence



Note. Emine Berfin YETİŞ, Uffizi Gallery, 30/10/2025.

In *The Baptism of Christ* (1475), the figure of Jesus, seen in the collaborative work of Verrocchio and the young Leonardo da Vinci, is anatomically accurate but is represented with an emphasis on serenity, spiritual surrender, and purity rather than muscle mass and physical strength. Here, the body is not a vehicle of physical excellence, but rather of moral and divine transformation. This situation shows that in Renaissance aesthetics, the body is conceptualized not only as a biological organism but also as a theological image, a vessel of the soul (Panofsky, 1955). Therefore, unlike the equation of modern sports culture, “healthy body = strong body,” the Renaissance emphasizes the relationship of “purified body = virtuous body.”

Leonardo’s anatomical studies developed during the same period, particularly the *Vitruvian Man*, represent a critical turning point in this transformation. The human body is no longer viewed solely as a sacred representation but also as a measurable, calculable system with universal proportions. This approach can also be seen as a precursor to modern sports science, which seeks to impose a mathematical order on the body. Indeed, the quantification of the ideal body, such as today’s body fat percentage and muscle measurement, is fundamentally based on Leonardo’s understanding that “if there is perfection in nature, it is found in the proportions of the body” (Kemp, 2019). Therefore, the Renaissance both preserves the ideal of the sacred body and initiates the scientific approach to the body that lays the foundation for modern sports aesthetics. These two historical perceptions of the body are sharply divided in today’s sports culture. In modern sports aesthetics, the body becomes the object of visual performance; body fat is reduced, muscle groups are defined, and the “fit” appearance has become the norm. In contrast, the body in *The Baptism of Christ* does not display strength; there is no hypertrophy<sup>4</sup> in the pectoral muscles, nor is there the anatomical rigidity characteristic of modern fitness aesthetics. Here, the body’s “perfection” is based not on physiology but on moral completeness. This difference clearly demonstrates that art history shaped the body not only through form but also through regimes of meaning (Bordo, 1993).

Another aesthetic expression of these ideals appears in Sandro Botticelli’s painting *The Birth of Venus* (1486). In the painting, Venus, standing on a seashell, is elegantly nude and natural. However, this naturalness is more the product of an idealized harmony than physical reality. Venus’ elongated body conveys a sense of rhythm in harmony with the golden ratio; her hair, waving in the wind, evokes the spirituality of pure beauty. The composition establishes a symmetrical balance with the scene where Zephyr and Aura blow Venus ashore and the Horae extend a blanket to her. Here, Botticelli transforms the mythological narrative of birth into an

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<sup>4</sup> It can be defined as an increase in cell and organ size.

aesthetic metaphor of “rebirth,” much like the Renaissance itself. However, John Berger (1972) points out that such representations are also the product of a male-centered gaze: “Men look at women. Women watch themselves being looked at.” This statement shows that even Renaissance aesthetics cannot be independent of the visual codes of gender.

**Image 8**

*Sandro Botticelli, “The Birth of Venus” (1486)*



*Note.* Emine Berfin YETİŞ, Uffizi Gallery, 10/30/2025.

### Image 9

*“The Birth of Venus” Viewed from Other Angles*



*Note.* Emine Berfin YETİŞ, Uffizi Gallery, 10/30/2025.

Venus, born from sea foam, stands gracefully at the center of the shell. The figures of Zephyr and Aura on the left blow her toward the shore, while Horae on the right extends a veil to her. The entire scene carries a balanced symmetry, as if flowing with a musical rhythm. While Venus's body embodies a supernatural ideal, her gaze is directed toward the viewer. It strongly evokes Berger's concept of the "woman as spectacle." Ultimately, the ideal body in the Renaissance is not only a reflection of anatomical accuracy but also of civilization's way of understanding the world. Michelangelo expresses the same thing with marble, Leonardo with line, Botticelli with color and light. The desire to reconstruct the universe through one's own body. The Renaissance body embodies the harmony of mind and spirit; this harmony becomes one of the fundamental criteria of modern aesthetics in the centuries that follow.

Hans Baldung Grien's Adam and Eve painting is one of the fundamental examples illustrating how the nude body became a visual vehicle for both divine order and moral decline from the Renaissance onwards. The figures, with their idealized proportions, smooth skin, and symmetrical poses, reflect the pinnacle of Renaissance anatomical knowledge, while also

representing the fall from innocence through the body itself as carriers of the “original sin” narrative. As Eco puts it, “The Renaissance nude is not only the embodiment of beauty, but also the visible manifestation of the stage where human nature is tested by fate” (Eco, 2010, p. 112). Baldung’s figures therefore present both an idealized and fragile physicality: while maintaining muscle and proportion balance, the iconography of the apple and the serpent reminds us that the body is not only an aesthetic but also a moral text. The glorification of the body as a “natural, healthy, disciplined” form in modern sports aesthetics draws precisely on this idealization-moralization equation established in the Renaissance tradition. For here, nudity is not merely biological; the body becomes the surface on which cultural meaning is inscribed.

**Image 10**

*Hans Baldung Grien, Adam and Eve (1507)*



*Note.* Emine Berfin YETİŞ, Uffizi Gallery, 10/30/2025

## Image 11

*“Adam and Eve” Painting Viewed from Different Angles*



Note. Emine Berfin YETİŞ, Uffizi Gallery, 10/30/2025

## THE IDEAL BODY IN MODERN SPORTS AESTHETICS

In the modern era, body aesthetics has been redefined through the concepts of performance, discipline and control, differing from the Renaissance ideal centered on reason and proportion. Michel Foucault's (1977) approach to the “disciplined body” explains the transformation of the modern individual into a subject who controls and shapes their own body within social power relations. In this process, sport has become not only a physical activity but also a stage where bodily control merges with aesthetics. In modern sports aesthetics, beauty is associated with efficiency, endurance, and willpower beyond formal harmony. Susan Bordo (1993) notes that in modern culture, the ideal of a “fit” body represents a kind of self-discipline ideology rather than liberation. Measuring, quantifying and tracking the body—for example, through calorie counters, smartwatches, or performance apps—is an expression of the power individuals exert over themselves. In this context, athletic aesthetics have become not just a physical appearance but a visual representation of individual willpower. Constantly measuring, monitoring and transforming the body is a fundamental ritual of our age. Smartwatches, calorie-counting apps and performance analytics rationalize the relationship humans have with themselves. Thus, the body becomes both subject and object, as defined by Foucault: a being that is controlled but also controls itself.

The muscular density, inward-directed power and sense of balance before movement observed in Michelangelo's David statue (1501–1504) are echoed in the athletic figures of modern sports photography (see Image:1). In these images, the body is idealized in the moment of tension just before action. Similarly, the circular and square formal arrangement in Leonardo da Vinci's Vitruvian Man (1490) drawing is reestablished in contemporary sports aesthetics through biomechanical measurements. Concepts in sports biomechanics such as muscle ratio, angular balance, and posture measurement are contemporary scientific versions of the Renaissance's "ideal proportion" (Hoberman, 1992).

### Image 12

*Leni Riefenstahl, Olympia (1938). Berlin Olympics. German Federal Archives. 1938 - Olympia. Part 2: Fest Der Schönheit*



Note. [http://leni-riefenstahl.de/eng/film/oly2\\_7.html](http://leni-riefenstahl.de/eng/film/oly2_7.html).

In Leni Riefenstahl's Olympia (1938), the modern athletic body is presented with aesthetic symmetry (see Image 12). The muscle structure, the rhythm of movement and the contrast created with light are like a modern cinematic counterpart to the divine proportion ideal of the Renaissance. Eadweard Muybridge's Human Figure in Motion (1887) series of photographs, on the other hand, combines the aesthetics of movement with scientific observation, transforming the human body into a measurable object of art (see Image 13). Thus, a visual continuity is established between art, science, and sport.

### Image 13

*Eadweard Muybridge, Human Figure in Motion (1887). Library of Congress Digital Collections*



*Note.* <https://www.nytimes.com/2014/05/25/nyregion/a-review-of-exposed-eadweard-muybridge-and-the-study-of-motion-in-huntington.html>.

Arnold Schwarzenegger's muscle movements in *Pumping Iron* (1977) or the moments of tension experienced by Olympic athletes are, like Michelangelo's *David*, monuments to "potential energy." But this time, it is not marble, but a living surface molded by muscle and sweat. (See Image 17) Pierre Bourdieu (1984) defines the body as a social "aesthetic capital." In today's sports culture, this capital is related not only to physical performance but also to indicators of identity, class and visibility. Therefore, modern sports aesthetics become the aesthetic face of power on both the individual and social levels. The ideal embodied in marble during the Renaissance has now been reshaped in muscle fibers, data screens and motion analysis.

Archival images that combine the Renaissance ideal of proportion with modern dynamism:

### Image 14

*Ugo Frigerio, 1920 Olympics*



Note. <https://www.gettyimages.com/>.

### Image 15

*Jesse Owens, 1936 Olympics*



Note. <https://www.gettyimages.com/>.

### **Image 16**

*“Nike Just Do It” visuals can be used as an example of Nike’s advertising language shaped by sports aesthetics*



*Note.* <https://www.gettyimages.com/>.

This campaign combines written slogans and dynamic/energetic body images to aestheticize the themes of “action, power, and determination. “Nike’s” “Just Do It” slogan, launched in 1988, forms the most distinctive visual language of modern sports aesthetics. In these campaigns, the body moves beyond the static representation of classical art to become a symbol of action, speed and power. The use of light, the glistening of sweat droplets and the definition of muscle lines create a composition where movement is aesthetically enhanced. In these images, the disciplined body is a symbol not only of athletic achievement but also of the narrative of the “liberated subject.” However, this freedom can be interpreted, as Foucault (1977) noted, as an internalized form of power; the individual is the bearer of micro-power that regulates their own body.

**Figure 17**

*Arnold Schwarzenegger's bodybuilding photos can illustrate how body aesthetics became an icon of the performance ideal*



Note. <https://www.gettyimages.com/>.

The documentary *Pumping Iron*, directed by George Butler and Robert Fiore, reveals the transformation of the muscular body into a work of art in the modern era. Schwarzenegger's poses are reminiscent of the muscular proportions of Michelangelo's *David*; however, here the body is a sculpture of will and effort, not divine creation. The tension on the muscle surface, the sweat and the dramatic light contrast created by the camera angle transform the body into a performance object. Thus, the ideal body proportions of the Renaissance evolve into the modern-day aesthetic of "competition for perfection."

In conclusion, modern sports aesthetics continues the Renaissance idea of "the perfection of the human mind"; however, this time perfection is defined through the body's desire to transcend itself. History has changed, materials have changed, but the essence of the ideal—the desire to transcend human limitations—remains the same (Panofsky, 1953; Foucault, 1977; Bordo, 1993; Hoberman, 1992).

## **BODILY AESTHETICS AS A PEDAGOGICAL FRAMEWORK**

Bodily aesthetics should not be understood solely as a visual or representational phenomenon confined to art history or contemporary sport culture; rather, it functions as a pedagogical framework through which societies educate, discipline, and normalize individuals (Todd et al., 2021; Xue, 2024).

Throughout history, ideals of the body have been transmitted not only through images and performances but also through structured systems of learning that define how bodies ought

to move, appear, and behave. In this sense, the body operates as a site of embodied knowledge where cultural values, moral norms, and power relations are internalized through education (Shilling, 2017; Cereda, 2023).

During the Renaissance, bodily aesthetics were deeply embedded in educational practices within artistic academies and workshops (Sealy & Lee, 2019). The teaching of anatomy, proportion, symmetry, and movement was inseparable from intellectual and moral cultivation (McMenamin, 2021). Artists were trained to observe, measure, and idealize the human body as a harmonious microcosm reflecting divine and natural order (Gross et al., 2023). This pedagogical model framed the ideal body as an expression of rationality, balance, and virtue, positioning physical form as a visible indicator of an educated and cultivated subject. Learning the body, therefore, meant learning order itself (Karampetsos et al., 2021).

In modern societies, this pedagogical function has not disappeared; rather, it has been reconfigured through physical education, sport training, and performance-oriented curricula. Contemporary physical education systems translate bodily aesthetics into standardized learning objectives, assessment criteria, and performance benchmarks (Gray et al., 2021; Tudor & Pîslaru, 2021; Stirrup et al., 2023).

Strength, endurance, flexibility, posture, and body composition become measurable indicators of success, transforming aesthetic ideals into educational outcomes. Through repetitive practice, evaluation, and monitoring, students are taught to regulate their bodies in accordance with dominant norms of efficiency, health, and productivity. As such, bodily aesthetics operate as a hidden curriculum that shapes self-discipline, motivation, and identity formation (Liu et al., 2023; Pérez-Ramírez et al., 2024; Da Rocha et al., 2025).

Michel Foucault's concept of the "disciplined body" provides a critical lens for understanding this process (Aartun et al., 2020). Educational institutions function as spaces where bodily norms are produced and reproduced through surveillance, normalization, and self-regulation (Barker et al., 2022). Within physical education contexts, students learn not only how to perform movements but also how to perceive and evaluate their own bodies (Metcalf, 2018). This pedagogical gaze encourages individuals to internalize aesthetic and performance standards, aligning bodily self-management with broader social and economic expectations (Walseth et al., 2017).

At the same time, visual representations of athletic bodies—circulating through textbooks, instructional media, and digital platforms—reinforce pedagogical ideals by offering aspirational bodily models (Vidal-Albelda & Martínez-Bello, 2017; Moya-Mata et al., 2023).

These images serve a function similar to Renaissance artworks: they define what counts as a “proper” body and guide educational practices accordingly (González-Calvo et al., 2021). Bodily aesthetics emerge as a powerful pedagogical framework that bridges art, sport, and education, revealing how ideals of beauty and performance are taught, learned, and sustained across historical periods (Camacho-Miñano et al., 2019).

## **A COMPARATIVE ANALYSIS BETWEEN THE RENAISSANCE IDEAL AND MODERN SPORTS AESTHETICS**

The most striking commonality between Renaissance and modern sports aesthetics is that both periods position the body as an instrument of human intellect and will. In Leonardo da Vinci’s Vitruvian Man, the human figure symbolizes divine order; in modern sports aesthetics, the body has become a symbol of individual will, self-control, and performance. In both cases, the body is a measurable, malleable, and meaningful structure. In Michelangelo’s David statue (1501–1504), the tense energy within stillness represents a potential prior to action. A similar “potential movement” can also be seen in today’s sports photography: the image of modern Davids comes to life in the tense muscles of a sprinter at the moment of takeoff or a weightlifter as they inhale. The athletic figures in Nike’s “Just Do It” campaigns evoke Michelangelo’s perfect sense of proportion with their aesthetic balance at the moment of transcending the body’s limits. Both representations present the body not merely as a physical entity, but as the visible form of willpower. Similarly, the geometric perfection created by the circle and square in da Vinci’s Vitruvian Man is recreated in modern sports aesthetics through digital data and symmetrical images.

The female body, symbol of divine grace in Botticelli’s *The Birth of Venus* (1486), takes on a different form in modern sports aesthetics. The bodies of female athletes such as Serena Williams, Simone Biles or Alex Morgan are now symbols not only of grace but also of the aesthetics of strength and endurance. This transformation can also be interpreted as progress beyond Berger’s (1972) critique that “women are watched”: the modern female body is now more the subject of action than the object of the gaze. Nevertheless, the boundaries still drawn by the norms of “beautiful, powerful but measured” in media representations are modern reflections of Renaissance idealization. While in Renaissance art the body represented harmony between nature and divine order, in modern sports aesthetics the body has become a symbol of harmony between nature and technology. As Foucault (1975) explains with his concept of the “disciplined body,” contemporary body politics transform the individual into a subject who

works on and monitors themselves. This situation is the modern-day fetishism of data, numerical measurement, and performance, a transformation of the Renaissance artist's obsession with proportion and order. Ultimately, both periods relate beauty to measurement, measurement to knowledge and knowledge to power. Just as Michelangelo's David reveals the perfection within the stone, modern sports aesthetics sculpts the body through discipline, labor, and technology. The marble of the Renaissance has now become muscle fiber, the light of the workshop has become stadium spotlights and the science of anatomy has become the data of biomechanics. The only difference is the change in the vehicle; the essence of the ideal, the desire to surpass oneself, remains the same.

## CONCLUSION

The study compares the ideal body concept based on the "divine proportion and harmony" that emerged during the Renaissance with the body ideal focused on "performance, discipline, and efficiency" that emerged in modern sports aesthetics. In this way, it has been shown that the concept of the ideal body does not merely exist by changing form within historical continuity, but is also reproduced by the power relations, knowledge structures, and forms of subjectification of each period. The findings reveal that while in the Renaissance the body represented a model of perfection in harmony with the divine order, in the modern era the same body is defined by discourses of competition, productivity, self-control and measurable success. Thus, in both periods, the ideal body has functioned not merely as an aesthetic form, but as a cultural space of power that determines how humans position themselves in the world. In this respect, the study answers the fundamental research question, "Is the concept of the ideal body historically more of an ideological construct than an aesthetic preference?" in the affirmative, demonstrating that the idealized body, while articulating different value systems in each period, has continued to perform the same function, namely, making visible which order the individual belongs to.

Theoretically, the study presents a comprehensive framework that addresses the ideal body in terms of representation, power, and social body politics by bringing together Panofsky's iconological analysis method, Foucault's approach to the disciplined body, and Bordo's feminist critique of the body. In this respect, the study shifts the ideal body debate away from the form-aesthetic axis, establishing a conceptual bridge between art history and body sociology; it demonstrates that bodily representation is not only related to artistic production but also to

processes of social norm, control, and identity construction. Thus, it is proven that the ideal body is not an unchanging standard of beauty throughout history but a constantly redefined field of cultural production.

In this context, the significance of this study lies in demonstrating how the ideal body model in art history intersects with contemporary practices such as modern sports aesthetics, advertising imagery, digital body tracking, and performance culture. The Renaissance ideal of proportion embodied in marble is being reproduced today in muscle fibers, hyper-visible athletic bodies, and data-driven body tracking technologies. Thus, although aesthetic ideals appear to have changed, it is understood that the structural logic of measuring, shaping, and disciplining the body persists.

Beyond artistic and athletic representations, this study further demonstrates that the ideal body operates as a pedagogical construct that is actively produced, transmitted, and legitimized through educational systems—particularly within physical education and sport training contexts. From Renaissance academies that taught anatomy and proportion as intellectual virtues to contemporary physical education curricula that prioritize performance metrics, discipline, and self-regulation, education has functioned as a key mechanism in sustaining bodily norms. In this sense, the ideal body is not only seen or performed but learned, assessed, and internalized through structured pedagogical practices.

Accordingly, bodily aesthetics should be understood as an educational framework that shapes embodied knowledge, bodily self-perception, and identity formation. Physical education emerges as one of the primary institutional spaces where aesthetic ideals are translated into normative standards of health, success, and competence. This perspective reveals that the power of the ideal body lies not merely in its visual appeal, but in its capacity to organize learning, behavior, and self-discipline across generations.

In conclusion, this research has achieved its goal of reading the temporal transformation of the ideal body through ideology rather than form; it has revealed that what remains unchanged in the body's transition from marble to muscle fiber, from the principle of proportion to performance data, is not only “the order that defines humanity itself,” but also the pedagogical logic through which this order is taught, reproduced, and embodied.

## REFERENCES

- Aartun, I., Walseth, K., Standal, Ø., & Kirk, D. (2020). Pedagogies of embodiment in physical education: A literature review. *Sport, Education and Society*, 27, 1–13. <https://doi.org/10.1080/13573322.2020.1821182>
- Aasland, E., & Engelsrud, G. (2021). Structural discrimination in physical education: The “encounter” between the (White) Norwegian teaching content in physical education lessons and female students of color’s movements and expressions. *Frontiers in Sports and Active Living*, 3, Article 769756. <https://doi.org/10.3389/fspor.2021.769756>
- Alp, K. (2014). Feminist sanatta beden ve yabancılaşma. *Art-e Sanat Dergisi*, 7(14), 338–365.
- Andrews, D. L. (2008). *Sport and neoliberalism: Politics, consumption, and culture*. Temple University Press.
- Aygün, N. (2022). *20. yy Batı resim sanatında beden imgesi ve temsili* (Yayımlanmamış yüksek lisans tezi). Çanakkale Onsekiz Mart Üniversitesi, Lisansüstü Eğitim Enstitüsü.
- Barker, D., Varea, V., Bergentoft, H., & Schubring, A. (2022). Body image in physical education: A narrative review. *Sport, Education and Society*, 28, 824–841. <https://doi.org/10.1080/13573322.2022.2076665>
- Berger, J. (1972). *Ways of seeing*. Penguin Books.
- Bordo, S. (1993). *Unbearable weight: Feminism, Western culture, and the body*. University of California Press.
- Bourdieu, P. (1984). *Distinction: A social critique of the judgement of taste*. Harvard University Press.
- Burke, P. (1998). *The Renaissance sense of the past*. Oxford University Press.
- Camacho-Miñano, M., MacIsaac, S., & Rich, E. (2019). Postfeminist biopedagogies of Instagram: Young women learning about bodies, health and fitness. *Sport, Education and Society*, 24, 651–664. <https://doi.org/10.1080/13573322.2019.1613975>
- Cereda, F. (2023). Sporting bodies, societal norms in history. *Scientific Journal of Sport and Performance*. <https://doi.org/10.55860/avzs3084>
- Çeviker, A., Taşdemir, D. Ş., & Güler, Y. E. (2023). Boycotts in the history of the modern Olympic Games. *International Journal of Eurasian Education and Culture*, 22, 1943–1964.
- Clark, K. (1956). *The nude: A study in ideal form*. Oxford University Press.
- Da Rocha, R., Da Silva Ribeiro, F., Romig, I., De Oliveira Arrieira, H., Da Cunha, G., Gaya, A., Pinheiro, E., & Bergmann, G. (2025). Effects of implementing 15-minute physical exercise sessions during physical education classes on physical fitness and

anthropometric indicators in rural adolescents. *Journal of Physical Activity & Health*, 1–11. <https://doi.org/10.1123/jpah.2024-0720>

Derelioğlu, M., Vural, M., Çimen, E., Saki, Ü., Yağız Saraçoğlu, Y., Karataş, B., Saç, A., Yamaner, E., Halmatov, M., Yılmaz, C., Öztaş, M., Arıkan, G., & Ceylan, L. (2025). Exploring how cognitive-behavioral physical activity links ruminative thinking and mental wellbeing in sports high school adolescents. *Frontiers in Psychology*, 16, Article 1665882. <https://doi.org/10.3389/fpsyg.2025.1665882>

Eco, U. (2004). *History of beauty*. Rizzoli International Publications.

Foucault, M. (1977). *Discipline and punish: The birth of the prison*. Vintage Books.

Gombrich, E. H. (2007). *Sanatın öyküsü* (Ö. Erduran & E. Erduran, Trad.). Remzi Kitabevi. (Trabalho original publicado em 1950)

González-Calvo, G., & Gerdin, G. (2023). ‘The good, the bad and the ugly’: Primary school children’s visual representations and interpretations of PE teacher embodiments. *Sport, Education and Society*. <https://doi.org/10.1080/13573322.2023.2177985>

González-Calvo, G., Gallego-Lema, V., Gerdin, G., & Bores-García, D. (2021). Body image(s): Problematizing future physical education teachers’ beliefs about the body and physical activity through visual imagery. *European Physical Education Review*, 28, 552–572. <https://doi.org/10.1177/1356336x211056214>

Gray, S., Hooper, O., Hardley, S., Sandford, R., Aldous, D., Stirrup, J., Carse, N., & Bryant, A. (2022). A health(y) subject? Examining discourses of health in physical education curricula across the UK. *British Educational Research Journal*. <https://doi.org/10.1002/berj.3820>

Gray, S., Sandford, R., Stirrup, J., Aldous, D., Hardley, S., Carse, N., Hooper, O., & Bryant, A. (2021). A comparative analysis of discourses shaping physical education provision within and across the UK. *European Physical Education Review*, 28, 575–593. <https://doi.org/10.1177/1356336x211059440>

Gross, M., Gear, J., & Sepponen, W. (2023). Using represented bodies in Renaissance artworks to teach musculoskeletal and surface anatomy. *Anatomical Sciences Education*, 17, 24–38. <https://doi.org/10.1002/ase.2326>

Hoberman, J. (1992). *Mortal engines: The science of performance and the dehumanization of sport*. Free Press.

Kapar, S. (2025). Otokonografik yaklaşım üzerinden çağdaş sanatta beden, bellek ve onarımın estetik ifadesi. *Journal of Arts*, 8(1), E2953.

Karampetsos, A., Efthymiou, D., Griva, E., Mesriari, C., Severin, A., & Vassilopoulou, E. (2021). Eating habits and body ideals from the Renaissance period to the present:

- Perspectives from paintings on nutrition and body image. *Public Health Toxicology*. <https://doi.org/10.18332/pht/139905>
- Li, P., Li, P., & Mei, Y. (2017). The aesthetic thought of competitive sports and the value study of aesthetic education in health education. *Eurasia Journal of Mathematics, Science and Technology Education*, 13, 5115–5121. <https://doi.org/10.12973/eurasia.2017.00986a>
- Liu, C., Cao, Y., Zhang, Z., Gao, R., & Qu, G. (2023). Correlation of fundamental movement skills with health-related fitness elements in children and adolescents: A systematic review. *Frontiers in Public Health*, 11. <https://doi.org/10.3389/fpubh.2023.1129258>
- Mamedova, N. M., Gavrish, V. D., Skatershchikova, A. V., & Fomina, A. S. (2018). Modern medeniyetin sosyal pratik evreninde spor. *Fiziksel Kültürün Teorisi ve Uygulaması*, (1), 5.
- McMenamin, P. (2021). Art and anatomy in the Renaissance: Are the lessons still relevant today. *ANZ Journal of Surgery*, 92. <https://doi.org/10.1111/ans.17268>
- Metcalfe, S. (2018). Adolescent constructions of gendered identities: The role of sport and (physical) education. *Sport, Education and Society*, 23, 681–693. <https://doi.org/10.1080/13573322.2018.1493574>
- Mironova, T. A., Arseenko, E. A., Sobyankin, F. I., & Samolyuk, O. I. (2017). Yeni spor görünüm türlerinin özellikleri. *Tambov Üniversitesi İncelemesi. Seriler: Beşeri Bilimler*, 22(4), 74–80.
- Modell, N., & Gerdin, G. (2021). ‘But in PEH it still feels extra unfair’: Students’ experiences of equitable assessment and grading practices in physical education and health (PEH). *Sport, Education and Society*, 27, 1047–1060. <https://doi.org/10.1080/13573322.2021.1965565>
- Moya-Mata, I., Stieg, R., Loro, A., Soares, D., & Santos, W. (2023). Physical activity according to gender in Brazilian physical education textbooks. *Retos*. <https://doi.org/10.47197/retos.v48.96872>
- Özalp, K. (2016). Güzelliğin bilinçli algısı ve estetik eğitimi. *İdil Sanat ve Dil Dergisi*, 5(21), 491–504.
- Pačesová, P., & Oborný, J. (2012). Esthetics of sport and different aspects of its meaning. *Electronic Proceedings Book*, 28.
- Panofsky, E. (1953). *Meaning in the visual arts*. Doubleday Anchor.
- Paterna, A., Alcaraz-Ibáñez, M., Fuller-Tyszkiewicz, M., & Sicilia, Á. (2021). Internalization of body shape ideals and body dissatisfaction: A systematic review and meta-analysis. *International Journal of Eating Disorders*. <https://doi.org/10.1002/eat.23568>

- Pérez-Ramírez, J., González-Fernández, F., & Villa-González, E. (2024). Effect of school-based endurance and strength exercise interventions in improving body composition, physical fitness and cognitive functions in adolescents. *Applied Sciences*. <https://doi.org/10.3390/app14209200>
- Quennerstedt, M., Barker, D., Johansson, A., & Korp, P. (2024). Teaching with the test: Using fitness tests to teach paradoxically in physical education. *European Physical Education Review*, 31, 462–481. <https://doi.org/10.1177/1356336x241283796>
- Samadov, A. R. (2019). Sport as the device of forming aesthetic ideal of person. *Theoretical & Applied Science*, (4), 165–167.
- Schubring, A., Bergentoft, H., & Barker, D. (2021). Teaching on body ideals in physical education: A lesson study in Swedish upper secondary school. *Curriculum Studies in Health and Physical Education*, 12, 232–250. <https://doi.org/10.1080/25742981.2020.1869048>
- Sealy, U., & Lee, T. (2019). Anatomy and academies of art I: Founding academies of art. *Journal of Anatomy*, 236. <https://doi.org/10.1111/joa.13131>
- Shilling, C. (2017). Body pedagogics: Embodiment, cognition and cultural transmission. *Sociology*, 51, 1205–1221. <https://doi.org/10.1177/0038038516641868>
- Shilling, C. (2021). Body pedagogics, culture and the transactional case of Vélo worlds. *European Journal of Social Theory*, 25, 312–329. <https://doi.org/10.1177/1368431021996642>
- Stirrup, J., Aldous, D., Gray, S., Sandford, R., Hooper, O., Hardley, S., Bryant, A., & Carse, N. (2023). Exploring the re-legitimation of messages for health and physical education within contemporary English and Welsh curricula reform. *Sport, Education and Society*, 29, 939–951. <https://doi.org/10.1080/13573322.2023.2240822>
- Tekin, G. (2023). The relationship between sports, politics, and nationalism in the historical process. *Journal of ROL Sport Sciences*, 4(3), 1182–1201. <https://doi.org/10.5281/zenodo.8353220>
- Temizer, M. (2024). Bir güzellik bilimi olarak estetiğin toplumsal koşullar karşısındaki evrimi. *Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 27(52), 525–547.
- Todd, S., Hoveid, M., & Langmann, E. (2021). Educating the senses: Explorations in aesthetics, embodiment and sensory pedagogy. *Studies in Philosophy and Education*, 40, 243–248. <https://doi.org/10.1007/s11217-021-09776-7>
- Tudor, V., & Pîslaru, V. (2021). Performance standards for physical education: A necessity of the curricular reform. *Discobolul – Physical Education, Sport and Kinetotherapy Journal*. <https://doi.org/10.35189/dpeskj.2021.60.2.5>

- Uçar, M. (2023). Modernden postmoderne, sanatta estetik deneyimin dönüşümü. *Akademik Sanat*, (20), 141–153.
- Vidal-Albelda, B., & Martínez-Bello, V. (2017). Representation of bodies with and without disabilities in secondary school physical education textbooks. *Sport in Society*, 20, 957–968. <https://doi.org/10.1080/17430437.2016.1221937>
- Voelker, D., Visek, A., Fairhurst, K., & Learner, J. (2024). Conforming to reforming: A systems understanding of aesthetic sport coaches' behaviors and practices toward female athletes' bodies. *Body Image*, 51, Article 101784. <https://doi.org/10.1016/j.bodyim.2024.101784>
- Walseth, K., Aartun, I., & Engelsrud, G. (2017). Girls' bodily activities in physical education: How current fitness and sport discourses influence girls' identity construction. *Sport, Education and Society*, 22, 442–459. <https://doi.org/10.1080/13573322.2015.1050370>
- Xue, S. (2024). The loss and return of body aesthetics in physical education. *Journal of Human Movement Science*. <https://doi.org/10.23977/jhms.2024.050108>

### **Visual Resources**

- Michelangelo. (1501–1504). *David* [Escultura]. Galleria dell'Accademia, Florença, Itália.
- SATAD. (n.d.). *Bicimsel ve bağlamsal çözümlmeye bir örnek: Michelangelo'nun Davut (David) heykeli*. Retrieved October 13, 2025, from <https://satad.org/bicimsel-ve-baglamsal-cozumleye-bir-ornek-michelangelonun-davut-david-heykeli/>
- Leonardo da Vinci. (1490). *Vitruvian Man* [Desenho]. Gallerie dell'Accademia, Veneza, Itália.
- Riefenstahl, L. (1938). *Olympia: Fest der Schönheit* [Filme]. German Federal Archives. [http://leni-riefenstahl.de/eng/film/oly2\\_7.html](http://leni-riefenstahl.de/eng/film/oly2_7.html)
- Muybridge, E. (1887). *Human figure in motion* [Fotografias]. Library of Congress Digital Collections.

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