PHYSICAL AND SPORT EDUCATION TESTING BY QUANTITATIVE AND QUALITATIVE TOOLS IN ASSESSMENT IN SENIOR SCHOOL: A PROPOSAL

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Abstract

What is commonly referred to as evaluation is the result of two operations, the first of which is represented by the measurement/evaluation and the other by the assessment. The assessment is a milestone in the teaching-learning process both for the teacher who, thanks to objectives tests, can assess the student’s performance, and for the pupils who, through the data collected by the teacher can achieve a self-assessment of the developed competences and so stimulate the learning process. This study, carried out in lower junior secondary school, points out the improvements obtained by 20 students through quantitative tests in the first term; during the summative evaluation of the first term, the students were submitted to a questionnaire that enables them to self-evaluate and assess the importance of the objective tests used by the teacher. The goal is to highlight the importance of self-assessment in the teaching-learning process also as a motivation instrument for the learner. Specifically, the aim of this study is to search a testing model for physical and sport education in senior school students and to verify the relation between quantitative and qualitative aspects for themselves. Method is experimental according to case study theory. The results show improvements in quantitative variables, while the self-perception questionnaire showed that 73% of the students feel more motivated in performing physical activities knowing they are subjected to quantitative tests. In conclusion, the assessment is a milestone in the teaching-learning process as it allows you to analyze the initial situation, check and re-orient the educational choices, make a summative evaluation of the school year.

Key words: self perception, evaluation, questionnaire, shuttle, long jump

Introduction

Working in education means developing projects in which evaluation can be a means of promoting the training dynamic both the recipients, and the institutions and the bodies that take responsibility it (Altavilla, Raiola, 2015, 2014). It is in this way that the assessment becomes research in view of an educational act and takes the form of a constantly subjected to critical reflection intent, subject to continuous enrichment beginning from practical experiences. What is commonly referred to as evaluation is the result of two operations, the first of which is represented by the measurement and the other by the assessment (Raiola, Tafuri, 2015 abc, Gaetano Rago, 2014). The assessment is a milestone in the teaching-learning process both for the teacher who, thanks to objectives tests, can assess the student’s performance, and for the pupils who, through the data collected by the teacher can achieve a self-assessment of the developed competences and so stimulate the learning process (Raiola, 2015ac). This study, carried out in a junior school (Gaetano, 2012ab), as well as in primary and preschool (Raiola, 2011ab), detected through testing quantitative improvements made by 20 students in the first term besides, it allows student, by filling in a self perceptive questionnaire, to evaluate themselves and to stress the importance of evaluation also as a motivating instrument in the teaching-learning process. The testing could be proposed at the disabled student or special needs students (Altavilla et al., 2015ab, Gaetano et al., 2015ab) without the specific parameters. In the same way, it has realizable for the specific evaluation parameters such as balance and posture (Raiola et al., 2016abc, Altavilla et al., 2015, Guetano et al., 2015). The mental health and the testing is the other field to be should be investigated (Raiola 2015b, Raiola et al., 2015b). It is the teacher’s job to find out the most appropriate test to assess the skills of his students considering the spaces and the available equipment. To evaluate the state of art of his teaching method (Altavilla et al., 2014a, Raiola 2014ab, Raiola et al., 2014ab) is the specific goal of the teachears of physical education and the trainers of sports (Parisi, Raiola, 2014ab, Polidoro et al., 2013, Napolitano et al., 2013abc, Raiola et al., 2016a, Raiola et al., 2015a, Raiola et al., 2013abc, Raiola, 2012, Raiola, Di Tore 2012abcd, Tursi et al.,
The assessment in physical education and sport has to consider the technological aspects in a virtual vision of exercise and sport science (Di Tore, Raiola, 2012abc). Students underwent qualitative/quantitative at the beginning of the term as initial evaluation and, at the term as a summative evaluation. The goal is to highlight the importance of self-assessment in the teaching-learning process also as a motivation instrument for the learner. Specifically, the aim of this study is to search a testing model for physical and sport education in senior school students and to verify the correlation between quantitative and qualitative aspects for themselves.

Methods

Method is experimental according to case study theory. The selected tests were submitted to twenty 11 to 13 year old students (including 10 M and 10 F) who practice physical education twice for a week. The quantitative tests used are as following.

1) Long jump from standstill which assesses the strength of the lower limbs. Objective: To measure the explosive force of the lower limbs which affect the degree of student’s coordination and the length of the limbs jump.

   Task: Perform a long jump as far as possible starting from the standing position. Equipment: 2 rugs and some adhesive tape to demarcate the starting point. Test description: From a standing position bend your legs and bring your arms back, then make a leap forward and upward with the aid of the momentum of the arms. Measurement: measure the distance in centimeters from the heel to the starting line. It is rated the best jump of 3 executed.

2) Shuttle 4 x 12 meters. Objective: running speed with change of direction.

   Task: fetch two clubs placed over the 12 meters line as quickly as possible. Equipment: adhesive tape to mark the lines, clubs and stopwatch.

   Test description: at the signal run to the opposite line to that of departure and take the first single club bringing it back.

   The exercise is repeated twice collect both clubs.

   Measurement: measuring the time taken in the execution of the task completed.

3) The self perception questionnaire was developed with questions useful stimulate the students’ self-evaluation; besides through these questions, it is stressed the importance of evaluation tests as a motivating reinforcement for the students.

Questionnaire of self-perception

1) Do you think 2 weekly lessons of physical education can help you to improve your skills?
   - Yes I do
   - No I don’t

2) Have you practiced with care and seriousness?
   - Yes I have
   - No I haven’t

3) Have you listened to your teacher’s advice?
   - Yes I have
   - No I haven’t

4) Did you find the tests difficult?
   - Yes I did
   - No I didn’t

5) Do you think to be improved between performance of the first and the second test?
   - Yes I do
   - No I don’t

6) Do you consider your performance in the second test of the shuttle test sufficient?
   - Yes I do
   - No I don’t

7) Do you consider your performance in the second sufficient evidence of the tests in the long jump?
   - Yes I do
   - No I don’t

8) Do you feel more motivated during the hours of physical education knowing that you will need to be assessed by quantitative tests?
   - Yes I do
   - No I don’t

Results

Table 1. lower limbs strength test. Long Jump Still (in meters)

![Table 1](image)

Table 2. speed test Shuttle 4 X 12 mt.(in seconds)

![Table 2](image)
Table 3. Questionnaire of self-perception.

Conclusion

The results show improvements in quantitative variables, while the self-perception questionnaire showed that 73% of the students feel more motivated in performing physical activities knowing they are subjected to quantitative tests.

The assessment is a milestone in the teaching-learning process as it allows you to analyze the initial situation, check and re-orient the educational choices, make a summative evaluation of the school year. For the evaluation tests students are a useful tool for self-assessment process that contributes to the improvement of the levels of knowledge, performance and consequently to educational success. The same tests will then be repeated at the end of the year as a summative evaluation of the entire school year. Teaching method in Physical Education has to include several educational strategies to improve the attractiveness of sport activity and to justify the fatigue to enhance the performance.

References

Altavilla G., Raiola G., 2015, Sports Game Tactic in Basketball, Sport Science, 8 1
Altavilla G, Furino F, Marika D, Raiola G, 2015a, Physical skills, sport learning and socio-affective education Sport Science, 8 1 supplement
Altavilla G, Furino F, Di Palmo M, Raiola G, 2015b, The child hypokinetic and the over trained Sport Science, 8 1 supplement
Altavilla, G., Raiola, G., 2014, Global vision to understand the game situations in modern basketball Journal of Physical Education and Sport Vol 14 4
Altavilla G., Tafuri D., Raiola, G., 2014a, Some aspects on teaching and learning by physical activity Sport Science vol 7 1
Gaetano R., Gomez F.P., Gaetano A., 2015b, Anxiety In The Youth Physical And Sport Activity, Mediterranean Journal of Social Sciences Vol. 6, No 3
Gaetano R., Rago, V., 2014, Preliminary study on effects of hiit-high intensity intermittent training in youth soccer players Journal of Physical Education and Sport vol 14 2
Gaetano, R., 2012a, Didactics of volleyball into the educate program for coaches/trainers/technicians of Italian Federation of Volleyball (FIPAV) Journal of Physical Education and Sport vol. 12 2
Gaetano, R. 2012b, Motor learning and didactics into physical education and sport documents in middle school-first cycle of education in Italy Journal of Physical Education and Sport vol. 12 2
Guetano R, Lipoma, M., Tafuri D., 2015, Postural control in young soccer players: differences between the cognitive approach and ecological-dynamic one, Journal of Human Sport and Exercise vol 10 1 supplement
Parisi F, Raiola G 2014a, Video analysis in youth volleyball team Journal of Human Sport and Exercise vol 9 1
Parisi F, Raiola G., 2014b, The serve in under 12-13 Italian volleyball team Journal of Human Sport and Exercise vol 9 1

Polidoro L, Bianchi F, Di Tore P A, Raiola G 2013, Futsal training by video analysis Journal of Human Sport and Exercise vol 8 2


Napolitano S, Tursi D, Raiola G., 2013c, Waterpolo women’s pattern tactical experience of an Italian team Journal of Human Sport and Exercise vol 8 3

Raiola G., Altavilla G, De Luca C, Di Tore P A, 2016a, Analysis on some aspects of the service in volleyball, Sport Science, 9 1


Raiola G., Altavilla G., Tafuri D, Lipoma M, 2016d, Analysis of learning basketball shot Journal of physical education, vol. 5 1

Raiola G., 2015a, Basketball feint and non-verbal communication: empirical framework Journal of Human Sport and Exercise vol 10 1 supplement

Raiola G., 2015b, Sport skills and mental health, Journal of Human Sport and Exercise vol 10 1 supplement

Raiola G., 2015c, Inclusion in sport dance and self perception, Sport Science, 8 1

Raiola G, Tafuri D., 2015a, Pilot work on training for quantitative aspects of performance Sport Science, 8 2

Raiola G, Tafuri D., 2015b, Teaching method of physical education and sports by prescriptive or heuristic learning. Journal of Human Sport and Exercise vol 10 1 supplement

Raiola G., Tafuri D., 2015c, Assessment and periodization in amateur soccer team, Sport science, vol 8 supplement 2

Raiola G, Tafuri D., Paloma G. F., Lipoma M., 2015a, Bodily Communication in basketball Sport Science, 8 2

Raiola G, Tafuri D., Paloma G.F., Lipoma M., 2015b, Case study on mental health and physical activity Sport Science, 8 2

Raiola, G., 2014a, Motor control and learning skills according to cognitive and ecological dynamic approach in a vision on behaviorism, cognitive, Gestalt and phenomenology theories Mediterranean Journal of Social Sciences vol 5 15

Raiola, G., 2014b, Teaching method in young female team of volleyball Journal of Physical Education and Sport vol 14 1

Raiola G, Altavilla G. Paloma Gomez F, 2014a, Effects of physical activity and sports in the reduction of stereotypy in blind subjects Sport Science, 8 1 supplement

Raiola G., Tafuri D., Paloma, G., 2014b, Physical activity and sport skills and its relation to mind theory on motor control Sport Science vol 7 1

Raiola, G., Parisi, F., Giugno, Y., Di Tore, P.A., 2013a, Video analysis applied to volleyball didactics to improve sport skills Journal of Human Sport and Exercise vol 8 2

Raiola, G., Scassillo, I., Parisi, F., Di Tore, P.A, 2013b, Motor imagery as a tool to enhance the didactics in physical education and artistic gymnastic Journal of Human Sport and Exercise vol 8 2


Raiola, G. 2012 Bodily communication in volleyball between human and experimental sciences Mediterranean Journal of Social Sciences vol 3


Raiola, G., Di Tore, P.A, 2012b, Statistical study on bodily communication skills in volleyball to improve teaching methods Journal of Human Sport and Exercise vol. 7 2

Raiola, G., Di Tore P.A., 2012c, Bodily communication skills and its incidence on female volleyball championship to enhance didactics Journal of Human Sport and Exercise vol 7 1

Raiola, G., 2011a, Study between neurophysiological aspects and regulation documents on preschool in Italy Journal of Physical Education and Sport 11 1

Raiola, G., 2011b, A study on Italian primary school rules: Neurophysiological and didactics aspects on physical education and sport Journal of Physical Education and Sport 11 2

Tursi, D., Napolitano, S., Polidoro F, Raiola, G., 2013a, Video analysis as an instrument in juvenilia soccer training Journal of Human Sport and Exercise vol 8 3
TESTIRANJE U TJELESNOM I SPORTSKOM ODGOJU KVANTITATIVNIM I KVALITATIVNIM ALATIMA U PROCJENI U VIŠOJ ŠKOLI: PRIJEDLOG

Sažetak
Ono što se uobičajeno naziva procjenom je rezultat dviju operacija, prva od kojih je predstavljena mjerenjima/vrednovanjem i druga procjenom. Procjena je prekretnica u procesu poučavanja i učenja i za učitelja koji, zahvaljujući testovima ciljeva, može procijeniti izvedbu studenata i za studente koji, kroz od učitelja prikupljene podatke. Mogu postići samoprocjenu razvijenih kompetencija i tako stimulirati proces učenja. Ovo istraživanje, provedeno u nižim razredima srednje škole, ističe napretke prikupljene u 20 studenata kroz kvantitativne testove u prvoj godini; tijekom sumativnog vrednovanja u prvoj godini, studenti su podvrgnuti upitnik koji im omogućava samovrednovanje i procjenu važnosti testova ciljeva korištenih od učitelja. Cilj je istaknuti važnost samoprocjene u procesu poučavanja i učenja također i kao motivacijski instrument za učenika. Specifično, cilj ovog istraživanja je istražiti odnos između kvantitativnih i kvalitativnih aspekata samih po sebi. Metoda je eksperimentalna prema teoriji slučaja istraživanja. Rezultati pokazuju napredak u kvantitativnim varijablama, dok je upitnik samoopažanja pokazao da se 73% studenata osjeća motivirani baveći se tjelesnim aktivnostima baveći se tjelesnim aktivnostima znajući da su podvrgnuti kvantitativnim testovima. U zaključku, procjena je prekretnica u procesu poučavanja i učenja jer omogućava analiziranje početne situacije, provjeravanje i preorientaciju obrazovnih izbora te održavanje sumativne procjene školske godine.

Ključne riječi: samopercepcija, vrednovanje, upitnik, Shuttle, skok u dalj

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