

Effects of the linear vs. variable training approaches on perceived enjoyment and technical competence in high school students

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Purpose: During high-school physical education classes, it is important that students perceive high enjoyment and competence, in order to promote an active lifestyle and decrease the future incidence of sport dropouts. The purpose of this study was to compare the impact of a linear approach (keeping constant technical parameters during exercises, in a block exercise structure) and a variable approach (varying continuously technical parameters during the exercises, in a randomized exercise structure) when teaching basketball in high school physical education classes, on students' enjoyment and perceived competence.

Methods: 119 male students (age: 16.4 ± 1.7 years; height: 174.7 ± 7.2 cm; weight: 68.4 ± 12.4 kg) and 16 female students (age: 16.1 ± 1.4 years; height: 161.4 ± 8.8 cm; weight: 62.2 ± 13.9 kg) were involved. Group A was composed by 88 students (77 males, 11 females, from 5 different classes) and performed 3 basketball training sessions (2 hours per week, for 3 weeks) characterized by a variable training approach, while group B was composed by 47 students (42 males, 5 females, from 3 different classes) and followed the same training schedule, using a linear training approach. After the last basketball class, students completed an anonymous questionnaire based on a 7-point likert scale on enjoyment and perceived competence, corresponding to the interest/enjoyment and the competence subscales of the IMI scale.^[1]

Results: Group A showed a mean enjoyment of 4.83 ± 1.38 (on a maximum of 7) and a perceived competence of 4.59 ± 1.78 (on a maximum of 7), while group B had an enjoyment of 5.40 ± 1.18 and a perceived competence of 5.12 ± 1.40 . There was a significant difference ($p < 0.05$) in the perceived enjoyment between groups ($ES = 0.41$) and an almost significant difference ($p = 0.06$) in the perceived competence between groups ($ES = 0.30$).

Conclusions: The results demonstrate that a linear training approach may be preferable in high school compared to a variable approach as it allows students to perceive higher enjoyment and competence after 3 basketball classes. These findings may be related to a higher success rate during linear exercises, compared to a differential structured lesson, that promotes a more positive approach towards physical education lessons, reducing the amount of failure experienced by students during these activities.

These results are interesting, as it is known that a variable technical approach tends to more effectively enhance motor skill learning, mainly regarding skill transfer, compared to a linear technical approach;^[2] it is important to consider though that in a school context it may be more important to

focus on perceived enjoyment and competence rather than objectives improvements in sport performance, as those aspects appear important in promoting an active lifestyle.

This study highlights that, during physical education classes in a high school, a linear technical approach is preferable when compared to a differential approach as it stimulates more perceived enjoyment and competence in students.

Key words: high school, students, linear training, variable training, enjoyment, technical competence, basketball, IMI scale, physical education

Reference:

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