COMPARISON OF TACTICAL AND TECHNICAL TEACHING APPROACHES AND THEIR INFLUENCE ON THE LEVEL OF VOLLEYBALL PERFORMANCE OF PUPILS AGED 13 AND 14

Jaroslav Popelka
Department of Physical Education and Sports, Faculty of Humanities, Matej Bel University in Banská Bystrica

Original scientific paper

Abstract
The study presents the results of experimental research which was aimed at investigating and verifying the impact of a specific programme on the levels of change in volleyball performance of pupils aged 13 and 14. This pedagogical experiment was used in the research as a dominant method. The evaluation was carried out by means of logical, mathematical and statistical methods. The obtained data pointed out the fact that tactical and technical approaches of teaching lead to similar levels of performance. However, our research showed that tactical approach has a more positive impact on learning tactics and the ability of pupils to apply them during the game.

Key words: *sports games, performance, teaching approaches, volleyball, pupils*

INTRODUCTION

In physical education classes we are constantly trying to find ways to make the process of learning and improving skills and performance in sports games (including volleyball) more effective and therefore achieve the highest level of quality. We believe that we can achieve this through the use of optimal teaching approaches, including teaching methods, organizational forms, teaching processes, etc., and teacher-pupil interaction as well as the selection of curriculum content, objectives and tasks of the physical education process (Popelka, 2012).

Performance in sports games, including volleyball, is influenced by a number of factors (Hančík et al., 1994) of various degrees and intensity (Zaťková, 2006, 2007). According to Griffin, Mitchell and Oslin (1997), the performance depends on making tactical decisions, i.e. the ability to identify the problem and find the solution in the given game situation. There is a connection between performance and tactical decision making which can be seen in activities using no ball when choosing and implementing the appropriate technique. From this point of view, the player's performance is determined by tactical and technical skills.

Several authors (Thorpe, Bunker, Almond, 1986; Psotta, Velenský, 2001a; and Dobrý, 2003) note that in old and modern didactic theories as well as in practice, various approaches have been used in the sports game teaching process. According to the curriculum content and structure, as well as the ways of creating the teaching conditions and interaction, the approaches of teaching can be divided into the following: unstructured teaching of sports games, i.e. sports games teaching based on the suppression of situational game planning (technical approach) and integrated approaches, i.e. tactical approach (Psotta, 2005; Zapletalová, 2009; Psotta, Velenský, 2011b).

The technical approach is criticized by a number of authors (German, 2002, Zaťková, 2003; Lukavská, 2006) who, in evaluating the sports games teaching process, point out the fact that pupils lack the required playing abilities.

Alison and Thorpe (1997) and Blomqvist, Luhtanen, and Laakso (2001) claim that through the tactical approach of sports games teaching, pupils gained tactical knowledge and gaming skills, as well as understood all the aspects of the game, whilst training under the traditional technical approach which helped improved their gaming skills. On the other hand, some studies (Turner, Martinek, 1992; Rink, 1996) did not observe any significant differences when comparing the two approaches of teaching. Their research analogously ascertained that pupils trained under the tactical approach of teaching seemed to enjoy the classes more and showed the same improvement in technique as well as in the game itself.

The aim of the research was to compare tactical and technical teaching approaches and determine

their impact on the level of volleyball performance of pupils aged 13 and 14.

METHODS

The two-group pedagogical experiment in pupils of primary school aged 13 and 14 was used in the research. In the experimental group, which consisted of 23 pupils, the tactical approach of teaching was implied and the same number of pupils in the control group was trained under the traditional (technical) approach. Both groups of pupils participated in 17 volleyball lessons. The independent variable was that the tactical approach was characterized by the use of modified games, controlled didactic styles and the forms of social interaction. In this study we introduce the output levels of the pupils' performance in both the experimental and control group. The method of planned observation was used to obtain data. We studied the quantity and quality of technical and tactical components of the game. When choosing the observed components and criteria for their evaluation, we were inspired by the performance evaluation by Mitchell, Oslin and Griffin (2006). When evaluating the results, the Mann-Whitney U test for independent samples and descriptive statistics was applied. The statistical significance was determined according to the 5% level ($p < 0.05$).

RESULTS

The comparison of the team's performance in the experimental and control group is presented in table 1.

Decision-making

By comparing the decision-making processes, we found out that the difference between the achieved performances of the groups was 5.6% in favour of the experimental group and it is statistically significant ($p < 0.05$). Therefore, we can say that the experimental group showed significantly better performance in the tactical component of the game concerned with making a decision regarding "how to proceed during the game." These findings suggest that the experimental group showed greater ability to make the right decision in different game situations. We believe that the pupils have gained this ability from playing modified games in which they had to perform several tactical tasks

Table 1. Comparison of performance in both the experimental and control groups.

The comparison of the groups	D	P	S	Pa	A	SA	TP
EG	76.70%	77.00%	76.60%	46.10%	72.60%	70.10%	69.90%
CG	71.10%	72.90%	75.20%	42.70%	68.00%	71.30%	66.80%
M-W	0.016	0.007	0.535	0.535	0.175	0.713	0.089

Notes: EG – Experimental Group, CG - Control Group, M-W- Mann Whitney U test $p < 0.05$, D – Decision about "How to proceed during the game?", P - Position after a hit, S - Serve, Pa - Pass, A - Assist, SA - Spike Attack, TP - Team's Performance.

Position

The comparison of performance with regards to the position of the players after the hit shows the difference of 4.1% in favour of the experimental group. In this case, the difference between the groups is again statistically significant ($p < 0.05$). We believe that the pupils had more experience in dealing with this tactical component of the game because they had frequently played modified games. In these games the teacher asked the pupils questions such as, "In which part of the court should you position yourself after hitting the ball?" These types of questions helped the pupils choose the correct position on the court after hitting the ball.

Serving

In serving we determined the difference of 1.4% in favour of the experimental group. This difference appears not to be statistically significant ($p > 0.05$). We believe that the independent variable had no significant impact on learning and

improving the serving skills because the pupils served more often from a shorter distance. Despite the fact that there were no statistically significant differences, we believe that the ability to deal with the game-related stress is an important factor that contributes to the success of the game. We presumed that the experimental group, who played a number of modified games, would deal better with the stress and thus achieve a higher level of performance.

Passing

There was no significant difference in passing ($p > 0.05$) and therefore we can say that the passing skills level was equal in both groups. This difference represented 3.4% in favour of the experimental group. From a pragmatic point of view, this means that the independent variable positively influenced the team's performance. Despite this fact, we would like to point out that the level of individual player's performance in this activity was quite low in both groups.

Assists

Considering the assist, there is a difference of 1.4% in favour of the experimental group. This difference appears not to be of any statistically significance ($p > 0.05$). In this case, the assisting performance of both groups is at the same level. The difference in performance indicates that although our independent variable had a positive impact, it was not statistically significant. We assume that the assist in both groups was largely influenced by the preceding pass. We believe that if the pass had been better, the performance in assist and attack of both groups would have been of higher quality.

Spike Attack

Considering the spike attack, the control group showed better performance than the experimental group by 1.2%. This difference is, however, not statistically significant ($p > 0.05$). With such an insignificant difference, we can conclude that both groups showed the same level of performance during the game.

Team's performance

The evaluation of the team's performance showed that the experimental group was more successful by 3.1%. This difference is not statistically significant ($p > 0.05$). Based on the obtained results, we concluded that the performance of the experimental group was significantly better at the tactical components of the game. By comparing the effectiveness of the particular game activities, we did not notice any significant deviations in performance. Based on the results stated above, we resolved that both approaches of teaching had the same influence on the performance of both groups. This was confirmed during the complex evaluation process of the team's performance. While the gaming skills of both groups were similar, the pupils in the experimental group gained more tactical skills during the teaching process. This enabled them to understand the game better. From a pragmatic point of view, the tactical approach was proven to be a more effective form of teaching volleyball.

DISCUSSION

In their works, several authors (Alison Thorpe, 1997; Blomqvist, Luhtanen, and Laakso, 2001) added to the evidence that the tactical approach is more effective at enabling pupils to develop tactical thinking skills and make the right decisions during a game than the traditional approach. In our research, this claim was also confirmed by our research finding that the difference in performance of tactical components of the game was statistically significant ($p < 0.05$). This means that pupils of the experimental group were able to make better decisions regarding "what to do" and "how to proceed during the game" (decision making regarding how to choose the right technique). They also showed a higher ability to take up the right position on the court after a hit. In our opinion, the pupils of the experimental group showed a better ability to make the right decisions because of the number of modified games they had played previously. The requirements of the technique are reduced in this kind of game (Light, 2010) in such a way that it enables all pupils to join the game. The emphasis is put on the tactical understanding of the game while at the same time motor-skills are being developed. The use of didactic styles of teaching that go beyond the cognitive threshold also contributed to this. According to Korčok & Pupiš (2006); Webb, Pearson & Forrest (2009), didactic styles are based on asking questions that represent the crucial aspects of teaching. After evaluating individual game activities in both groups, no statistically significant differences ($p > 0.05$) were confirmed. However, we noticed some interesting facts. What the two groups have in common is that they were the most successful in serving. This can be explained by the fact that the serve is the only activity in volleyball which is performed under normal conditions (Hančík, Mašlejová, Tokar,

1994; Zapletalová, Přidal, 1996). This means that the serve is not influenced by a previous game activity. Despite the fact that the experimental group's assisting skills were more effective by 4.6% than those of the control group, and therefore the experimental group was more likely to achieve a better performance in the spike attack, our study proved otherwise. In this case, the pupils of the control group achieved a better performance than the pupils of the experimental group; although, the difference was not statistically significant. We believe that the pupils in the control group achieved a better performance in the spike attack because the analytical and synthetic approach of teaching is preferred in a traditional teaching process (Fraňo, 1994). This approach is more effective in learning and improving spike attack skills (Zapletalová, Čabajová, 2001). We agree with the authors as this theory was also proved by the results obtained during our research. It was confirmed that using this teaching method is more effective when learning and improving spike attack skills.

CONCLUSION

The research pointed to the fact that both approaches of teaching lead to similar volleyball performance levels in pupils aged 13 and 14. We proved that the tactical approach of teaching has a higher impact on acquiring knowledge about tactical components of the game and their application within the game. Based on the results of our research, we offer the following recommendations for further practice:

- exercises based on situational game planning should be performed;
- game rules that are appropriate for all pupils, even the less skilled ones should be set;
- various didactic methods should be used in the course of a single lesson; and
- individual, social and interactive forms of asking questions of the pupils should be used.

REFERENCES

1. ALISON, S. - THORPE, R. 1997. A comparison of the effectiveness of two approaches to teaching games within physical education. A skills approach versus a games for understanding approach. In *The British Journal of Physical Education*. ISSN: 1472-4375, 1997, vol. 28, no. 3, p. 9-13.
2. BLOMQVIST, M. - LUHTANEN, P. - LAAKSO, L. 2001. Comparison of Two Types of Instruction in Badminton. In *European Journal of Physical Education* [online]. 2001, vol. 6, no.2, p. 139 – 155. [cit. 2012-11-13]. Dostupné na internete: <http://www.tandfonline.com/doi/abs/10.1080/1740898010060206>
3. DOBRÝ, L. 2003. Jak spojit myšlení a pohyb v basketbalovom nácviku. In *Tělesná výchova a sport mládeže*. 2003, roč. 69, č. 4, s. 25 – 30.
4. FRAŇO, J. 1994. K vyučovacím postupom pohybových činností. In *Telesná výchova & Šport*. ISSN 1335-2245, 1994, roč. 4, č. 4, s. 5 – 7.
5. GRIFFIN, L., L. – MITCHEL, S., A. – OSLIN, J., L. 1997. Teaching Sport Concepts and Skills: A Tactical Games Aproach. [online]. [cit. 2013-02-13]. Dostupné na internete: http://classdat.appstate.edu/CHS/HLES/townsnd js/PE%203009%20%20Survey%20of%20Sport/Sportfolio/Cricket/Additional%20Resources/ Assessing%20Outcomes%20-%20GPAI.PDF.
6. HANČÍK, V. - MAŠLEJOVÁ, D. - TOKÁR, J. 1994. *Teória a didaktika športovej špecializácie a zvoleného športu volejbal*. Bratislava : Univerzita Komenského, Fakulta telesnej výchovy a športu, 137 s. ISBN 80-223-0584-7.
7. KORČOK, P. & PUPIŠ, M. 2006. Všetko o chôdzi. Banská Bystrica: Univerzita Mateja Bela, Fakulta humanitných vied, 2006, 236s. ISBN 8080831858.
8. LIGHT, R. 2010. *Implementing pedagogical innovation in physical education: A case study on the implementation of TGfU pedagogy in a NSW Secondary School*. [online]. [cit. 2012-11-13]. Dostupné na internete: <http://www.barker.nsw.edu.au/ subsite.asp?ss=105&id=4&pg=9>
9. LUKAVSKÁ, M. 2006. Výuka volejbalu na středních školách. In *Hry 2006: Výzkum a aplikace* : *sborník referátu ze 7. mezinárodní vedecké konference*. Plzeň : Západočeská univerzita, 2006. ISBN 80-7043-4430, s. 40 – 44.

10. MITCHELL, S. – OSLIN, J. – GRIFFIN, L. 2006. *Teaching Sports and Skills: A TActical Games Approach*. Second edition. Champaing, IL : Human Kinetics, 2006. 560 p. ISBN-13: 9780736054539.
11. NEMEC, M. 2002. *Príprava mladých futbalistov na školách a v oddieloch*. Banská Bystrica : Univerzita Mateja Bela, Fakulta humanitných vied, 2002. 102 s. ISBN 80-8055-707-1.
12. POPELKA, J. 2012. *Vplyv špecifického programu na zmeny úrovne hernej výkonnosti žiakov vo vyučovaní volejbalu na II. stupni základných škôl* : dizertačná práca. Banská Bystrica: Fakulta humanitných vied, 2012. 162 s.
13. PSOTTA, R. 2005. *Vyučování a učení otevřeným pohybovým dovednostem: poznatky empirického výzkumu v letech 1999-2004*. [online]. [cit. 2013-02-14]. Dostupné na internete: <http://www.ftvs.cuni.cz/eknihy/sborniky/2005-11-16/prispevky/sdeleni/2-Psotta.htm>
14. PSOTTA, R. - VELENSKÝ, M. 2001a. Alternativní vyučování sportovních her ve školní tělesné výchově (I). In *Tělesná výchova a sport mládeže*. 2001, roč. 67, č. 5, s. 42-46.
15. PSOTTA, R. - VELENSKÝ, M. 2001b. Vyučování sportovních her ve školní tělesné výchově : hodnocení různých přístupů. In *Česká kinantropologie*. ISSN 1211-9261, 2001, roč. 5, č. 1, s. 75-87.
16. RINK, J. 1996. Tactical and skill approaches to teaching sport and games: Introduction. In *Journal of teaching in physical education*. ISSN 1543-2769, 1996, vol. 15, p. 397-398.
17. TURNER, A. - MARTINEK, T. 1992. A comparative analysis of two models for teaching games (technique approach and game centered (tactical focus) approach). In *International Journal of Physical Education*. ISSN: 0341-8685, 1992, vol. 24, p. 131 - 152.
18. THORPE, M. - BUNKER, D. - ALMOND, L. 1986. *Rethinking Games Teaching. Loughborough: Department of Physical Education and Sport Science, 1986*. [online]. [cit. 2013-01-13]. Dostupné na internete: <http://www.tgfu.org/articles/PHED%20 RETHINKING%20GAMES.pdf>
19. WEBB, P. - PEARSON, P. - FORREST, G. 2009. Expanding the teaching games for understanding (TGfU) concept to include sport education in physical education program (SEPEP). [online]. [cit. 2013-02-20]. Dostupné na internete: <http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1094&context=edupapers>
20. ZAPLETALOVÁ, Ľ. 2009. *Didaktické prístupy k vyučovaniu športových hier*. [online]. [cit. 2013-03-08]. Dostupné na internete: <http://www.fsport.uniba.sk/ fileadmin/user_upload/editors/katedra_hier/ Zapletalova/prednaska_8.ppt>
21. ZAPLETALOVÁ, Ľ. - PŘIDAL, V. 1996. *Teória a didaktika volejbalu*. Bratislava : Univerzita Komenského, Fakulta telesnej výchovy a športu, 1996. 108 s. ISBN 80-967456-1-1.
22. ZAPLETALOVÁ, Ľ. - ČABAJOVÁ, M. 2001. Nácvik a zdokonaľovanie smeča v školskej telesnej výchove. In *Športové hry*. 2001, roč. 6, č. 2, s. 31 – 40.
23. ZAŤKOVÁ, V. 2003. Využitie súťaživých foriem pri zdokonaľovaní prihrávok v extraligovom družstve v hádzanej. In *Športové hry*. 2003, roč. 8, č. 1, s. 8 - 12.
24. ZAŤKOVÁ, V. 2006. Hodnotenie výkonu mladých hádzanárov v zápase. In *Športové hry*. 2006, roč. 9, č. 1, s. 8 - 11.
25. ZAŤKOVÁ, V. 2007. Hodnotenie herného výkonu v hádzanej. In *Športové hry*. 2007, roč. 12, č. 4, s. 13 - 19.

Corresponding author:

Jaroslav Popelka
Matej Bel University in Banská Bystrica
Faculty of Humanities,
Department of Physical Education and Sports
Phone: +421 48 446 7554
Email: jaroslav.popelka*@umb.sk*.

Received: 10. September 2013
Accepted: 17. October 2013