ORIGINAL ARTICLE

The impact of baskin on promoting inclusion in a secondary school

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ABSTRACT

The impact of Baskin on promoting inclusion in a secondary School is one of the fundamental goals in the education of adolescents with and without disabilities. Baskin, an inclusive sport inspired by basketball, aims to encourage the active participation of all students regardless of their physical and cognitive abilities. This experimental study with a randomised parallel group design investigated the effects of a Baskin programme (12 weeks, two sessions per week) on class cohesion, self-esteem and inclusive attitudes in a secondary school. At the end of the intervention, the experimental group showed a significant improvement in all indicators of social inclusion and psychophysical well-being compared to the control group. The results highlight the potential of Baskin as an educational sport strategy to promote inclusion and the overall development of students.

Keywords: Physical education, Educational sport, Self-esteem, Class cohesion.

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INTRODUCTION

In recent decades, school inclusion has emerged as a guiding principle in national and supranational education policies, in harmony with the UN Convention on the Rights of Persons with Disabilities and Goal 4 of the 2030 Agenda, which aims to 'ensure quality, equitable and inclusive education for all' (UNESCO, 2009; UNESCO, 2020). The underlying assumption is that every student, regardless of physical, cognitive or sensory abilities, should be able to participate fully in school life and benefit from equal learning opportunities (Armstrong, 2003). Within this framework, physical education and sport have a strategic role to play: the cooperative nature of motor activities promotes peer interaction, the development of social-emotional skills and the creation of a positive classroom climate (Avramidis & Norwich, 2002; Sabo & Veliz, 2008). Empirical evidence suggests that team experiences, when well structured, enhance a sense of belonging, empathy and pro-social behaviour (Lindsay et al., 2020). Conceived in Italy in the early 2000s, Baskin is one of the most innovative proposals in the field of inclusive sport: it retains the competitive logic of basketball but introduces flexible rules, baskets at different heights and differentiated roles to make each participant indispensable to collective success (Bortolotti & Tavazzi, 2020). Qualitative studies have reported benefits for group cohesion, self-efficacy and acceptance of diversity (Zoia, 2016; Cummings, 2018). Nevertheless, controlled experimental evidence remains scarce, particularly in secondary school contexts (Kasser & Lytle, 2013; Healy, Msetfi & Gallagher, 2022). In light of this gap, the present paper uses a parallel group randomised design to assess the effects of 12 weeks of Baskin on:

1. Class cohesion;
2. Self-esteem;
3. Inclusive attitudes towards peers with disabilities.

It is hypothesised that the experimental group will show significantly greater improvements than the control group on all the psychosocial indicators considered.

METHODS AND TOOLS

Studio drawing

The study used a randomised parallel group design with pre- and post-intervention measures, similar to what has been proposed in previous research in inclusive sport settings (Kasser & Lytle, 2013). The total duration of the intervention was 12 weeks, with two weekly Baskin sessions of 50-60 minutes each for the experimental group, while the control group followed a normal PE curriculum without Baskin.

Participants

The final sample consisted of 44 secondary school students (aged 14-15 years), of whom 22 were assigned to the experimental group and 22 to the control group. The sample size was determined on the basis of a statistical power analysis (G*Power 3.1.9.6), which suggested a minimum of 36 participants to detect a medium effect size with $p < .05$ and 80% power. A slightly higher initial number (44) was chosen to compensate for potential drop-outs.

Inclusion criteria

1. Age between 14 and 15 years;
2. Absence of medical contraindications to physical activity;
3. Regular attendance at Physical Education classes.

Exclusion criteria

1. Absences of more than 20% of the lessons;
2. Lack of informed consent from parents/legal guardians;
3. Specific medical situations arising during the study.

All students and their families signed an informed consent form in accordance with the Declaration of Helsinki as amended (World Medical Association, 2013). The study was approved by Department of Medical, Human Movement, and Well-being Sciences—University of Naples "Parthenope" (DiSMMeB Prot. N. 88592/2025).

Randomisation

Simple randomisation was used to assign students to the two groups (Tafuri et al., 2024): participants were numbered and assigned to the experimental or control group by random number extraction using special software. The staff responsible for the statistical analysis were unaware of the allocation of participants.

Baskin' schedule

The experimental group participated in 24 sessions (two per week for 12 weeks; 50 60' each) designed according to the principles of inclusive physical activity (Kasser & Lytle, 2013) and the guidelines of the Italian Baskin Association (Bortolotti & Tavazzi, 2020). Each session consisted of four phases:

Table 1. Baskin didactics programme.

Phase	**Duration Time**	**Key Goals**	**Strategies/methodologies**
Inclusive Warm-up	10'	Motor activation, socialisation	Invitation' games (lap ball, mirror walking), leading in mixed pairs, using soft balls or ramps.
Technical-tactical workshop	25-30'	Adapted learning fundamentals	Rotating stations (<6 students) on passing, shooting and dribbling; vertical peer tutoring; immediate feedback
Game/match situations	10-15'	Transferring skills in a competitive environment	Skills transfer in a competitive environment Mini-match 4 vs 4/5 vs 5 with 0-5 roles and multiple baskets; role rotation every 5'.
Reflective debriefing	5'	Consolidating social-emotional learning	Circle time: each student shares a success and a goal for improvement

Weekly progression:

- Weeks 1-2: Familiarisation with the rules, definition of roles, agreement on visual communication routines.
- Weeks 3-6: Development of basic skills; cooperative micro-challenges to strengthen cohesion.
- Weeks 7-10: extended matches with compulsory role rotation; introduction of team goals.
- Weeks 11-12: internal tournament between mixed teams, with joint formative evaluation by teachers and students.

Inclusion support devices:

- Co teaching (EF teacher + support teacher).
- Structured peer tutoring.
- Individual motor skills portfolio (monitored every fortnight).
- Adapted materials: balls of different sizes/weights, adjustable baskets, numbered bibs indicating roles, colour markers for the shooting areas.

The control group attended two lessons per week of traditional physical education (volleyball, standard basketball, basic athletics).

Evaluation tools

- Class Cohesion Questionnaire (QCC): adaptation of a validated instrument (Di Palma et al., 2023) with 15 items on a Likert scale (1 = strongly disagree; 5 = strongly agree) to measure cooperation, respect and group climate.
- Rosenberg Self-Esteem Scale (RSES): 10 items with scores ranging from 0 to 30, with higher scores indicating higher self-esteem (Rosenberg, 1965). It is a widely used measure in youth research (Boardley, 2013).
- Inclusive Attitude (AI) Scale: 8 items constructed from previous studies on school inclusion (Avramidis & Norwich, 2002; Zoia, 2016) to assess students' propensity to support and accommodate peers with different abilities. Items were rated on a Likert scale (1-5).

The evaluations were carried out before the start of the programme (T0) and after 12 weeks (T1), during school hours, to ensure the anonymity of the participants.

Statistical analysis

The evaluations were carried out before the start of the programme (T0) and after 12 weeks (T1), during school hours, to ensure the anonymity of the participants. Analyses were carried out using IBM SPSS® software (version 25.0). A repeated measures ANOVA (time: T0 vs. T1 × group: experimental vs. control) was performed for each of the variables studied (QCC, RSES, AI). In case of significant interactions, paired t-tests were performed for pre-post comparisons within each group. A significance level of $p < .05$ was used (Cohen, 1988).

RESULTS

Class cohesion

The repeated measures ANOVA revealed a significant group × time interaction ($F(1,42) = 10.34$; $p < .01$; $\eta^2 = 0.42$). Specifically, the experimental group achieved a mean increase of 5.2 points ($p<0.001$) on the QCC scale (mean increased from 45.1 ± 5.0 to 50.3 ± 5.2), whereas the control group experienced a minimal and non-significant increase (+1.0 point; $p > .05$).

Self-esteem

For the Rosenberg scale, the interaction group × time was significant ($F(1,42) = 8.88$; $p < .01$; $\eta^2 = 0.35$). In the experimental group the mean increased from 18.3 ± 2.1 to 22.6 ± 2.4 ($p < .001$), whereas in the control group the increase was smaller (from 18.1 ± 2.0 to 19.0 ± 2.3; $p > .05$). These data confirm the effectiveness of an integrative sports programme in improving self-perception in adolescents (Sabo & Veliz, 2008).

Inclusive attitude

The Inclusive Attitude scores also showed a significant interaction ($F(1,42) = 9.42$; $p < .01$; $\eta^2 = 0.39$). The experimental group increased from a mean of 24.5 ± 3.1 to 27.6 ± 3.3 ($p < .01$), whereas the control group showed a non-significant increase (from 24.3 ± 3.0 to 25.2 ± 3.2; $p > .05$). This suggests that Baskin may contribute to increasing boys' propensity to welcome and support peers with different abilities (Cummings, 2018).

DISCUSSION

The Inclusive Attitude scores also showed a significant interaction ($F(1,42) = 9.42$; $p < .01$; $\eta^2 = 0.39$). The experimental group increased from a mean of 24.5 ± 3.1 to 27.6 ± 3.3 ($p < .01$), whereas the control group showed a non-significant increase (from 24.3 ± 3.0 to 25.2 ± 3.2; $p > .05$). This suggests that Baskin may contribute to increasing boys' propensity to welcome and support peers with different abilities (Cummings, 2018).The results obtained underline the effectiveness of Baskin in promoting inclusion and well-being in a school context, confirming previous research on the importance of adapted sporting activities in fostering group cohesion, self-esteem and inclusive attitudes (Bortolotti & Tavazzi, 2020; Zoia, 2016). This evidence appears to be in line with more recent studies that highlight how the inclusion of inclusive sports practices, with specially calibrated rules, can facilitate the active participation of students with and without disabilities, improving their perceptions of self-efficacy as well as school motivation (Darcy & Lock, 2020; Mladenov, 2022). The significant increase in class cohesion scores found in the experimental group is consistent with a growing body of literature highlighting how team sports can act as a means of creating a climate of collaboration and mutual support (Avramidis & Norwich, 2002; Lindsay et al., 2020). Basketball in particular is characterised by the need for collaboration between peers with different abilities, making each participant an active and valued part of the group (Cummings, 2018). This promotes the reduction of relational barriers and the construction of a positive collective identity, as noted in a number of studies that highlight the power of the group to support itself in everyday school challenges (Healy, Msetfi & Gallagher, 2022). Furthermore, according to the most recent international guidelines on inclusive education (UNESCO, 2020), interventions that promote collaboration between students with and without disabilities play a crucial role in building a more cohesive classroom climate that respects diversity. Indeed, the game dimension, typical of Baskin, stimulates empathy and solidarity (Darcy, Maxwell & Edwards, 2023).

The improvement in self-esteem, especially in the experimental group, is consistent with the proposition that an inclusive sport context can increase self-perception and confidence in one's abilities (Rosenberg, 1965; Boardley, 2013). Receiving positive feedback from peers and the teacher, playing a meaningful role in the game and experiencing small personal successes are factors that increase satisfaction and motivation (Sabo & Veliz, 2008). Recent studies on adolescents and integrated sport highlight how the collaborative structure and the possibility of adapting the game to each student's abilities lead to improvements not only at the motor level, but also at the emotional and identity level (Freire, Marinho & Monteiro, 2022). Such a dynamic seems particularly relevant in the adolescent phase, where the need for recognition and belonging is high (Graham, 2021). By emphasising everyone's participation, Baskin allows even students with reduced motor or cognitive abilities to feel an active part of a shared project, increasing their self-esteem and self-acceptance. Basketball's ability to reinforce inclusive attitudes lies in its focus on recognising and valuing diversity (Bortolotti & Tavazzi, 2020).

The adaptation of rules and the articulation of playing spaces force students to reframe their notion of 'ability' and focus on the unique competencies of each teammate (Cummings, 2018). This can help to overcome stereotypes and prejudices and encourage the development of positive peer relationships (Mladenov, 2022).In a broader perspective, Baskin fits into an international debate on the use of innovative teaching methodologies aimed at promoting a culture of inclusion (Kasser & Lytle, 2013; Darcy & Lock, 2020). The data from this study showing a significant increase in inclusive attitudes reinforces the idea that well-designed sport interventions can be an effective tool for diversity education (Zhang, 2022). Furthermore, recent literature highlights how inclusive attitudes, when cultivated in the school environment, can have positive effects outside of the educational context, influencing young people's ability to interact empathetically and respectfully in everyday life (Darcy, Maxwell & Edwards, 2023).

Limitations and future prospects

Although the data confirm the beneficial effects of Baskin, the study has some methodological limitations. The 12-week duration does not make it possible to determine whether the benefits observed are sustained in the long term, and the lack of remote follow-up makes it difficult to assess the stability of the behavioural changes. It would be desirable in future research to introduce a more in-depth qualitative evaluation (e.g. through field observations or interviews with students) in order to understand the psychological processes underlying the changes that occurred.

Secondly, the small sample size and single school affiliation limit the generalisability of the findings. Future studies could enlarge the sample, include institutions with different socio-cultural characteristics, or evaluate the effectiveness of Baskin with other age groups. Finally, it would be interesting to compare Baskin with other inclusive sports or with different innovative teaching methods in order to identify similarities and differences and to highlight common success factors (Freire, Marinho & Monteiro, 2022).

CONCLUSIONS

The findings of this study provide robust experimental evidence on the effectiveness of Baskin in promoting inclusion and well-being in upper secondary school. In line with systematic reviews on inclusive sports (Darcy & Lock, 2020; Darcy, Maxwell & Edwards, 2023), the 12-week intervention produced significant improvements in class cohesion, self-esteem, and inclusive attitudes.

From an applied perspective, integrating Baskin into the Physical Education curriculum can:

- Enhance school motivation and active participation of both students with and without disabilities, thanks to differentiated yet equal roles (Cummings, 2018; Healy et al., 2022);
- Promote socio-emotional skills (empathy, collaboration, shared leadership) that are fundamental for active citizenship (Lindsay et al., 2020; Freire et al., 2022);
- Support the goals of equity and quality education set out in the 2030 Agenda, providing a replicable model of adapted sports practice (UNESCO, 2020).

From a scientific standpoint, the data confirm that the cooperative dimension and the interdependent role structure typical of Baskin are effective levers for reducing stereotypes and fostering prosocial attitudes towards disability (Mladenov, 2022; Zhang, 2022). This highlights the need for further longitudinal and multicentric studies to:

- Assess the stability of the effects beyond the three-month period;
- Analyse the psychological mechanisms (self-efficacy, motivational climate) mediating the observed outcomes;
- Compare Baskin with other inclusive disciplines to identify both specific and cross-cutting success factors.

Ultimately, Baskin emerges as an educational sport tool capable of combining playfulness with equity, contributing to the construction of more cohesive and respectful school communities — and, by extension, social communities. The large-scale adoption of similar programmes, supported by adequate teacher training and minor infrastructural adaptations, could represent a concrete step towards a truly inclusive school, in line with UNESCO recommendations (2020) and the most recent evidence on sport and inclusion (Darcy, Maxwell & Edwards, 2023).

AUTHOR CONTRIBUTIONS

The authors noted that there was equal participation in the elaboration of this document.

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DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

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