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EFFICIENCY OF DIFFERENT TEACHING MODELS IN TEACHING OF FRISBEE ULTIMATE

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Abstract. The aim of the study was to verify the efficiency of two frisbee ultimate teaching models at 8-year grammar schools relative to age. In the experimental group was used a game based model (Teaching Games for Understanding) and in the control group the traditional model based on teaching techniques. 6 groups of female students took part in experiment: experimental group 1 (n=10, age=11.6), experimental group 2 (n=12, age=13.8), experimental group 3 (n=14, age =15.8), control group 1 (n=11, age =11.7), control group 2 (n=10, age =13.8) and control group 3 (n=9, age =15.8). Efficiency of the teaching models was evaluated based of game performance and special knowledge results. Game performance was evaluated by the method of game performance assessment based on GPAI (Game Performance Assessment Instrument) through video record. To verify level of knowledge, we used a knowledge test, which consisted of questions related to the rules and tactics knowledge of frisbee ultimate. To perform statistical evaluation Mann-Whitney U-test was used. Game performance assessment and knowledge level indicated higher efficiency of TGfU in general, but mostly statistically insignificant. Experimental groups 1 and 2 were significantly better in the indicator that evaluates tactical aspect of game performance - decision making ($p<0.05$). Experimental group 3 was better in the indicator that evaluates skill execution - disc catching. The results showed that the students of the classes taught by game based model reached partially better game performance in general. Experimental groups achieved from 79.17 % to 80 % of correct answers relating to the rules and from 75 % to 87.5 % of correct answers relating to the tactical knowledge in the knowledge test. Control groups achieved from 57.69 % to 72.22 % of correct answers relating to the rules and from 51.92 % to 72.22 % of correct answers relating to the tactical knowledge in the knowledge test.

Keywords: PE, TGfU, game performance, knowledge level, frisbee ultimate

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Introduction

Due to acceptance of the state educational programme in 2008, a change of aims in the subject PE was noticed. The subject is more focused on development of the competences and attitudes. The objective is to create a permanent relation to the physical activity as a part of the lifestyle and assumption for lifelong health care (Antala et al. 2012). Change of aims in PE requires change in habitual teaching models. At present, we also occurs effort to search for alternative, more efficient models than the traditional model based on the preferred techniques of game skills to help teachers to achieve the desired objectives. country.

Knowledge that the results of sport game teaching are insufficient, and the progress at lessons is minimal was motivation for the authors to find an alternative to the traditional model of teaching (Thorpe et al. 1986). An alternative to "technical" - the "traditional" model of teaching are game-based teaching models which emphasize cognition of game performance and development of game performance in conditions close game. These models are, for example - Teaching Games for Understanding - TGfU (Griffin et al. 1997; Mitchell et al. 2003; Griffin and Butler 2005; Mitchell et al. 2006; Psotta 2010), Games Based Approach - GBA (Kirk, McPhail 2002; Mandigo et al. 2007; Rossi et al. 2007; Gabbet et al. 2009) and Integrated Game Practice (Dobrý et al. 2011) etc.

Change of the teaching model required also new game performance assessment methods, which would affect mainly tactical aspect of game performance. GPAI (Game Performance Assessment Instrument) could be considered a suitable method of game performance assessment for PE. GPAI is a flexible, authentic tool of game performance assessment, which can be easily used and adjusted to what students learnt (Mitchell and Oslin 1999). GPAI is, according to Memmert and Harvey (2008), one of the best methods of game performance assessment. Through this method, it is possible to assess such indicators that demonstrate tactical thinking as well as technical aspect of game performance (Oslin et al. 1998). It is a method suitable for the category of children and youth of school age. General model of GPAI consists of assessment of 7 components of game performance: decision-making, skill execution, adjust, cover, support, mark and base, out of which it is possible to choose suitable for the various sport games.

Currently is available a number of research results, which compared the effectiveness of different teaching models of sports games (Wrisber and Liu 1991; Turner and Martinek 1999; Dan Ota and Vickers 1998; Blomqvistová 2001; Dalton 2009; Olosová a Zapletalová 2012; Popelka 2012; Žuffová 2012; Kuchárik 2014; Olosová a Zapletalová 2014). We lack

such knowledge about teaching a less known sports game - frisbee ultimate. That's reason we decided to verify the effectiveness of two teaching models currently in this sport game, both in terms of development of game performance and acquire specific knowledge of the rules and tactics of the game.

Aim

The aim of the study was to verify and compare efficiency of two teaching models (TGfU and the traditional one) of frisbee ultimate with female students of different age categories at 8-year grammar school.

Methods

The experiment was performed with the girls of 3 age groups of grammar school, i.e.: experimental group 1 (n=10, age=11.6), experimental group 2 (n=12, age =13.8), experimental group 3 (n=14, age =15.8), control group 1 (n=11, age =11.7), control group 2 (n=10, age =13.8), control group 3 (n=9, age =15.8). Experimental group was taught by TGfU and control group by traditional model. The experiment was carried out at lessons of school PE in total amount of 12 lessons.

Game performance assessment was performed through the method of GPAI (Game Performance Assessment Instrument) according to Žuffová and Zapletalová (2014). 6 games were analyzed and each player played for 20 minutes. The ability of decision-making, the disc and skill execution was evaluated.

1. Decision making: who to pass, where in the final zone to pass

Assessment: suitable – a pass to a free team-mate, resp. the team-mate who cooperates actively – releases and offers himself for the pass

unsuitable – a pass to an occupied team-mate who is being closely defended and who is not releasing for the pass

2. Skill execution: pass, final pass and disc catching

Assessment: successful – a processable pass that is directed to the area of the trunk or the head it is possible to catch it easily; it is assessed as successful even if it is not caught

unsuccessful - an unprocessable pass, that is directed either high or low, out of the area of the trunk; it is assessed as unsuccessful even if it is caught

Final pass

Assessment: successful – caught pass in the final zone

unsuccessful – not caught pass, caught or struck to the ground by the defender

Disc catching

Assessment successful – catching of the disc, possibility to continue in the offence

unsuccessful – the forward touched the disc, but he managed it badly and he/she did not catch the disc or dropped it, the players cannot continue in their offence, they are becoming defenders

Knowledge level was checked through the knowledge test, which consisted of 8 questions, 4 of them were related to the rules and 4 to tactical knowledge. Man-Whitney U-test was used for statistical processing of the results at the 5 % significance level.

Results and discussion

In the first part of our study game performance of female students of the first, third and fifth class that were educated through TGfU model (experimental group - EG 1, 2 and 3) and traditional model (control group - CG 1, 2 a 3) was evaluated.

EG 1 was statistically significantly better in suitable decision-makings than CG 1 ($p<0.05$) in the indicator that evaluates tactical aspect of game performance. On the other hand, CG 1 reached significantly lower number of unsuccessfully caught discs than EG ($p<0.05$), what was caused by lower total number of caught discs (84 CG and 152 EG) due to lower activity and support of teammate during the game. EG1 was, in general, better in the other indicators of game performance, but there were not proved statistically significant differences (Fig. 1)

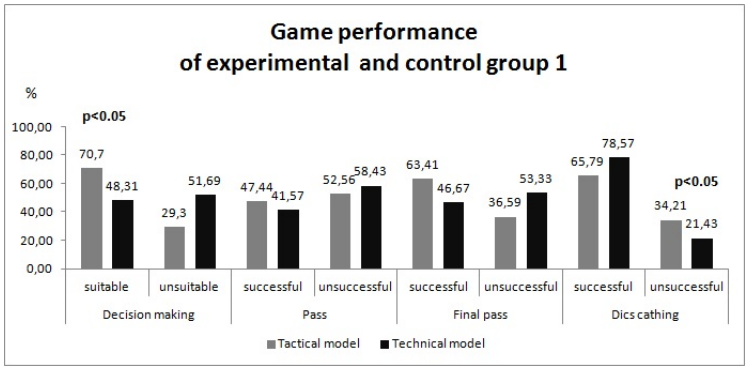

Figure 1

Game performance of 11-year-old students after intervention

EG 2 was also statistically significantly better in the indicator that evaluates tactical aspect of game performance - decision making. They reached significantly less unsuitable decision-makings than CG 2 ($p<0.05$). As well as with the previous two groups, CG 2 also had proportionally less uncaught discs than EG (153 CG, 253 EG), but again it can be due to

lower activity and support of the teammates during the game. EG2 was, in general, better in the other indicators of game performance, but there were not proved statistically significant differences (Fig. 2)

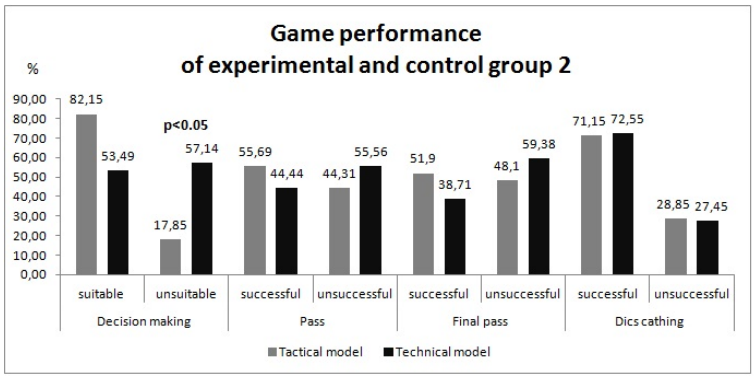

Figure 2

Game performance 13-year-old students after intervention

EG 3 was statistically significantly better in successful disc catching where 83, 38 % of EG represents 286 successfully caught discs and 85, 43 % of CG represents 129 successfully caught discs. As well as with the previous groups, CG 3 had again proportionally less uncaught discs than EG (151 CG, 343 EG) which is again due to lower activity and support of the teammates during the game. EG2 was, in general, better in the other indicators of game performance, but there were not proved statistically significant differences (Fig. 3)

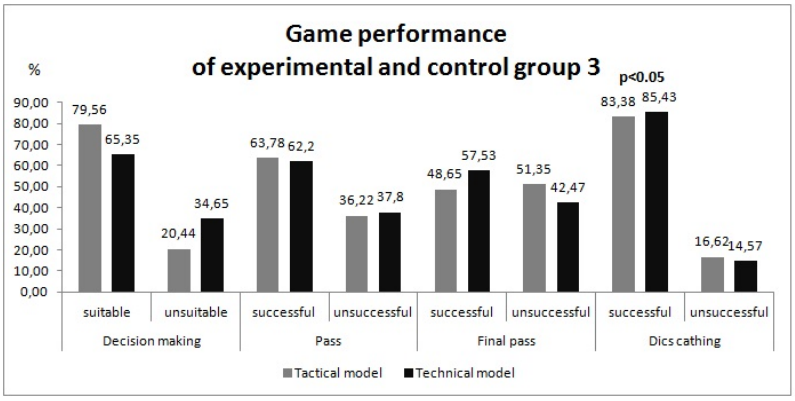

Figure 3

Game performance 15-year-old students after intervention

The obtained results indicate that the students of the classes taught by model TGfU (Teaching Games for Understanding) reached partially better game performance. Our results were not, mostly, statistically significant which was due to low number of the girls in the

groups. Nearly in all groups, there were students with passive approach to the game, which affected evaluation of the whole group. These negative aspects could be partially eliminated by watching higher number of games or exclusion of the passive players from the total evaluation.

The level of game performance in our research increased in both experimental and control groups. Based on our observation of the classes as well as evaluation of the level of game performance we can conclude that, in general, all experimental groups taught through the TGfU model, regardless the age, reached better quality of game performance than the control groups. Kuchárik (2014) provides similar results in mini handball, Žuffová (2012) in frisbee ultimate, Popelka (2012) in volleyball as well as Olosová and Zapletalová (2012) in mini basketball.

In the second part of the study, we focused on knowledge level. Three areas - declarative knowledge (rules), procedural knowledge (tactics) and total knowledge were evaluated. In general, all experimental groups reached better results of the knowledge test than the control groups. Significantly important difference was seen only between EG 1 and CG 1 in the area of procedural knowledge ($p<0.05$) and total knowledge ($p<0.05$) (Fig. 4, 5, 6).

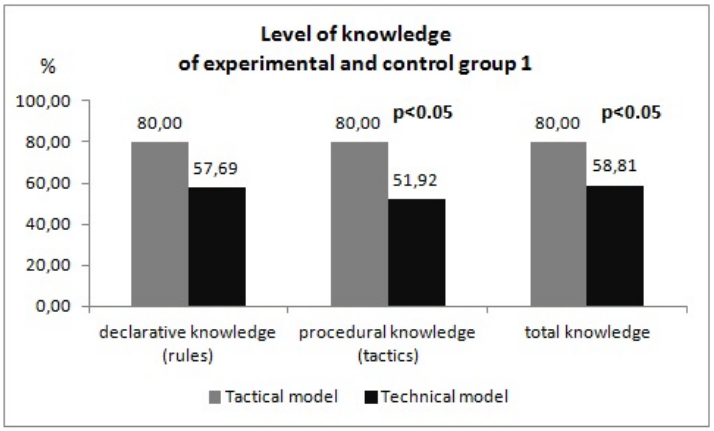

Figure 4

Knowledge level of 11-year-old students after intervention

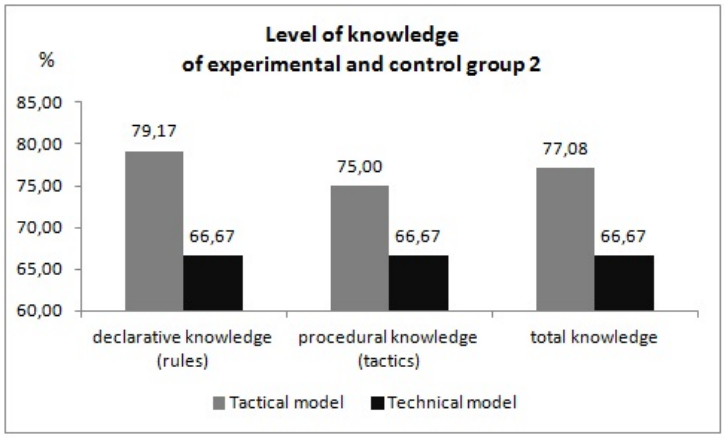

Figure 5

Knowledge level of 13-year-old students after intervention

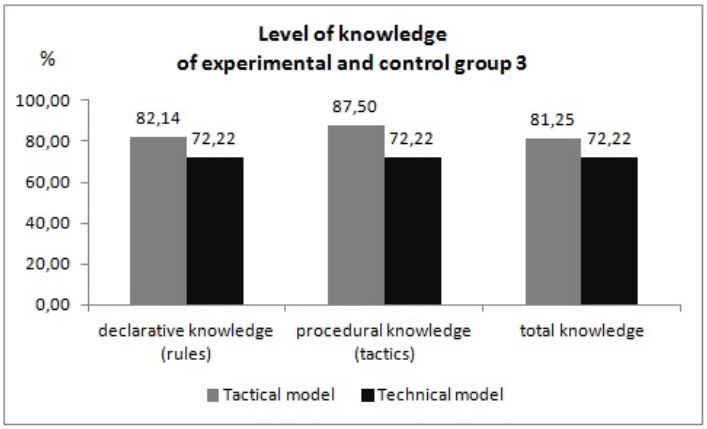

Figure 6

Knowledge level of 15-year-old students after intervention

Similar results were concluded in the studies of Olosová and Zapletalová (2014) where the group taught through the TGfU model reached proportionally better results that the group taught through the traditional model. Significantly better results were proved in the area related to the rules - declarative knowledge ($p<0.05$) and as well as in our study in total knowledge level ($p<0.05$). Research was performed with the boys in the sixth year of primary school, which is equal to our experimental, and control group 1. Higher level of tactical knowledge of the students taught through TGfU model is stated by Blomqvistová (2001) in badminton, Dalton (2009) in basketball, Turner and Martinek (1999) in field hockey. In general, these researches prove positive effects of TGfU not only in the area of game performance but also in obtaining of special knowledge.

Conclusion

The aim of our study was to verify efficiency of two teaching models – TGfU model and the traditional one. Our research proved, that TGfU model is more efficient from the point of view of the game than the traditional model. In general, female students taught through TGfU model reached better results in game performance assessment but the differences compared to the control groups were not always statistically significant. The same is true for the level of special knowledge. However, observation during the lesson showed that the students taught through TGfU model were more active during the game, they were more involved in the game and more combined what we did not do in our assessment.

For the future, we would recommend to integrate other indicators of game performance into the game performance assessment – for example cover and support, which would help to better assess the activity of each players. Regarding the fact that nowadays it is more and more difficult for teachers of PE to interest students and learn them to adopt physical activity as a part of their lives, we recommend to provide as big space for different forms of games at teaching of sport games as possible, and for this purpose it is possible to use, for example, the mentioned teaching model TGfU (Teaching Games for Understanding).

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