

# WHEELCHAIR BASKETBALL A DIDACTIC PROPOSAL INCORPORATING INFORMATION AND COMMUNICATION TECHNOLOGIES

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## ABSTRACT

Wheelchair basketball holds significant popularity within the Paralympic Games for individuals with physical impairments, distinguished by its emphasis on rapid gameplay, strategic acumen, collaborative efforts, and accuracy. This sport necessitates proficient coordination, adept wheelchair manipulation, and a strong understanding of spatial awareness. In parallel, it is an indispensable means for encouraging inclusion, equality, and appreciation of diversity. The integration of novel educational technologies and practical engagement cultivates enhanced student comprehension of the capacities of individuals with disabilities, fostering empathy and promoting affirmative perspectives on inclusivity. Furthermore, it can be effectively implemented as a superior educational aid in academic settings, enabling students to acquire knowledge about Paralympic sports, cultivate cooperation, foster active participation, and recognize that sports are an inherent right for every individual.

**Keywords:** Disability, Wheelchair Basketball, Information and Communication Technologies, Adapted Physical Education

## 1.0 INTRODUCTION

Disability represents a multifaceted construct, encompassing not merely physical or cognitive deficits but also the interplay of social, cultural, and environmental determinants in shaping personal experiences. It is not merely a medical condition; rather, it represents a dynamic interplay between the individual and his/her environment. Creating an inclusive and fair educational system requires recognizing and understanding various disabilities. Motor and sensory impairments are designated as the two primary classifications (Kalmpazidou, Vlachou, Patsi & Evaggelinou, 2026). The contemporary perspective posits that disability emerges from the interplay of an individual's health condition and the personal, social, and environmental elements that can either promote or impede their capabilities. Consequently, there is a direct correlation with the imperative for accessibility, equity, and meaningful participation across all societal domains (Kalapoda & Patsi, 2025).

Regular participation in sports activities is crucial for physical and mental well-being, regardless of whether a person has a physical disability or not. Wheelchair basketball is a sport that offers numerous benefits, such as improving cardiovascular health and increasing upper body strength, while the sport's classification systems allow people with varying degrees of disability to participate on an equal footing. Furthermore, it has been demonstrated to enhance social connections, bolster mental well-being, and positively impact self-esteem (Najafabadi et al., 2023).

The current decade is marked by rapid technological advances. Information and Communication Technologies (ICT) are one of the most useful tools for enhancing the educational process, provided they are used correctly. According to Ohuruogu et al. (2019), the use of ICT contributes to the achievement of learning objectives and assessment, increases student motivation, and stimulates their interest. The use of ICT in physical education strengthens the link between practical execution and cognitive understanding, as it allows students to analyze their movements, understand the effects of exercise on the body, and improve their performance.

The Paralympic sport of wheelchair basketball is intended for participants with disabilities affecting their lower limb mobility. Standard basketball court specifications, including dimensions and hoop height, are observed. Nevertheless, participants are equipped with specialized wheelchairs engineered for enhanced speed and skillful navigation. A maximum of two wheelchair pushes are allowed before a dribble, pass, or shot must be performed.

The following is an ICT-integrated lesson plan designed for seventh-grade students, aimed at introducing them to the Paralympic sport of wheelchair basketball.

## 2.0 TEACHING PROPOSAL WITH THE USE OF ICT

### **Title:**

Wheelchair Basketball

Objects: Adapted Physical Education, Physical Education, Computer Science

### **Grade:**

Middle school students

### **Duration:**

One class session lasting 45 minutes

### **Purpose:**

Introducing students to the Paralympic sport of wheelchair basketball through the use of technological tools (videos, presentations, concept maps, digital quizzes), their active participation in adapted experiential activities, as well as fostering attitudes of acceptance, empathy, and respect for diversity.

**Educational goals:**

Following the end of the lesson students should be able to:

**Psychomotor skills:**

1. Acquiring proficiency in wheelchair basketball techniques, including passing, dribbling, and shooting.
2. Acquiring basketball proficiency through adaptive techniques or from a seated posture,
3. Students are required to successfully execute each skill a minimum of ten times.

**Cognitive skills:**

1. Acquiring information regarding individuals with disabilities, diversity, and their inherent rights,
2. Understanding of the basic skills and characteristics of wheelchair basketball,
3. An overview of a contemporary pedagogical approach integrating information and communication technology with practical application.

**Emotional skills:**

1. Fostering empathy, acceptance, cooperation, healthy competition, socialization, and teamwork,
2. Equal participation of all students in activities, equal opportunities to gain experience,
3. Benefits derived from social interactions,
4. Raising awareness about disability and sports for all,
5. Encouraging active participation and interest in the course.

**Physical infrastructure components:**

Projector, computer (PowerPoint, MindMap, Video, Digital Comic, Digital Quiz) for in-class instruction; basketballs or soft balls, cones, chairs, and basketball hoops (standard or low) for outdoor schoolyard practice.

**Brief description:**

- The command style will be utilized throughout the practical exercise conducted in the schoolyard, with students undertaking the designated activities.
- The inclusive style (aimed at ensuring all students can participate through accommodations).
- The guided discovery style (which is implemented during the presentation through questions that students are asked to answer, as well as at the end through a quiz).

**Classroom organization:**

Students first watch a presentation and a video in class related to the subject matter. Subsequently, students are initially paired for exercises and skill development within the

schoolyard, followed by regrouping into smaller teams for recreational activities at the conclusion of the lesson.

**Role of the teacher:**

The teacher guides, motivates, ensures the equal participation of all students, and uses ICT to provide information about and foster understanding of the sport and the concept of disability.

**The benefits derived from ICT:**

The integration of ICT effectively ignites student curiosity, enhances the clarity of sport concepts through audiovisual aids, provides swift evaluation via quizzes, and cultivates a more participative and captivating learning environment.

**Activities**

1st Activity (10 min) – Power Point Presentation

[https://docs.google.com/presentation/d/1fdMBW\\_UPu\\_fpvFpAMkfJ4BOLIOzIEu4z/edit?rtf=of=true&sd=true](https://docs.google.com/presentation/d/1fdMBW_UPu_fpvFpAMkfJ4BOLIOzIEu4z/edit?rtf=of=true&sd=true)

The link above provides an overview of the course, which analyzes the sport of wheelchair basketball. In parallel, our exploration of disability is conducted through questions associated with Paralympic sports (slide 2). Through the use of imagery, discourse, and questioning, students acquire knowledge of the sport's rules, methods of play, and performance techniques.

**2nd Activity (10 minutes) - Mind Map**

<https://go.bubbl.us/ef4402/c6bb?/Circle-Layout>

The link above presents the curriculum in the form of a concept map, which helps visually represent the basic concepts of wheelchair basketball and makes it easier to understand and connect them. Students are introduced to the basic characteristics of the sport, its rules, and how it is played, through visual aids, classroom discussion, and questions. Through this process, participants gain a deeper understanding of the sport and develop attitudes of respect, acceptance, and inclusion toward individuals with disabilities (In Greek language).



**3rd Activity (10 min) - Video**

<https://www.youtube.com/watch?v=Cu-T5oSe2xQ>

The initial video features children observing a wheelchair basketball game, including the execution of skills.

[https://www.youtube.com/watch?v=ys1ivXiej\\_A](https://www.youtube.com/watch?v=ys1ivXiej_A)

The second video presents and analyzes the course guidelines.

**4th Activity (10 min) – Digital Comic**

A digital comic will be produced by the students, focusing on integrating a student with cerebral palsy into the physical education curriculum ((In Greek language).

## Το χτύπημα του κουδουνιού



Οι μαθητές βγαίνουν στην αυλή και ανυπομονούν να ξεκινήσει το μάθημα της γυμναστικής

## Η νέα συμμαθήτρια



Η γυμνάστρια υποδέχεται την νέα μαθήτρια, την συστήνει στους υπόλοιπους μαθητές και προσπαθεί να την εντάξει στην ομάδα

## Προσαρμογή κανόνων



Η γυμνάστρια αναφέρει τον τρόπο με τον οποίο θα προσαρμοστεί το μάθημα στις ανάγκες όλων των μαθητών

## Δράση σε κύκλο



Η γυμνάστρια δίνει οδηγίες για το πως θα πραγματοποιηθεί η άσκηση

## Το καλάθι της ομάδας



Τα παιδιά παίζουν ένα ομαδικό παιχνίδι μπάσκετ, στο οποίο η μπάλα πρέπει να περνάει από όλους

## Τελικό μήνυμα



Η γυμνάστρια κάνει ερωτήσεις για γνωστική αξιολόγηση - κατανόηση συμπερίληψης

### 5th Activity (5 min) - Assessment Quiz

At the end of the teaching hour, students will answer a short digital quiz (In Greek language) regarding Wheelchair Basketball.

[https://wayground.com/admin/quiz/694ec904dd5eef7b7baf91cb?source=quiz\\_share](https://wayground.com/admin/quiz/694ec904dd5eef7b7baf91cb?source=quiz_share)

### Further capabilities

Students will subsequently participate in psychomotor drills, working in pairs or small groups to refine skills such as passing, dribbling, and shooting. Wheelchair basketball can be taught by students who have taken this course in classes at the rest of the school. Organized activities could include: inter-school mini-competitions (e.g., for the International Day of Persons with Disabilities, or through volunteer participation in Paralympic Day at School), sporting events (inviting parents to observe and engage in games), and excursions to open areas (such as a stroll to sports facilities).

### 3.0 CONCLUSIONS

The involvement of Information and Communication Technologies is paramount in this endeavor, specifically in presenting Paralympic sports to students within mainstream schools. Interactive media, multimedia presentation formats, and digital tools facilitate students' experiential and interactive acquisition of knowledge regarding disability types and their correlation with Paralympic sports (Patsi, 2025; Patsi & Evaggelinou, 2022; Patsi, Nikolaidou & Evaggelinou, 2025). Incorporating video into educational methodologies, coupled with the creation of presentations or narratives, serves to augment learning and stimulate collaborative and critical intellectual engagement (Patsi & Evaggelinou, 2025; Patsi, Kofidou & Evaggelinou, 2026).

The communication of information to students concerning: a) The categorization of disabilities, The Paralympic sports and specific wheelchair basketball, augmented by ICT, serve as a model for contemporary, inclusive educational settings that facilitate universal student participation, self-expression, and engagement with genuine narratives. In addition to fostering cognitive abilities, moral and social values, including respect, solidarity, and the acceptance of diversity, are also cultivated (Kalmpazidou et al., 2025).

The incorporation of wheelchair basketball into physical education classes, in combination with ICT, constitutes a modern and pedagogical approach that can enhance the learning process and promote inclusion. Engagement with Paralympic sports fosters enhanced knowledge, empathy, and respect for diversity, alongside improved cognitive, social, and motor skill development. The integration of digital tools and hands-on activities makes the lesson more interactive and engaging for all students. Therefore, implementing appropriate educational interventions can make a significant contribution to fostering a more democratic, equitable, and inclusive school environment.

### Online Resources

- <https://ikee.lib.auth.gr/record/283330/files/%CE%A0%CE%A4%CE%A5%CE%A7%CE%99%CE%91%CE%9A%CE%97%20%CE%95%CE%A1%CE%93%CE%91%CE%A3%CE%99%CE%91.pdf>
- <https://el.wikipedia.org/wiki/%CE%9A%CE%B1%CE%BB%CE%B1%CE%B8%CE%BF%CF%83%CF%86%CE%B1%CE%AF%CF%81%CE%B9%CF%83%CE%B7>

<https://docs.google.com/document/create?hl=en>

- <https://docs.google.com/document/create?hl=en>
- <https://bubbl.us/>
- <https://www.storyboardthat.com/articles/e/what-is-a-storyboard>
- <https://wayground.com/>

Conflict of Interest: The authors declare no conflict of interest.

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