

# Research Trend and Perspective of Teaching Ball Games in School Education in Japan

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**Анотація.** В освітніх рекомендаціях в Японії класифікація ігор з м'ячем ділиться на «голландський», «мережковий», «бейсбольний» тощо, і рекомендації фокусуються на «розумінні ігор». Однак результати не досягають інтелектуального «дедуктивного» рівня. Автор пропонує шлях для розуміння значущості процесу розвитку в конкурентній боротьбі, представляючи концептуальну схему, засновану на дослідженні теорії ігрової структури. Результати цього дослідження сприятимуть проведенню уроків фізичної культури, де можна створювати і грати «перед нами, тут і зараз». Для вирішення нових завдань Міністерство освіти, культури, спорту, науки та технологій Японії готує національну навчальну програму для шкіл та переглядає її приблизно раз на 10 років, починаючи з кінця Другої світової війни.  
**Мета.** Створення і впровадження в уроки фізичної культури ігрового методу. **Результати.** У навчальних рекомендаціях зміст, що розглядається в навчальній програмі з фізичного виховання, організований багатовекторно. При цьому, оскільки кількість навчальних годин, призначених для фізичного виховання, не перевищує кількості годин інших навчальних предметів протягом шкільного освітнього періоду, неможливо охопити всі види фізичної активності на уроках фізичної культури, та залучити тренера для кожного виду спорту. Незважаючи на це, ігри з видів спорту з подібними характеристиками згруповані разом, а деякі види беруться за прототип та практикуються в кожній групі.  
**Ключові слова:** ігри з м'ячем, адаптовані ігри, інтелектуальні спортивні ігри.

Osamu Suzuki

## RESEARCH TREND AND PROSPECTS FOR TEACHING BALL GAMES IN SCHOOL EDUCATION OF JAPAN

**Abstract.** In educational guidelines in Japan, the classification of ball games is divided into «goal-type», «net», «baseball», etc., and the recommendations focus on «understanding games». However, the results do not reach the intellectual «deductive» level. The author offers a way to understand the importance of the development process in competition, presenting a conceptual scheme based on the study of game structure theory. The results of this study will contribute to physical education lessons, where you can create and play «before us, here and now». To address the new challenges, the Ministry of Education, Culture, Sports, Science, and Technology of Japan is preparing a national curriculum for schools and revising it about every 10 years since the end of World War II. **Objective.** Creation and introduction of game method in physical culture lessons. **Results.** In the educational recommendations, the content considered in the physical education curriculum is organized in a multi-vector order. However, since the number of hours devoted to physical education does not exceed the number of hours of other subjects during the school period, it is impossible to cover all types of physical activity in physical education classes, and to involve a coach for each type of dispute. Nevertheless, sports games with similar characteristics are grouped together, and some sports are taken as a prototype and practiced in each group.  
**Keywords:** ball games, adapted games, intellectual sports games.

**Introduction.** Japan's Ministry of Education, Culture, Sport, Science and Technology (MEXT) has been preparing the national curriculum for schools and revising it about once every 10 years, since the end of World War II, to meet new challenges. The objectives and content of physical education programs are determined by the national curriculum (the educational guidelines for elementary, lower-secondary, and upper-secondary schools). Since the revision in 1977, post the high economic growth period, special attention has been paid to lifetime sports and games in physical education (PE) lessons. The national physical education curriculum in Japan was last revised in 2017 for elementary and lower-secondary schools and in 2018 for upper-secondary schools.

In the educational guidelines, the contents dealt with in physical education curriculum are organized into eight strands as shown in Tables 1 and 2. That said, since the number of class hours assigned for physical education is not more than that for other academic subjects in the entire school education, it is impossible to cover all kinds of sporting events in PE lessons and it is not realistic to appoint a specialized coach for each sporting event. Despite these limitations, ball games hold the largest share (about 30 %) in classes including required and elective strands at schools. Therefore, sporting events with similar characteristics are grouped together and some activities are taken as prototypes and instructed within each group.

In the current educational guidelines, ball games are grouped into three types: goal-type, net-type, and baseball-type, eliminating the need of naming individual sporting events. The intention is to emphasize the principle and concept, common to the same type or the entire category of ball games, that is, «understanding games» instead of focusing on a particular event. In other words, the way of thinking has

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Table 1. Scope of Activities and Range of Selection in Lower-Secondary School

Strand	Content	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year
A. Physical Fitness	Exercise for releasing the body and mind Exercise for enhancing physical fitness	* (both)	* (both)	* (both)
B. Apparatus Gymnastics	Mat work Horizontal bar Balance beam Vault box	* (either)		Selection of 1 or more items each from strands B, C, D, or G, and 1 or 2 items each from strands E or F
C. Track and Field	Short distance run and relay, long distance run, or hurdle run Long jump or high jump	* (either)		
D. Swimming	Crawl stroke Breast stroke Back stroke Butterfly	* (either)		
E. Ball Games	Goal-type games Net-type games Baseball-type games	* (either)		
F. Budo	Judo Kendo Sumo	* (either)		
G. Dance	Creative dance Folk dance Contemporary rhythmic dance	* (either)		
H. Theory of Sport and Physical Education	Diversity of exercise and sports Significance and results of exercise and sports Significance of sports as culture	* (both)	* (both)	* (both)

transformed: from the idea of how to get close to the «authentic soccer games» to how to value soccer by appreciating the flavor or seasoning in individual and specific «soccer-flavor games». From this new perspective, whether it is the final match of the World Cup or whether it is a game in PE lessons, it can be recognized as one of the variations of «soccer-flavor games».

Here, we outline the background of how this concept of teaching ball games has found support in Japan and investigate the achievements and challenges.

**Paradigm shift on teaching ball game.** In Japan, two alternative arguments on ball game instruction are fighting for superiority: One argument favors skill acquirement to play game event and the other emphasizes savoring the joy of game.

The former is a traditional approach. The discourse «you have to acquire a certain level of skill to play a good game» is, at first glance, convincing. However, if instructions are given while ignoring the context of the game and overlooking

the meaning of the technique or tactic, the situation-related characteristics of the technique are lost, which leads to a monotonous drill of performing routine activities. This may lead to an ironic consequence: only the recognition of «difficult techniques cannot be used in actual games» may be entrenched in learners' mind.

In the second approach, the emphasis is on functional properties of activities. Games are regarded as «activities to enjoy winning or losing under the relevant rules» and the goal of the lessons are to enjoy and have fun. However, in the actual lessons, after grouping and instruction of basic rules, games tentatively proceed, and the appearance of lessons can be maintained. The lessons become laissez-faire, making students play only games without learning any content because such teaching materials are easy to handle.

However, the teaching theory using tactical approaches advocated by Bunker and Thrope (1982) of

Loughborough University, UK in 1980s has attracted attention as an initiator to overcome this dichotomous picture and is now organized as the teaching approach called «Teaching Games for Understanding (TGfU)» [6]. In short, it emphasizes the skills and knowledge associated with games, and aims to improve «the game performance» including «off the ball movement» and «on the ball skill» [5]. Since this movement has been expanded not only to «Tactical Games» [10, 11] in North America but to «Game Sense» [2, 9] and «Play Practice» [8] in Oceania, and further to «Tactical Decision Learning» [4] in France, it is not hard to imagine that it has certainly made an impact on the development of «xx-type games» in Japan, too. The trigger behind the creation of TGfU was the changes in the issues of interest in PE lesson research. In other words, the research paradigm has changed from confirmation of the causal relationship between teacher behavior or student behavior during lessons and the achievements of

lessons or elucidating what knowledge about the content of PE lessons is, to the descriptions and interpretation of the condition in which the knowledge is built up in the relationship between learners and others.

The attempt to establish a new theory of knowledge in place of foundationalism originated from Descartes in the 19th century and has appeared in various academic fields. For example:

Regardless of our methods of procedure, what we call knowledgeable accounts of the world (including ourselves) are essentially discursive. And because disquisitions on the nature of things are framed in language, there is no grounding of science or any other knowledge-generating enterprise in other than communities of interlocutors. There is no appeal to mind or matter—to reason or facts—that will lend transcendental validity to propositions. (Indeed, both «mind» and «world» are themselves integers within the Western linguistic code.) Equally, the attempt to articulate universal principles of the right and the good, which stand

above and outside the hurly-burly of daily interchange, is misleading. In the end, all that is meaningful grows from relationships, and it is within this vortex that the future will be forged [3].

Within this new framework, efforts have been made to understand from the learners' point of view how they comprehend their own experiences. That is to say, there is a paradigm shift from behavioral reductionism to social constructivism.

Therefore, «understanding» in TGfU does not simply mean «learning the right way to deal with the problem» but involves appropriately grasping the trends of the «live» game in front of learners and taking specific and immediate measures against them. Such a concept is required as future ball game instruction positions learners as the subjects of critical thinking and «reflection in action» and «reflection on action» are promoted.

**Reconsideration of «understanding games».** The tactical behavior, which is an important aspect of TGfU is based on the need to select the most

appropriate action in terms of «what», «how», and «why» in various situations during a game. This is because in TGfU, the ability of «off the ball», on which more time is spent during a game, is believed to allow players to participate in the game substantially, rather than the ability of «on the ball», which is external and visible representation (action) of each ball game. Furthermore, the ability of «off the ball» acquired in a certain sporting event is expected to be applied, with some modifications, to other event within the same type even if the representation of «on the ball» is different [10]. Whether that expectation is met or not is analyzed by evaluation methods such as «Game Performance Assessment Instrument (GPAI)» [12]. There, the learning situations were observed based on the criterion, «good play = offensive/defensive action» in the existing ball games and the performance was evaluated by the achievements.

Although TGfU proved a turning point in the teaching of ball games across sporting events, it should be noted that it has not completely

Table 2. Scope of Activities and Range of Selection in Upper-Secondary School

Strand	Content	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year
A. Physical Fitness	Exercise for releasing the body and mind Planning exercise for actual life	* (both)	* (both)	* (both)
B. Apparatus Gymnastics	Mat work Horizontal bar Balance beam Vault box	Selection of 1 or more items each from strands B, C, D, or G, and 1 or 2 items each from strands E or F	Selection of 2 or more items each from strands B~G	Selection of 2 or more items each from strands B~G
C. Track and Field	Short distance run and relay, long distance run, or hurdle run Long jump, high jump, or triple jump Shot put or javelin throw			
D. Swimming	Crawl stroke Breast stroke Back stroke Butterfly			
E. Ball Games	Goal-type games Net-type games Baseball-type games			
F. Budo	Judo Kendo			
G. Dance	Creative dance Folk dance Contemporary rhythmic dance			
H. Theory of Sport and Physical Education	(a) (b) (c)	* (both)	* (both)	* (both)

accomplished «formation of knowledge beyond sporting events». Here, «beyond» means formation of a meta-level concept by inductive inference from the accumulated individual cases and deduction of other individual cases based TGFU, that is, the freedom of going back and forth between abstract and concrete concepts just like going back and forth between the top of a mountain and a village at the foot of the mountain. Therefore, for example, even if a player can move well in a soccer game with hints from «off the ball movement» acquired in a basketball lesson, it is not a deduction of the abstract concept of «goal-type games» but a copy and paste of a similar case. If you do not climb a mountain (general theory of games), you cannot get the whole view of the villages (individual game) at the foot of the mountain.

Such situation largely emerges from the fact that the existing argument over classification of sporting events only results in defining the sporting events [7]. The residual effect of «the sporting event-oriented approach» can still be seen, that is, the intention to follow the action guide established with reference to the offensive/defensive performance exerted by skilled players of each sporting event, namely the intention to «become like a player». Therefore, even if a task game or drill game, in which a specific tactical behavior in the game is zoomed in and modified, is applied, it can be hardly anticipated that the achievements will bear fruit beyond sporting events because the player acquires proficiency in solving problems in a specific scene, which only leads to improvement of skills in the sporting event. This reveals the limit of the idea of «taking down from» sporting events.

Of course, «offense and defense» in a game relates to the player's relationship with an opponent, which is triggered by a relevant action. The action itself is not immediately fulfilled as «offense and defense». That is, «offense and defense» is not the substance concept of «doing» but the relational concept of «becoming (like)», resulting from how the concerned persons see each other's behavior or events caused by it on the field [19]. With this in mind, instead of

observing and evaluating with «test each other» before your eyes as a process of an action (defense/offense), a new observational perspective of reviewing and understanding is developed as a process of semantic construction, which survives right in front. This prepares the players for the fundamental change in the philosophy of teaching ball games from correctly solving (optimization) technical/cognitive issues to facing (conformation) the ongoing issues appearing right in front convincingly and prospectively.

**Process of semantic construction in «competition».** Ball games emerge as events in which the ability to perform physical activities is competed in conformity to a certain form using a ball as a medium. In this way, it may sound as if the said form itself, that is, «the way to compete each other», is the distinguishing mark from other games. However, it is obvious that «the mutual competition» has already been implemented using balls, though primitively, long before various techniques and tactics (the way to compete) which are now widely accepted were recognized. Thus, it can be acknowledged that those who participated in the game had at least a clear idea of the objective, such as to compete each other «what» (putting aside «how»), for which they have to exert their ability to perform physical activities.

The essential element of ball games is a competition with a future unknown result (the objective of competition). A series of studies on «Game Structure Theory» have clarified the relationship between the various activities of learners (extension of concept) and learned contents (intention of concept) through organization of objectives, tasks and the processes involved in task-solving [13–21]. The results are as follows:

Although there are several types of ball games, all of them include one of two distinct objectives: (1) transferring the ball to the destination or (2) transferring the player to the destination.

First, when aiming to «transferring the ball to the destination», moving the ball to the destination by applying physical force (carrying, throwing, kicking, hitting, etc., hereinafter referred

to as «progression») is the main task at hand and the player makes an effort here, however, success or failure of the player is uncertain due to the factors such as difficulty in handling the ball or equipment, physical barriers, or obstruction by others. In order to engage in the progression, it is indispensable, of course, to keep the ball in hand (hereinafter referred to as «possession»). Therefore, the challenge in this type of game is «advancing the ball (progression) without losing it (possession).

In the game where the possession is always secured (each player handles his/her own ball), handling the ball freely itself, which is accompanied by a certain difficulty, produces the uncertainty about success or failure. With success in overcoming the difficulties, the progression is fulfilled in the form of «hitting on the target».

On one hand, in a game type where there is direct obstruction and thwarting (e.g. tackling, interception, etc.) from the opponent and the possession is uncertain (it is not decided who possesses the ball), the player tries progression while competing with the opponent. Ultimately, the efforts for progression reach 100 % (= possession is no longer necessary) resulting in conquest of the target point, that is, «territory expansion» covers the entire field.

On the other hand, in a game type where the field is separated geographically from the opponent (via net, line, etc.) and the possession is uncertain, the opponent does not prevent the play directly. Here, the uncertainty of success or failure of possession and progression can be addressed by applying certain restrictions to the handling of the ball. The player tries to fail the opponent by circulating (= rallying) a series of process from possession to progression. When this trial is successful, «the intentional termination of rally» is accomplished. There are two types of circulation: one that is limited to being carried out all alone in a unified manner, and in the other division of the circulation by multiple players is accepted note 1 ).



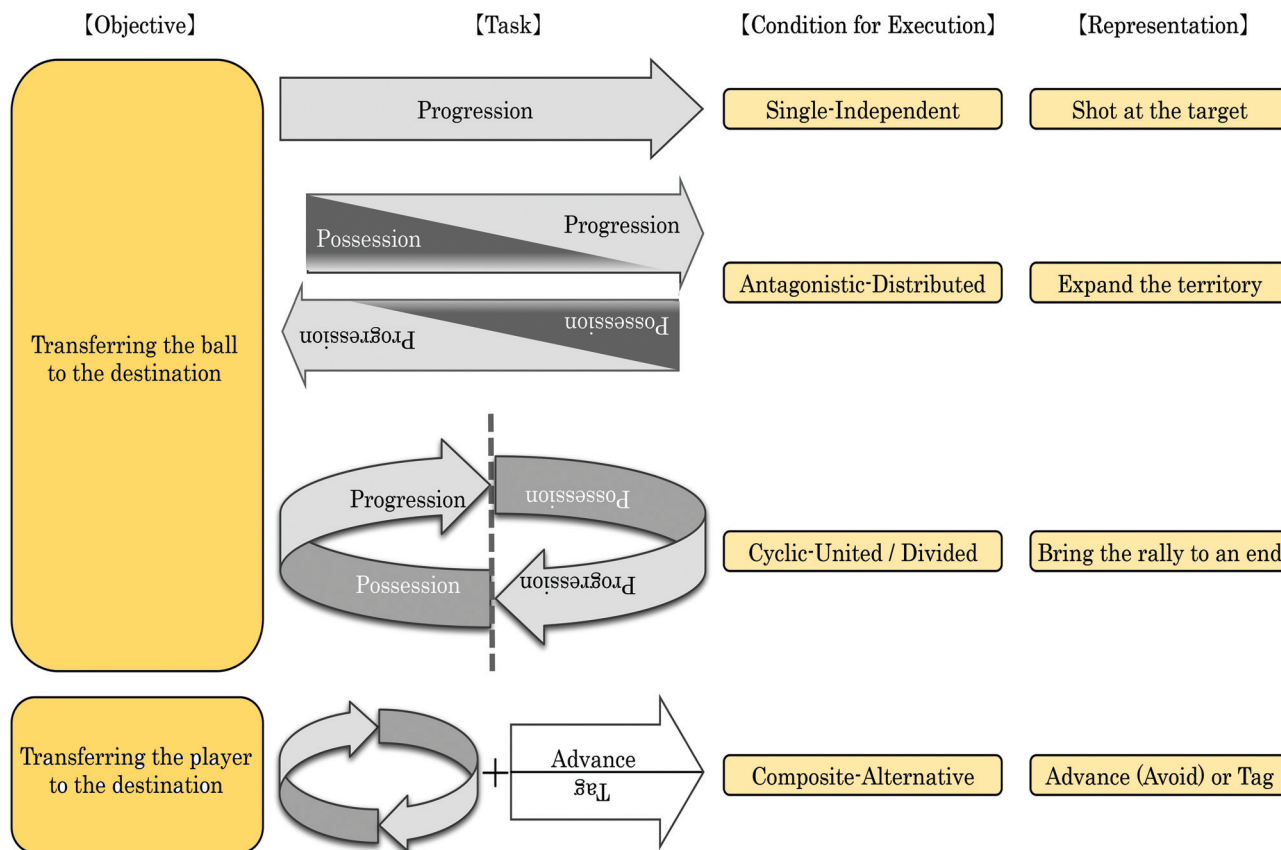


Figure 1 – The essential component of ball games

Second, the logic where the success or failure of «transferring the pleyer to the destination» becomes uncertain can be grasped through the metaphor of «tag» note 2). In tag, the person holding the ball becomes a tagger and it is he/she who can prevent the runner from advancing. The team with the tagger performs tag changing ball-holder (tagger) by throwing and catching the ball. The runner tries to reach the final destination (home base) going through the safety zones (bases) in sequence in order to escape the tag but is disqualified if he/she is tagged outside the base or ambushed note 3) by the tagger who reaches the next base first.

To sum up, it can be understood that the game, that is, «test each other where success or failure is uncertain» using a ball as the medium, is established based on the mechanism shown in Figure 1. Though this view highlights the representation that appears as a consequence of each game, attention should be paid especially to the fact that this representation is a proof not of «optimization» but of «conformation».

This is because there are many concrete ways of «hitting on the target», «territory expansion», «the intentional termination of rally», or «(escaping from) tag» and it is impossible to judge which is superior or inferior or good or bad using a specific form as an indicator. Rather, what is required in the field of instruction is to elucidate, from the viewpoint of persons concerned, what kinds of structural problems are expected in «test each other» performed right in front, how these problems «in front of us now» are found out and what measures are being taken. In order to grasp what kind of images are formed or not in the eyes of those who can live in the world of the relevant «test each other», it is necessary to understand in what types of task-performing process «test each other» in that world is involved. In addition, it is necessary to ascertain as to what kind of representation the challenge, «successful shoot = effective participation in the game», appears.

**Conclusion.** With the advent of constructivist approach including TGfU, the attempt to grasp «the power to be

learned in ball games» from the learners' perspective has greatly advanced. Conventionally, curriculum creation tended to focus on arranging the existing sporting events but the recent research findings on ball game instruction have greatly contributed to the development and improvement of curriculum from the perspective of specific learning contents.

In addition, it is possible to grasp accurately the specific problems appearing in front of the learners «here» «now» from the viewpoint of «xx-flavor games» in actual lessons and is also possible to construct the process of solving these problems as meaningful experience for the learners. It is, so to speak, a transition from a «official (optimized) game» to «learner-conformed game».

However, many efforts have been made to devise processes to modify the existing institutionalized sports into teaching materials in actual lessons, both domestically and internationally. However, «xx-flavor games» in this paper are different from such «games taken down from official (optimized)

games». Rather, it refers to «our games» that are created by the persons involved in the games actually «here» «now» on their own initiative. The movement that invites the learners to the «meaningful world» has just started and further accumulation of theoretical and practical research findings is awaited.

#### Footnote:

1) Games are distinguished into two types: 1) the games where possession and progression are performed in a unified manner depending on the barrier (e.g., net) between own team members and opponents, situations (e.g., height), and flight characteristics of a ball (e.g., tennis, ping-pong, badminton); and 2) the games where division of work by multiple players is accepted (e.g., volleyball, sepaktakraw).

2) Recalling the practical games of baseball or softball, many tag games have a prominent «gateway» procedure and the same is recognized in this tag game. In a primary game that precedes the tag game, possession and progression are circularly performed, like a pitcher throws a ball, a batter hits it, and fielders try to catch it (hopefully before the ball touches the field). If the batter succeeds in progression (i.e.,

fielders get possession before the ball touches the field), the batter turns into a runner, which starts the tag game.

3) If the runner is determined to aim for the next base, when the tag reaches the relevant base first, the tag is regarded as executed (forced-out) and the relevant contest each other can be immediately terminated.

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