Croatian Journal of Education
Vol.20; No.2/2018, pages 561-584:
Original research paper
Paper submitted: 2nd July 2017
Paper accepted: 27th February 2018
https://doi.org/10.15516/cje.v20i2.2827

Teaching Games for Understanding and Cooperative Learning: Can Their Hybridization Increase Motivational Climate among Physical Education Students?

Óscar Chiva-Bartoll[1], Celina Salvador-García[1], and Pedro Jesús Ruiz-Montero[2]
[1]*Jaume I University, Department of Education*
[2]*University of Granada, Physical Education and Sport Department*

Abstract

The present study examines the evolution of Motivational Climate among Physical Education students through the hybridization of Cooperative Learning and the Teaching Games for Understanding model in a handball didactic unit. A sample of 96 students, whose average age was fifteen, were divided into an experimental group of 31 students and a control group of 65 students. The Motivational Climate evolution promoted by the hybrid model (experimental group) was compared with the results obtained through a traditional learning approach (control group). The results show differences in the Task-involvement scale, (Effort/ Improvement and Important Role subscales), and in the Ego-involvement scale (Unequal Recognition subscale). In conclusion, in accordance with the results obtained by similar research on other sports, significant differences were found between the two scales with regard to the perceived motivational climate.

Key words: *cooperative learning; motivational climate; physical education; secondary school; teaching methodology.*

Introduction

The Physical Education (PE) curriculum has been reformed in most countries across the world in the last decades. The goal of the new PE curricula is to develop

physically educated individuals who possess the knowledge, skills, and confidence to enjoy a lifetime of healthful physical activity, instead of solely educating the physical body (Wang & Ha, 2013). In this vein, a number of constructivist-based pedagogical models have attracted increasing attention from teachers and scholars, such as the Teaching Games for Understanding (TGfU) model (Bunker & Thorpe, 1982). The TGfU model is a learner-centred approach to PE in which teachers are encouraged to design modified games to develop the learner's understanding of tactical concepts (Griffin, Brooker, & Patton, 2006; Renshaw, Araújo, Button, Chow, Davids, & Brendan, 2016). Particularly, the TGfU model shows that cognitive functions have great relevance basically due to decision-making (Balakrishnan, Shabeshan, & Salleh, 2011; Johnson & Raab, 2003; Raab & Johnson, 2007; Raab & Laborde, 2011; Wagner, Finkenzeller, Würtn, & von Duvillard, 2014) and attention processes required by the game (Memmert, Simons, & Grimme, 2009; Swinney, 2004), using constructivist learning principles (Griffin & Patton, 2005). Table 1 shows the main elements required when learning sports through the TGfU model.

Table 1

Student benchmarks of the TGfU model

Student Benchmarks
Students are given time to think about open-ended questions
Students are engaged in making tactical decisions
Students make progress in tactical knowledge as they move from the initial game through technique/skill practice(s) to the final game
Students have learned tactical awareness, decision-making, and skill application

Note. Adapted from Bunker & Thorpe (1982); Metzler (2011); O'Leary (2015); Thorpe, Bunker, & Almond (1984).

Moreover, cooperative learning is an educational methodology in which small groups of students, each with pupils of different ability levels, work together on a common task to maximize their own and each other's learning, sharing efforts and resources (Johnson, Johnson, & Holubec, 1999). Furthermore, most of the curriculum for school Physical Education (PE) is spent on games (Werner, Thorpe, & Bunker, 1996) which can be played in this approach. This methodology goes beyond mere group work because students aspire to not only learn a specific content, but also help their classmates achieve their own learning aims (Dyson, 2002). Similarly, this methodology is widely considered useful for encouraging a positive classroom atmosphere, increasing students' self-concept, enhancing the inclusion of students with disabilities, co-education, and motivation towards the subject matter (Velázquez, 2015).

According to Fernández-Río and Méndez-Giménez (2016), cooperative learning has been successfully used in the PE curriculum to develop a number of contents such as (among others) basic skills, gymnastic skills, physical condition and health, and expressive or outdoor activities. However, its implementation in the process of sports teaching and learning has been more complex and less free-flowing. When cooperative learning was linked to sports education, it usually meant the introduction

of a range of strategies such as modifying activity rules, reducing or even removing competitiveness and increasing cooperativeness, and transforming sports to create new games or activities from a cooperative viewpoint. Cooperative learning structures were used by Gröben (2005) to teach handball on the Primary Education level with implications for transference and social improvement. Besides, self-perception and motor improvement do not suffer any damage, but there is an increase in the percentage of correct trials (Barrett, 2005).

Currently, there is a tendency towards the hybridization of pedagogical models to increase their impact since many of them complement each other (Fernández-Río & Méndez-Giménez, 2016; González, Cecchini, Fernández-Rio, & Méndez, 2008). In this vein, cooperative learning has already been combined with the TGfU model on several occasions to better address PE sports contents (Méndez-Giménez, 2010). The cooperative TGfU hybrid model of the present study aspires to profit from the former's need for a classification system of sports games based on the tactical requirements of each game. Furthermore, although the structures of the game remain similar, changes can be made to adapt it to the students' age and skills. In addition, exaggerations of the tactical issue to develop are added as well.

Furthermore, several studies show that PE students' motivation is a key factor for enhancing their physical exercise practice (Moreno, Cervelló, Huéscar, Belando, & Rodríguez, 2013). In this sense, it is important to bear in mind the two main socio-cognitive theories of motivation which can explain the types of behaviour that may appear in PE lessons: achievement goal theory and self-determination theory. Achievement goal theory (Ames, 1992) is considered to be one of the theoretical models which has contributed more critically to the understanding of cognitive, behavioural, and emotional patterns related to PE students' achievement. According to this theory, two contrasting achievement goal constructs have been differentiated and each one of them is linked to a contrasting pattern of motivational processes: ego-involved (performance-oriented) and task-involved (mastery-oriented) goals.

For its part, self-determination theory focuses on self-motivation, personality integration, social functioning, and the conditions that enable those positive processes. Students' motivation to perform an activity is determined by meeting these needs. In this sense, several types of motivation can be differentiated: intrinsic motivation, extrinsic motivation, and amotivation (Ryan & Deci, 2007). González-Cutre, Sicilia, and Moreno (2011) manipulated the target areas over several motivational variables to analyse the effects of a task-involvement climate. Students in the intervention group reported improvements in their task climate perception, mastery approach orientation, mastery avoidance orientation, and intrinsic motivation.

The positive effect of cooperative learning on students' motivation has been demonstrated, although it is not specifically focused on motivational climate. Cooperative learning seems to be better than traditional learning not only with respect to motivation related to motor practice (Fernández-Río, 2009), but with regards to the

achievement of social, motivational, and affective goals (Prieto & Nistal, 2009). Thus, the hybrid model might be related to task-involvement motivation as well.

Similarly, based on the hybrid model principles, the following theoretical proposal may be established. Those contexts in which interpersonal competition, public evaluation, and normative feedback related to the development of the task are encouraged, tend to crystallise in the students' performance-oriented motivation. In contrast, contexts that emphasise the learning process, participation, individual mastery of the task, and problem resolution contribute to the adoption of mastery-oriented success criteria (Peiró, 1999).

Whilst several studies have applied the hybrid model of learning to the study of sports such as athletics (Casey, Dyson, & Campbell, 2009), tennis (Casey & Dyson, 2009), basketball (Fernández-Río, 2009), or volleyball and football (Dyson, 2010), no studies have been found which investigate handball. The present paper focuses on this sport and as such represents a new contribution to this area of knowledge. The analysis of the hybrid model in handball is needed because it is one of the most widespread sports in worldwide school curricula (Kirk, Macdonald, & O'Sullivan, 2006). The results obtained will let us compare and discuss the effects of the hybrid model applied to teaching and learning handball in comparison with other sports.

The main objective of the research is to examine whether the aforementioned theoretical relations between cooperative learning and the TGfU model, promote the development of a specific motivational climate, and whether these results differ from those obtained through a traditional approach to teaching sports in PE. The two hypotheses taken into account in the present research are: (1) variables related to the perceived motivational climate will improve after implementing the teaching unit, showing an increase in task-involvement and a decrease in ego-involvement for students following the hybrid model; and (2) variables related to the perceived motivational climate will differ when comparing the evolution of both groups of participants (hybrid model and traditional approach).

Methods

Participants

A sample of 96 students of the 4th level of a secondary school located in Valencia (Spain) participated in this study during the 2015/2016 academic year. The experimental group comprised 31 students (16 girls and 15 boys), while 65 students constituted the control group (34 girls and 31 boys). This sample distribution corresponds with the widespread use of intact groups in educational research (Mertens, 2010). We decided to include three groups of students in the study in an attempt to not disregard any of the students. Therefore, one of the groups was assigned the experimental group role, while the other two combined made up the control group.

Before participating in the study, each student and his or her family were informed of its purpose. Furthermore, written informed consent was obtained from all of them (students and their families).

Measures

Students responded to a PE-adapted version of the PMCSQ-2 (Newton, Duda, & Yin, 2000), which was translated into Spanish by González-Cutre, Sicilia, and Moreno (2008). The instrument contained 33 items divided into *Task-involvement* and *Ego-involvement* scales. The *Task-involvement* scale consisted of 17 items and the *Ego-involvement* scale included 16 items. The *Task-involvement* scale comprises the subscales Cooperative Learning (four items), Effort/Improvement (eight items), and Important Role (five items), whereas the *Ego-involvement* scale comprises the subscales of Punishment for Mistakes (six items), Unequal Recognition (seven items), and Intra-Team Member Rivalry (three items). Each item of the questionnaire was preceded by the stem "In PE lessons ...," and followed by a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Previous studies conducted in sport and other physical activities have supported the reliability and factorial validity of the PMCSQ-2 (Newton et al., 2000).

Procedure

A quasi-experimental design with a pre-test/post-test non-equivalent group design was used. Data were collected twice. The present study was initiated at the beginning of March and concluded at the end of April 2016 (eight weeks), performing a post-test. The experimental group developed a teaching unit based on the cooperative-TGfU hybrid model for learning sports, whereas the control group was taught another teaching unit based on the traditional approach to sports teaching. The interventional hybrid model had a 90% attendance rate during this period.

A handball teaching unit was applied through a cooperative-TGfU hybrid model of learning sports, based on the proposal by Fernández-Río (2006). The intervention was related to the performance-oriented discourses approach (Tinning, 1996) in PE, which, at the same time, is characteristic of a performance-oriented curriculum rationality (López, Monjas, & Pérez, 2003; Tinning, 2006). Table 2 shows the configuration of the teaching unit.

The hybrid model consisted of contents related to handball (basic to intermediate level), always established according to the current legislation in the application context. The eight sessions included in this interventional program took place twice a week, through 55-60-minute daily sessions, and effective 45-minute physical activity sessions, in line with the requirements laid down by the ACSM (2014) and the models proposed by Müller, Gert-Stein, Konzag, and Konngaz (1996), and Antón (1990). Participants' physical fitness and performance of physical exercises were controlled by specialists. Finally, the use of the Spanish version of the PMCSQ-2 was slightly adapted to the PE lesson because of the singularity of this scholar subject. The term "coach" was changed into "teacher," "athlete" into "student," and "training" into "lesson."

To ensure (among other things) fidelity and responsibility of the investigation, the study followed the ethical considerations proposed by the American Psychological Association (APA, 2010).

Table 2

Teaching unit design of the proposal for innovation

Teaching Unit: HANDBALL – Secondary School Education
Learning objectives – To understand and apply the main principles related to the sport handball. – To understand the relevance of cooperation and learn to cooperate in order to help the team win games and matches. – To be responsible for their own learning process by assuming roles such as referee or coach. – To be an active participant in one's and the learning process of one's classmates.
Contents – Handball: team sport, cooperation–opposition, and invasion sport. – Development of cooperative games in group, related to the basic skills of the handball player, to enhance entertainment and having fun. – Handball rules in order to use them during the game. – Understanding and explaining games, observing and assessing essential aspects for its development, and supervising compliance with the rules. – Playing games that are increasingly more complex and progressively approach the standard sport. – Analysing the strengths and weaknesses of the group, creating strategies, appreciating the results obtained and proposing improvements. – Understanding their responsibility in the learning process, including self–evaluation, and co–evaluation.
Methodological aspects – Heterogeneous groups remain the same during the whole teaching unit related to both team games related to handball, and learning from the group perspective. – Games are designed to facilitate posing questions that encourage students to think. – Cooperative work structures are created by each group member assuming different roles. These roles change along the teaching unit.

Variables

The motivational climate was the dependent variable, composed of *Task-involvement* and *Ego-involvement*. Likewise, *Task-involvement* was subdivided into three different dimensions: Cooperative Learning, Effort/Improvement, and Important Role; *Ego-task* was divided into three additional dimensions: Punishment for Mistakes, Unequal Recognition, and Intra-Team Member Rivalry. Therefore, 9 dependent variables were analysed in relation to 2 independent variables: teaching approach of the teaching unit (cooperative-TGfU hybrid model of learning and traditional approach) and the moment of measurement (before and after the implementation of the teaching unit).

Statistical Analysis

Normality of distribution was tested using skewness and kurtosis z-test of experimental and control groups. At this point, it is important to note that when kurtosis is clearly greater than 0 (approximately greater than 1), the F tends to be too small and we cannot reject the null hypothesis even though it is incorrect. The opposite is the case when the kurtosis is less than -1. In any case, none of these tests can fully substitute a visual examination of the data using a histogram. Taking into account the above-mentioned points, the results obtained in this study led to the use of non-parametric statistics.

Social statistical methods were used to calculate the means and standard deviation (SD), and differences of the total sample, active and control group using Kruskal-Wallis' one-way analysis of variance for age and gender. In order to establish the differences in motivational profile variables between the experimental and control group, the Mann-Whitney U test was used for two independent groups of participants. Data were analysed using the SPSS statistical program (SPSS for Windows 21.0, Inc., Chicago, Illinois, USA). For all analyses, significance was accepted at $P<0.05$.

Results

Changes in the motivational climate were compared using the Spanish version of the PMCSQ-2. Table 3 provides an overview of the age and gender of the study sample by groups and in total.

Table 3

Age and gender of the study sample by groups and in total

	Sample (N=96) Mean (SD)	Experimental group (N=31) Mean (SD)	Control group (N=65) Mean (SD)	p-value[a]
Age	15(0.7)	15(0.4)	15(0.6)	.63
Gender	(girls/boys)	(girls/boys)	(girls/boys)	
	50/46	16/15	34/31	.18

Note. SD=Standard Deviation; [a]one-way Kruskal-Wallis for age and gender of the study sample.

Next, Table 4 shows descriptive values of the motivational achievement profiles: mean, standard deviation (SD), evolution of means from pre-test to post-test and p-value.

Table 4

Difference between study samples by groups in motivational achievement profiles

	Experimental group (N= 31)			Control group (N=65)			
Motivational profiles	Pre-test Mean (SD)	Post-test Mean (SD)	Post-test/ Pre-test evolution Mean (SD)	Pre-test Mean (SD)	Post-test Mean (SD)	Post-test- Pre-test evolution Mean (SD)	p-value
Motivational Climate	2.9(0.4)	2.8(0.4)	-.12(.52)	3.1(0.3)	3.1(0.3)	.10(.38)	.064
Task-involvement	3.3(0.6)	3.8(0.6)	.54(.83)	3.5(0.6)	3.4(0.6)	-.12(.86)	.003
Cooperative Learning	3.2(0.8)	3.7(0.6)	.54(1.2)	3.3(0.9)	3.4(0.8)	.17(1.2)	.171
Effort/Improvement	3.5(0.7)	3.9(0.6)	.41(.95)	3.8(0.6)	3.6(0.6)	-.17(.77)	.005
Important Role	2.9(0.7)	3.7(0.8)	.76(1.1)	3.2(0.8)	3.1(0.8)	.11(1.1)	.004
Ego-involvement	2.6(0.6)	1.8(0.5)	-.82(.77)	2.6(0.6)	2.7(0.5)	.11(.79)	.000
Punishment for Mistakes	2.2(0.6)	1.8(0.5)	-.38(.72)	2.5(0.6)	2.4(0.6)	-.13(.83)	.169
Unequal Recognition	3.2(0.8)	1.7(0.6)	-1.4(1.1)	2.7(0.9)	3.0(0.7)	.23(1.1)	.000
Intra-Team Member Rivalry	2.3(0.7)	2.0(0.8)	-.24(1.1)	2.4(0.7)	2.7(0.8)	.32(1.2)	0.22

Note. P values calculated with the Mann-Whitney U test in post-test/pre-test evolution between the experimental and control group; SD= Standard Deviation.

From the data obtained it can be seen that the evolution of the Motivational Climate, as a global variable, does not differ significantly when comparing experimental and control groups. Nevertheless, focusing on the two scales of the test (*Task-involvement* and *Ego-involvement*) there is a significant difference in their progression. Besides, several of their subscales present statistically significant differences. This is the case with Effort/Improvement and Important Role within the *Task-involvement scale*, and Unequal Recognition within the *Ego-involvement* one. The rest of the subscales follow similar patterns although the comparison of their evolution between groups is not statistically significant.

Discussion

The present study found significant differences regarding the evolution of both *Task-involvement* and *Ego-involvement* scales. Previous research has dealt with students' opinions on the TGfU model and emphasized positive acceptance, improvement in tactical thinking and participation, as well as improvements in motivation, fun, satisfaction, and competition in sports games (Chen & Light, 2006; Fry, Tan, McNeill, & Wright, 2010; Griffin, Oslin, & Mitchell, 1995; Jones, Marshall, & Peters, 2010; Light, 2003; Sánchez-Gómez, Devís-Devís, & Navarro-Adelantado, 2011; Úbeda-Colomer, Monforte, & Devís-Devís, 2017). Next, the results obtained are discussed with regards to the established research objective and hypotheses. In relation to hypothesis 1, it was proposed that the motivational climate would be altered after the implementation of the handball unit as a result of an increase in *Task-involvement* and a decrease in *Ego-involvement*. The findings confirm this hypothesis since significant differences have been found in these scales. For its part, *Task-involvement* showed a significant evolution, whereas *Ego-involvement* followed the same pattern in the opposite way. These results indicate that the hybrid model used contributed to the augmentation of *Task-involvement* and reduction of *Ego-involvement*. Just like Morgan, Kingston, and Sproule's study (2005), the present research reported that the game-based class discussed game understanding, teamwork, enjoyment, and involvement, which are all task-involved goals; in contrast, the skill-focused class only discussed the value of skill learning and evaluation of performance based on successful game skill execution, linked with Ego-involved goals. Therefore, game-focused teacher strategies appear to promote a mastery-oriented climate that increases students' motivation and reduces individual behaviours.

Other subscales, included within the aforementioned two, progressed similarly to these when comparing statistically the evolution of both groups. On the one hand, the evolution of the *Task-involvement* subscales such as Effort/Improvement and Important Role was statistically significant, which may be caused by individual responsibility originated by means of a new methodology due to its intra-group roles (Vazou, Ntoumanis, & Duda, 2005). On the other hand, the *Ego-involvement* subscale Unequal Recognition displayed significant differences between groups. It decreased

in the experimental group but increased in the control one. These results coincide with the work of Gray, Sproule, and Morgan (2009), who compared the effects of a methodological approach based on games and another based on the development of basketball skills. In their case, motivational climate increased. In our case, the findings show a decrease in *Ego-involvement*, which is certain to achieve greater motivation related to students' self-determination.

This fact is in agreement with the findings of González-Cutre et al. (2011), who manipulated the target areas across several motivational variables. Their study displays an increase in *Task-involvement* perception within the experimental group and a decrease in *Ego-involvement*. Moreover, Báguena, Sevil, Julián, Murillo, and García (2014) highlight a greater perception of *Task-involvement* among those students who had implemented a volleyball unit through an approach related to the TGfU model and specific strategies of target areas. Their findings are in accordance with those presented in this paper, since both cases recorded an increase in *Task-involvement*, but no decrease in *Ego-involvement*. Building our thesis on the qualitative analysis developed by Vazou et al. (2005), this leads us to consider that the aspects related to cooperative learning, including the hybrid model implemented in this paper, are those that entail a decrease in *Ego-involvement*.

With respect to hypothesis 2, it was suggested that the evolution of the Motivational Climate would differ due to the change experienced by those students who implemented the handball unit through the hybrid model of learning. Based on the results obtained, we cannot confirm this hypothesis. The progression of the Motivational Climate variable was not statistically different when comparing experimental and control groups. At first glance, this was unexpected since Motivational Climate is intimately linked with the hybrid model and, therefore, the group that used this approach should have demonstrated a higher progression than the control group. Nevertheless, as Duda (2005) asserts, this result may be explained due to the interference that might have caused the dispositional orientation of the strategies perception and other dimensions related to a particular motivational climate. In fact, if we compare separately the evolution of the two main scales of the motivational climate, there is a significant progression within *Task-involvement* in favour of the experimental group, whereas *Ego-involvement* shows the opposite pattern. Particularly, significant differences appear in the evolution of many subscales such as Effort/Improvement, Important Role, and Unequal Recognition, which is in accordance with other relevant studies such as those conducted by Ames (1992), Gray et al. (2009), and Treasure (1993).

These results are consistent with those obtained by Morgan et al. (2005), who analysed the effects of four teaching styles on Motivational Climate and students' behaviour, finding that reciprocal style and guided discovery style contribute to an increase in *Task-involvement* and decrease in *Ego-involvement*, with greater relevance than command and practise styles. This is not surprising since reciprocal and guided discovery styles are in line with the method used in the hybrid model, whereas command and practise styles fit with the traditional approach to sports teaching.

Conclusions

The following conclusions can be drawn from our research.

Hypothesis 1 has been accepted since significant differences have been found in the two scales of the questionnaire regarding the progression of both groups. Their evolution was compared, and significant differences between the *Task-involvement* and *Ego-involvement* scales were obtained. The former increased in the experimental group and decreased in the control group, while the opposite pattern was displayed in the latter.

Hypothesis 2 has not been accepted because there have been no significant differences regarding the progression of Motivational Climate when comparing experimental and control groups. The results did not show a significant improvement in the evolution of the global variable, perhaps due to the fact that the two scales that form it (*Task-involvement* and *Ego-involvement*) counteract each other. However, if we regard their evolution separately, there are significant differences that indicate the effect of the hybrid model.

Focusing on the main objective established, our findings suggest that the implementation of the handball unit based on the hybrid model (cooperative learning and the TGfU) of teaching sports was successful in terms of the Motivational Climate. On the contrary, the teaching unit based on the traditional approach did not show this positive impact.

Finally, the findings in this paper are subject to at least two limitations. Firstly, the short period of intervention which could have limited the effect produced on the students' Motivational Climate. Secondly, the number of participants was relatively small. However, these are drawbacks often linked to research in the field of educational innovation practices.

References

American College of Sport Medicine (ACSM). (2014). *Guidelines for Exercise Testing and Prescription* (9th ed.). Philadelphia: Lippincott.

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, *84*(3), 261-271. https://doi.org/10.1037/0022-0663.84.3.261

American Psychological Association. (2010). *Manual de Publicaciones de la APA*. Mexico City: Editorial El Manual Moderno.

Antón, J. L. (1990). *Balonmano: fundamentos y etapas de aprendizaje*. Madrid: Gymnos.

Báguena, J. I., Sevil, J., Julián, J. A., Murillo, B., & García, L. (2014). El aprendizaje del voleibol basado en el juego en Educación Física y su efecto sobre variables motivacionales situacionales. *Ágora para la Educación Física y el deporte*, *16*(3), 255-270.

Balakrishnan, M., Shabeshan, R., & Salleh, M. (2011). Effect of Teaching Games for Understanding. *World Academy of Science, Engineering and Technology*, *77*, 961-963.

Barrett, T. (2005). Effects of cooperative learning on the performance of sixth-grade physical education students. *Journal of Teaching in Physical Education*, *24*, 88-102. https://doi.org/10.1123/jtpe.24.1.88

Bunker, D., & Thorpe, R. (1982). A model for the teaching of games in secondary schools. *Bulletin of Physical Education*, *18*(1), 5-8.

Casey, A., & Dyson, B. (2009). The implementation of models-based practice in physical education through action research. *European Physical Education Review*, *15*(2), 175-199. https://doi.org/10.1177/1356336X09345222

Casey, A., Dyson, B., & Campbell, A. (2009). Action research in physical education: Focusing beyond myself through cooperative learning. *Educational Action Research*, *17*(3), 407-423. https://doi.org/10.1080/09650790903093508

Chen, S., & Light, R. (2006). 'I thought I'd hate cricket but I love it!': Year six students' responses to Games Sense pedagogy. *Change: Transformations in Education*, *9*(1), 49-58.

Duda, J. L. (2005). Motivation in Sport: The Relevance of Competence and Achievement Goals. In A. J. Elliot, & C. S. Dweck (Eds.), *Handbook of Competence and Motivation* (pp. 273-308). New York: Guilford Publications.

Dyson, B. (2002). The implementation of cooperative learning in an elementary physical education program. *Journal of Teaching in Physical Education*, *22*, 69-85. https://doi.org/10.1123/jtpe.22.1.69

Dyson, B. (2010). Un modelo híbrido de instrucción en Educación Física: integrando los modelos del aprendizaje cooperativo y de los juegos tácticos. In C. Velázquez (Ed.), *Aprendizaje cooperativo en Educación Física: fundamentos y aplicaciones prácticas* (pp. 99-118). Barcelona: INDE Publicaciones.

Fernández-Río, J. (2009). El modelo de Aprendizaje Cooperativo. Conexiones con la Enseñanza Comprensiva. In A. Méndez-Giménez (Ed.), *Modelos actuales de iniciación deportiva escolar: Unidades didácticas sobre deportes de invasión* (pp. 75-99). Sevilla: Wanceulen.

Fernández-Río, J., & Méndez-Giménez, A. (2016). El Aprendizaje Cooperativo: Modelo Pedagógico para Educación Física. *Retos. Nuevas Tendencias en Educación Física, Deporte y Recreación*, *29*, 201-206.

Fry, J. M., Tan, C. W. K., McNeill, M., & Wright, S. (2010). Children's perspectives on conceptual games teaching: A value-adding experience. *Physical Education and Sport Pedagogy*, *15*(2), 139-158. https://doi.org/10.1080/17408980902813927

González, C., Cecchini, J. A., Fernández-Río, J., & Méndez, A. (2008). Posibilidades del modelo comprensivo del aprendizaje cooperativo para la enseñanza deportiva en el contexto educativo. *Aula Abierta*, *36*(1,2), 27-38.

González-Cutre, D., Sicilia, Á., & Moreno, J. A. (2008). Modelo cognitivo-social de la motivación de logro en Educación Física. *Psicothema*, *20*(4), 642-651.

González-Cutre, D., Sicilia, Á., & Moreno, J. A. (2011). Un estudio cuasi-experimental de los efectos del clima motivador tarea en las clases de Educación Física. *Revista de educación*, *356*, 677-700.

Gray, S., Sproule, J., & Morgan, K. (2009). Teaching team invasion games and motivational climate. *European Physical Education Review*, *15*(1), 65-89. https://doi.org/10.1177/1356336X09105212

Griffin, L., Oslin, J. L., & Mitchell, S. A. (1995). An analysis of two instructional approaches to teaching net games. *Research Quarterly for Exercise and Sport*, *66*, 65-66.

Griffin, L. L., & Patton, K. (2005). Two decades of teaching games for understanding: Looking at the past, present, and future. In L. Griffin, & J. Butler (Eds.), *Teaching Games for Understanding: Theory, Research, and Practice* (pp. 1-17). Champaign, Illinois: Human Kinetics.

Griffin, L., Brooker, R., & Patton, K. (2006). Working towards legitimacy: Two decades of teaching games for understanding. *Physical Education and Sport Pedagogy*, *10*(3), 213-223. https://doi.org/10.1080/17408980500340703

Gröben, B. (2005). Wirkungen des Kooperativen Lernens im Spiegel der Unterrichtsforschung. *Sportpädagogik*, *29*(6), 48-52.

Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1999). *El aprendizaje cooperativo en el aula*. Buenos Aires: Paidós.

Johnson, J. G., & Raab, M. (2003). Take the first: Option-generation and resulting choices. *Organizational Behaviour and Human Decision Processes*, *91*, 215-229. https://doi.org/10.1016/S0749-5978(03)00027-X

Jones, R. J. A., Marshall, S., & Peters, D. M. (2010). Can we play a game now? The intrinsic value of TGfU. *European Journal of Physical and Health Education*, *4*(2), 57-63.

Kirk, D., Macdonald, D., & O'Sullivan, M. (2006). *Handbook of Physical Education*. London: SAGE Publications.

Light, R. (2003). The joy of learning: Emotion and leaning in games through TGfU. *Journal of Physical Education New Zealand*, *36*(1), 93-108.

López, V. M., Monjas, R., & Pérez, D. (2003*). Buscando alternativas a la forma de entender y practicar la educación física escolar*. Barcelona: Inde.

Memmert, D., Simons, D. J., & Grimme, T. (2009). The relationship between visual attention and expertise in sports. *Psychology of Sport and Exercise*, *10*, 146-151. https://doi.org/10.1016/j.psychsport.2008.06.002

Méndez-Giménez, A. (2010). El Aprendizaje Cooperativo, la Enseñanza Comprensiva y el Modelo de Educación Deportiva: revisión de analogías, características e hibridaciones. In A. Fraile, & Velázquez, C. (Eds.), *VII Congreso Internacional de Actividades Físicas Cooperativas, Valladolid: 30 de junio al 3 de julio de 2010* (pp. 1-29). Valladolid: Universidad de Valladolid.

Mertens, D. M. (2010). *Research and Evaluation in Education and Psychology: Integrating Diversity with Quantitative, Qualitative, and Mixed Methods* (3rd ed.). Thousand Oaks, CA: SAGE.

Metzler, M. W. (2011). *Instructional Models for Physical Education*. Scottsdale, Arizona: Holcomb Hathway.

Moreno, J. A., Cervelló, E., Huéscar, E., Belando, N., & Rodríguez, J. J. (2013). Motivational Profiles in Physical Education and Their Relation to the Theory of Planned Behaviour. *Journal of Sports Science & Medicine*, *12*(3), 551-558.

Morgan, K., Kingston, K., & Sproule, J. (2005). Effects of different teaching styles on the teacher behaviours that influence motivational climate and pupils' motivation in physical education. *European Physical Education Review*, *11*(3), 257-285. https://doi.org/10.1177/1356336X05056651

Müller, M., Gert-Stein, H., Konzag, I., & Konngaz, B. (1996). *Balonmano: entrenarse jugando*. Barcelona: Paidotribo.

Newton, M. L., Duda, J. L., & Yin, Z. (2000). Examination of the psychometric properties of the Perceived Motivational Climate in Sport Questionnaire-2 in a sample of female athletes. *Journal of Sport Science*, *18*(4), 275-290. https://doi.org/10.1080/026404100365018

O'Leary, N. (2015). Learning informally to use the 'full version' of teaching games for understanding. *European Physical Education Review, 22*(1), 3-22. https://doi.org/10.1177/1356336X15586177

Peiró, C. (1999). La teoría de las perspectivas de meta y la Educación Física: un estudio sobre los climas motivacionales. *Revista de psicología social aplicada*, *9*(1), 25-44.

Prieto, J. A., & Nistal, P. (2009). Influencia del aprendizaje cooperativo en Educación Física. *Revista Iberoamericana de Educación*, *49*(4), 1-8.

Raab, M., & Johnson, J. G. (2007). Expertise-based differences in search and option-generation strategies. *Journal of Experimental Psychology*, *13*(3), 158-170. https://doi.org/10.1037/1076-898X.13.3.158

Raab, M., & Laborde, S. (2011). When to blink and when to think: Preference for intuitive decisions results in faster and better tactical choices. *Research Quarterly for Exercise and Sport*, *82*, 89-98. https://doi.org/10.1080/02701367.2011.10599725

Renshaw, I., Araújo, D., Button, C., Chow, J. Y., Davids, K., & Brendan, M. (2016). Why the Constraints-Led Approach is Not Teaching Games for Understanding: A Clarification. *Physical Education and Sport Pedagogy*, *21*(5), 459-480. https://doi.org/10.1080/17408989.2015.1095870

Ryan, R. M., & Deci, E. L. (2007). Active human nature: Self-determination theory and the promotion and maintenance of sport, exercise, and health. In M. S. Hagger, & N. L. D. Chatzisarantis (Eds.), *Intrinsic Motivation and Self-Determination in Exercise and Sport* (pp. 1-19). Champaign, IL: Human Kinetics.

Sánchez-Gómez, R., Devís-Devís, J., & Navarro-Adelantado, V. (2011). Los juegos y las modificaciones según el alumnado en el modelo comprensivo. *Tándem: Didáctica de la Educación Física*, *37*, 20-30.

Swinney, G. (2004). Teaching Games for Understanding/Games Sense. What´s about All It? Hitting the Same. *The Official Newsletter of the England and Wales Cricket Board Coach Education Department*, *14*, 10-11.

Thorpe, R., Bunker, D., & Almond, L. (1984). A change in focus for the teaching of games. In M. Pieron, & G. Graham (Eds.), *Sport Pedagogy. Olympic Scientific Congress Proceedings, Vol. 6* (pp. 163-169). Champaign, IL: Human Kinetics.

Tinning, R. (1996). Discursos que orientan el campo del movimiento humano y el problema de la formación del profesorado. *Revista de Educación*, *311*, 123-134.

Tinning, R. (2006). Theoretical orientations in physical education teacher education. In D. Kirk, D. MacDonald, & M. O'Sullivan (Eds.), *The Handbook of Physical Education* (pp. 369-385). London: SAGE. https://doi.org/10.4135/9781848608009.n21

Treasure, D. C. (1993). *A Social-Cognitive Approach to Understanding Children's Achievement Behaviour, Cognitions, and Affect in Competitive Sport*. (Unpublished doctoral dissertation, University of Illinois). Illinois: University of Illinois at Urbana-Champaign.

Úbeda-Colomer, J., Monforte, J., & Devís-Devís, J. (2017). Percepción del alumnado sobre una unidad didáctica de enseñanza comprensiva de los juegos deportivos de invasión en educación física. *Retos*, *31*, 275-281.

Vazou, S., Ntoumanis, N., & Duda, J. (2005). Peer motivational climate in youth sport: a qualitative inquiry. *Psychology of Sport and Exercise*, *6*(5), 497-516. https://doi.org/10.1016/j.psychsport.2004.03.005

Velázquez, C. (2015). Aprendizaje cooperativo en Educación Física: estado de la cuestión y propuesta de intervención. *Retos*, *28*, 234-239.

Wagner, H., Finkenzeller, T., Würth, S., & von Duvillard, S. P. (2014). Individual and Team Performance in Team-Handball: A Review. *Journal of Sports Science & Medicine*, *13*(4), 808-816.

Wang, L., & Ha, A. (2013). Three groups of teachers' views, learning experiences, and understandings of teaching games for understanding. *Physical Education and Sport Pedagogy*, *18*(3), 336-350. https://doi.org/10.1080/17408989.2012.666789

Werner, P., Thorpe, R., & Bunker, D. (1996). Teaching Games for Understanding: Evolution of a Model. *Journal of Physical Education, Recreation & Dance*, *67*(1), 28-33. https://doi.org/10.1080/07303084.1996.10607176

Óscar Chiva-Bartoll
Jaume I University, Department of Education
Av. Sos Baynat s/n, Castelló 12071, Spain
ochiva@uji.es

Celina Salvador García
Jaume I University, Department of Education
Av. Sos Baynat s/n, Castelló 12071, Spain
salvadoc@uji.es

Pedro Jesús Ruiz-Montero
University of Granada,
Department of Physical Education and Sport
C/Santander, 1, 52071 Melilla 52071, Spain
pedrorumo@ugr.es

Učenje igara s razumijevanjem i suradničko učenje: može li njihova hibridizacija povećati motivacijsku klimu na satima Tjelesne i zdravstvene kulture?

Sažetak

Rad istražuje razvoj motivacijske klime među učenicima na satima Tjelesne i zdravstvene kulture putem hibridizacije suradničkog učenja i modela učenja igara s razumijevanjem u kontekstu nastavne jedinice posvećene rukometu. Uzorak od 96 učenika prosječne dobi od 15 godina podijeljen je u eksperimentalnu (31 učenik) i kontrolnu skupinu (65 učenika). Razvoj motivacijske klime potaknut hibridnim modelom (eksperimentalna skupina) uspoređen je s rezultatima dobivenim s pomoću tradicionalnog pristupa učenju (kontrolna skupina). Rezultati upućuju na razlike između skale za mjerenje usmjerenosti na zadatak (podskale trud/napredak i važnost uloge) i skale za mjerenje usmjerenosti na ego (podskala nejednakog priznavanja). Otkrivene su značajne razlike među dvjema skalama na polju doživljene motivacijske klime, što je u skladu s rezultatima koje su slična istraživanja dobila analizirajući druge sportove.

Ključne riječi: *metodika poučavanja; motivacijska klima; srednja škola; suradničko učenje; tjelesni odgoj.*

Uvod

Kurikuli nastavnog predmeta Tjelesna i zdravstvena kultura (TZK) proteklih su desetljeća reformirani u većini zemalja diljem svijeta. Cilj tih novih, reformiranih kurikula, nije samo odgoj fizičkoga tijela, već razvoj tjelesno obrazovanih pojedinaca koji posjeduju znanja, vještine i pouzdanje koje će im omogućiti da vode život ispunjen zdravim tjelesnim aktivnostima (Wang i Ha, 2013). U tom smislu brojni pedagoški modeli utemeljeni na konstruktivizmu privlače sve više pozornosti nastavnika i istraživača. Među njima se naročito ističe model „učenja igara s razumijevanjem" (eng. *Teaching Games for Understanding*, skrać. TGfU; Bunker i Thorpe, 1982), pristup Tjelesnoj i zdravstvenoj kulturi usmjeren na učenika, koji nastavnike potiče

na osmišljavanje prilagođenih igara koje će učenicima pomoći da razviju bolje razumijevanje taktičkih koncepata (Griffin, Brooker, i Patton, 2006; Renshaw, Araújo, Button, Chow, Davids, i Brendan, 2016). Oslanjajući se na konstruktivistička načela učenja (Griffin i Patton, 2005), model učenja igara s razumijevanjem pokazuje da golem značaj kognitivnih funkcija uvelike proizlazi iz procesa donošenja odluka (Balakrishnan, Shabeshan, i Salleh, 2011; Johnson i Raab, 2003; Raab i Johnson, 2007; Raab i Laborde, 2011; Wagner, Finkenzeller, Würtn, i von Duvillard, 2014) i pozornosti koje zahtijevaju same igre (Memmert, Simons, i Grimme, 2009; Swinney, 2004). Tablica 1 pokazuje glavne elemente koji su nužni za svladavanje i učenje o sportovima s pomoću modela učenja igara s razumijevanjem.

Tablica 1

Vrednovanje učenika s pomoću modela učenja igara s razumijevanjem

Vrednovanje učenika
Učenici imaju vremena razmisliti o otvorenim pitanjima
Učenici sudjeluju u donošenju taktičkih odluka
Učenici usvajaju sve više taktičkog znanja, napredujući od početnih igara, preko uvježbavanja tehnika/vještina, do konačne igre
Učenici razvijaju taktičku svijest, procese donošenja odluka i primjene vještina

Bilješka. Nastalo prilagodbom modela koji su razvili Bunker i Thorpe (1982); Metzler (2011); O'Leary (2015); Thorpe, Bunker i Almond (1984).

Nadalje, suradničko je učenje obrazovna metoda u sklopu koje manje skupine učenika različitih razina sposobnosti zajednički rade na zadatku kako bi maksimizirali vlastiti i tuđe procese učenja i dijeljenja uloženog napora i izvora (Johnson, Johnson, i Holubec, 1999). Nadalje, školski kurikul nastavnog predmeta Tjelesna i zdravstvena kultura najvećim je dijelom posvećen igrama (Werner, Thorpe, i Bunker, 1996), koje je moguće igrati u kontekstu toga pristupa. Riječ je o metodologiji koja nadilazi puki grupni rad jer učenicima cilj nije samo naučiti određeni sadržaj, već i pomoći kolegama i kolegicama iz razreda da ostvare svoje ciljeve učenja (Dyson, 2002). Ta se metodologija stoga općenito smatra korisnom za poticanje pozitivne atmosfere u učionici, uvećanja samospoznaje među učenicima, uključivanja učenika s poteškoćama, suobrazovanja i motivacije za predmet (Velázquez, 2015).

Fernández-Río i Méndez-Giménez (2016) tvrde da se suradničko učenje uspješno primjenjuje u kurikulu nastavnog predmeta Tjelesne i zdravstvene kulture sa svrhom razvijanja različitih sadržaja kao što su (između ostalih) osnovne vještine, gimnastičke vještine, tjelesna sprema i zdravlje, izražajne ili aktivnosti koje se izvode vani. Međutim, njegova primjena u procesu poučavanja i učenja sportova do sada je bila složena i problematična. Povezivanje suradničkog učenja sa sportskim obrazovanjem obično podrazumijeva uvođenje niza strategija kao što su prilagođavanje pravila aktivnosti, smanjivanje, pa čak i uklanjanje natjecateljske komponente, uvećavanje suradničke komponente, kao i preobrazba sporta s ciljem stvaranja novih igara ili aktivnosti sa stajališta suradnje. Gröben (2005) primjenjuje suradničke strukture učenja pri

poučavanju odbojke na osnovnoškolskoj razini, s implikacijama za prijenos i društveno unapređivanje. Nadalje, taj proces nema negativan utjecaj na samopercepciju i razvoj motoričkih sposobnosti, a pridonosi uvećanju postotka ispravnih pokušaja (Barrett, 2005).

Trenutno postoji tendencija prema hibridizaciji pedagoških modela s ciljem uvećavanja njihova utjecaja, budući da mnogi od njih nadopunjuju jedni druge (Fernández-Río i Méndez-Giménez, 2016; González, Cecchini, Fernández-Rio, i Méndez, 2008). Slijedom toga, suradničko je učenje već u nekoliko prigoda pridruženo modelu učenja igara s razumijevanjem sa svrhom bolje obrade sportskih sadržaja nastavnog predmeta Tjelesna i zdravstvena kultura (Méndez-Giménez, 2010). Hibridni suradnički model TGfU, koji se koristio u ovdje predstavljenom istraživanju, nastoji profitirati od prijašnje potrebe za sustavom klasifikacije sportskih igara utemeljenih na taktičkim zahtjevima pojedinačnih igara. Osim toga, usprkos sličnostima u strukturi samih igara, moguće ih je mijenjati i prilagoditi u skladu s dobi i vještinama učenika. Osim toga, pridodana su i pretjerivanja taktičkog problema koji valja razviti.

Nadalje, nekoliko istraživanja pokazalo je da je motivacija učenika ključan čimbenik za unapređivanje njihove tjelovježbe (Moreno, Cervelló, Huéscar, Belando, i Rodríguez, 2013). U tom je smislu važno imati na umu dvije glavne sociokognitivne teorije motivacije, koje objašnjavaju vrste ponašanja koja se javljaju za vrijeme nastave Tjelesne i zdravstvene kulture: teoriju postignuća cilja i teoriju samodeterminacije. Teorija postignuća cilja (Ames, 1992) smatra se jednim od teorijskih modela koji kritički pridonosi razumijevanju kognitivnih, bihevioralnih i emocionalnih obrazaca vezanih uz uspjeh učenika na satima Tjelesne i zdravstvene kulture. Spomenuta teorija razlikuje dva oprečna konstrukta postignuća ciljeva, od kojih se svaki vezuje za oprečne obrasce motivacijskog procesa: ciljevi koji uključuju ego (usmjereni na izvedbu) i ciljevi koji uključuju zadatak (usmjereni na svladavanje).

Teorija samodeterminacije orijentirana je na samomotivaciju, integraciju osobnosti, društveno funkcioniranje i uvjete koji omogućavaju te pozitivne procese. Motivacija učenika za izvođenje pojedine aktivnosti uvjetovana je ispunjavanjem tih potreba. U tom je smislu moguće razlikovati nekoliko tipova motivacije: intrinzična (unutarnja) motivacija, ekstrinzična (vanjska) motivacija i amotivacija (Ryan i Deci, 2007). González-Cutre, Sicilia, i Moreno (2011) manipulirali su ciljnim područjima kroz nekoliko motivacijskih varijabli sa svrhom analiziranja učinaka okruženja orijentiranog na zadatak. Među učenicima u intervencijskoj skupini zabilježeno je poboljšanje na polju percepcije okruženja zadatka, pristupajuće ciljne orijentacije, izbjegavajuće ciljne orijentacije i intrinzične motivacije.

Iako suradničko učenje nije posebno usmjereno na motivacijsko okruženje, utvrđen je njegov pozitivan učinak na motivaciju učenika. Čini se da je suradničko učenje bolje od tradicionalnog, ne samo u odnosu na motivaciju vezanu uz razvoj motoričkih vještina (Fernández-Río, 2009) već i u odnosu na postizanje društvenih, motivacijskih i afektivnih ciljeva (Prieto i Nistal, 2009). Stoga je i hibridan model moguće povezati s motivacijom za sudjelovanje u zadacima.

Slično tome, moguće je razviti sljedeće teorijske pretpostavke, utemeljene na načelima hibridnog modela. Oni konteksti u kojima se potiče međusobno nadmetanje, javna evaluacija i normativna povratna informacija vezana uz razvoj pojedinog zadatka, uglavnom se kristalizira u učeničkoj motivaciji orijentiranoj na izvedbu. Nasuprot tomu, oni konteksti koji ističu proces učenja, sudjelovanje, pojedinačno svladavanje zadataka i rješavanja problema pridonose usvajanju kriterija za uspjeh orijentiran na postignuće (Peiró, 1999).

Dok je nekoliko istraživanja primijenilo hibridni model učenja na istraživanje sportova kao što su atletika (Casey, Dyson, i Campbell, 2009), tenis (Casey i Dyson, 2009), košarka (Fernández-Río, 2009) ili odbojka i nogomet (Dyson, 2010), nijedno zabilježeno istraživanje nije posvećeno rukometu. Ovdje predstavljeno istraživanje, usmjereno upravo na rukomet, stoga nudi doprinos tom području znanja. Nužnost analize hibridnog modela rukometa proizlazi iz činjenice da se radi o sportu koji je među najzastupljenijima u kurikulima širom svijeta (Kirk, Macdonald, i O'Sullivan, 2006). Dobiveni rezultati omogućit će nam da usporedimo i raspravimo o učincima primjene hibridnog modela na poučavanje i učenje rukometa u odnosu na druge sportove.

Glavni cilj istraživanja jest utvrditi promiču li prije spomenute teorijske spone između suradničkog učenja i modela TGfU razvoj određene motivacijske klime, te razlikuju li se ti rezultati od onih dobivenih tradicionalnim pristupom poučavanja sporta u okviru nastavnog predmeta Tjelesna i zdravstvena kultura. Ovdje predstavljeno istraživanje u obzir uzima dvije hipoteze: (1) varijable vezane uz percipirano motivacijsko okruženje bit će unaprijeđene nakon primjene nastavne jedinice, ukazujući na uvećanje usmjerenosti na ciljeve koji uključuju zadatak, odnosno smanjenje usmjerenosti na ciljeve koji uključuju ego među učenicima koji pohađaju nastavu provođenu prema hibridnom modelu; (2) varijable vezane uz percipiranu motivacijsku klimu razlikuju se kad usporedimo razvoj dviju skupina sudionika (hibridni model i tradicionalni pristup).

Metode

Sudionici

Uzorak od 96 učenika četvrtog razreda srednje škole u Valenciji (Španjolska) sudjelovao je u ovom istraživanju za vrijeme akademske godine 2015./2016. Eksperimentalna skupina obuhvatila je 31 učenika (16 djevojaka i 15 mladića), a kontrolna skupina njih 65 (34 djevojke i 31 mladić). Ta vrsta distribucije uzorka odgovara široko raširenoj uporabi intaktnih skupina u istraživanju obrazovanja (Mertens, 2010). Kako ne bismo zanemarili nikoga od učenika, u istraživanje smo odlučili uključiti tri skupine učenika: jednoj od njih pripala je uloga eksperimentalne skupine, a druge su dvije spojene u kontrolnu skupinu. Prije nego su uključeni u istraživanje, svi učenici i njihove obitelji obaviješteni su o njegovu cilju. Nadalje, od svih sudionika (učenici i njihove obitelji) dobiven je pismeni pristanak.

Mjere

Učenici su odgovarali na pitanja iz upitnika o samoopaženoj motivacijskoj klimi u sportu (eng. *Perceived Motivational Climate in Sport Questionnaire*, skrać. PMCSQ-2; Newton, Duda, i Yin, 2000), prilagođenog predmetu Tjelesna i zdravstvena kultura, koji su na španjolski preveli González-Cutre, Sicilia, i Moreno (2008). Instrument sadrži 33 elementa podijeljena na skale koje mjere usmjerenost na zadatak i usmjerenost na ego. Skala kojom se mjeri usmjerenost na zadatak sastoji se od 17 elemenata, a skala kojom se mjeri usmjerenost na ego sadrži 16 elemenata. Skala kojom se mjeri usmjerenost na zadatak obuhvaća podskale za mjerenje suradničkog učenja (četiri elementa), truda/napretka (osam elemenata) i važnosti uloge (pet elemenata), a skala kojom se mjeri usmjerenost na ego obuhvaća podskale kojima se mjeri kažnjavanje pogrešaka (šest elemenata), nejednako priznavanje (sedam elemenata), suparništvo među članovima momčadi (tri elementa). Svakom elementu upitnika prethodi formulacija „Na satima Tjelesne i zdravstvene kulture…", a slijedi ga Likertova skala raspona od 1 (uopće se ne slažem) do 5 (u potpunosti se slažem). Prethodna istraživanja usmjerena na sport i druge tjelesne aktivnosti potvrđuju pouzdanost i faktorsku valjanost upitnika o samoopaženoj motivacijskoj klimi u sportu (Newton i sur., 2000).

Provedba

Korišten je polueksperimentalni dizajn s neekvivalentnim grupnim dizajnom pred- i post-testiranja. Podatci su prikupljani dva puta. Ovdje predstavljeno istraživanje započeto je početkom ožujka i završeno potkraj travnja 2016. godine (trajanje: osam tjedana), kada je provedeno posttestiranje. Eksperimentalna skupina razvila je nastavnu jedinicu utemeljenu na suradničkom hibridnom modelu TGfU za učenje sportova. Nasuprot tome, kontrolna je skupina učila drugu nastavnu jedinicu utemeljenu na tradicionalnom pristupu nastavi sporta. Intervencijski hibridni model u tom je razdoblju ostvario stopu pohađanja od 90%.

Slijedeći prijedlog koji je razvio Fernández-Río (2009), nastavna jedinica rukometa poučavala se s pomoću suradničkog, hibridnog modela TGfU za učenje sportova. Intervencija je vezana uz pristup diskursima orijentiranim na izvedbu (Tinning, 1996) u nastavi Tjelesne i zdravstvene kulture, koji je istodobno karakterističan za racionalnost kurikula orijentiranog na izvedbu (López, Monjas, i Pérez, 2003; Tinning, 2006). Tablica 2 prikazuje konfiguraciju nastavne jedinice.

Hibridni se model sastoji od sadržaja vezanih uz odbojku (početni – srednji stupanj) koji se uvijek prilagođuje zakonima koji su na snazi u danom trenutku u kontekstu primjene. Osam sesija (svaka u trajanju od 55 – 60 minuta, popraćena učinkovitom 45-minutnom tjelovježbom) obuhvaćenih ovim intervencijskim programom odvijalo se dva puta tjedno, u skladu s preporukama Američkog fakulteta za sportsku medicinu (eng. *American College for Sports Medicine*, skrać. ACSM, 2014) i modelima koje su razvili Müller, Gert-Stein, Konzag, i Konngaz (1996), kao i Antón (1990). Fizičku spremu sudionika i izvođenje tjelovježbi nadzirali su specijalisti. Na kraju je

španjolska inačica upitnika PMCSQ-2, zbog njegove specifičnosti, blago prilagođena potrebama nastavnog predmeta Tjelesna i zdravstvena kultura. Pojam „trener" stoga je promijenjen u „nastavnik", „sportaš" u „učenik", a „trening" u „nastavni sat".

Istraživanje se vodilo etičkim propisima Američke psihološke udruge (APA, 2010) čime je, između ostaloga, osigurana vjernost i odgovornost za vrijeme istraživanja.

Tablica 2

Dizajn nastavne jedinice predložene inovacije.

Nastavna jedinica: RUKOMET – srednjoškolsko obrazovanje
Ciljevi učenja – Razumjeti i primijeniti glavna načela vezana uz rukomet. – Razumjeti važnost suradnje i naučiti surađivati sa svrhom pomaganja momčadi da pobijedi u igrama i utakmicama. – Razviti odgovornost za vlastiti proces učenja preuzimanjem uloge suca ili trenera. – Biti aktivan sudionik vlastitog i procesa učenja drugih učenika u razredu.
Sadržaj – Rukomet: timski, suradnički, suparnički sport. – Razvoj suradničkih igara u skupinama, vezanih uz osnovne vještine igrača rukometa, sa svrhom povećanja zabave. – Pravila odbojke koja će se primjenjivati za vrijeme utakmice. – Razumijevanje i objašnjavanje igara, promatranje i procjenjivanje osnovnih aspekata za njihov razvoj, nadgledanje poštivanja pravila. – Igranje igara koje postaju sve složenije, postupno prelazeći u standardni sport. – Analiza prednosti i nedostataka skupine, stvaranje strategija, prihvaćanje postignutih rezultata i predlaganje izmjena. – Razumijevanje vlastite odgovornosti u procesu učenja, uključujući samoocjenjivanje i suocjenjivanje.
Metodološki aspekti – Heterogene skupine ostaju iste za vrijeme nastavne jedinice posvećene timskim igrama vezanim uz rukomet i učenje iz perspektive skupine. – Igre su osmišljene na način koji olakšava postavljanje pitanja i potiče učenike na razmišljanje. – Suradničke radne strukture stvaraju se uz pomoć pretpostavke o različitim ulogama svakog člana skupine. Te se uloge mogu mijenjati s obzirom na nastavnu jedinicu.

Varijable

Zavisna je varijabla, sastavljena od usmjerenosti na zadatak i usmjerenosti na ego, bila motivacijska klima. Na sličan je način usmjerenost na zadatak dalje podijeljena na tri različite dimenzije: suradničko učenje, trud/napredak i važnost uloge, a usmjerenost na ego podijeljena je na tri dodatne dimenzije: kažnjavanje pogrešaka, nejednako priznavanje i suparništvo među članovima momčadi. Na kraju je devet zavisnih varijabli analizirano u odnosu na dvije nezavisne varijable: pristup poučavanju nastavne jedinice (suradnički hibridni model učenja igara s razumijevanjem i tradicionalni pristup) i trenutak mjerenja (prije i nakon primjene nastavne jedinice).

Statistička analiza

Normalnost distribucije testirana je primjenom koeficijenta asimetrije i z-testa koeficijenta zaobljenosti eksperimentalne i kontrolnih skupina. Ovdje valja istaknuti da je koeficijent zaobljenosti očito veći od 0 (otprilike veći od 1), da je F uglavnom

premalen, te da ne možemo odbaciti nultu hipotezu, iako je netočna. U slučaju kada koeficijent zaobljenosti iznosi manje od -1, vrijedi suprotno. U svakom slučaju, nijedan od testova ne može u potpunosti zamijeniti vizualno ispitivanje podataka uz pomoć histograma. Uzimajući u obzir spomenute točke, rezultati dobiveni ovim istraživanjem doveli su do primjene neparametrijske statistike.

Statističke metode društvenih znanos

ti koristile su se kako bi se izračunala srednja vrijednost, standardna devijacija (SD), kao i razlike u cjelokupnom uzorku, aktivnoj i kontrolnoj skupini uz pomoć Kruskal-Wallis testa jednosmjerne analize varijance dobi i roda. Kako bi se identificirale razlike u motivacijskom profilu varijabli između eksperimentalne i kontrolne skupine, Mann-Whitney U test koristio se na dvije neovisne skupine sudionika. Podatci su analizirani uz pomoć statističkog programa SPSS (SPSS za Windows 21.0, Inc., Chicago, Illinois, SAD). U svim analizama prihvaćen je značaj $P<0,05$.

Rezultati

Promjene u motivacijskoj klimi uspoređene su s pomoću španjolske inačice upitnika PMCSQ-2. Tablica 3 donosi pregled dobi i roda uzorka istraživanja (ukupno i prema skupinama).

Tablica 3

Potom, tablica 4 prikazuje deskriptivne vrijednosti profila motivacijskih postignuća: srednja vrijednost, standardna devijacija (SD), razvoj srednje vrijednosti od pred- do post-testiranja, te p-vrijednost.

Tablica 4

Prikupljeni podatci nisu zabilježili značajniju razliku u razvoju motivacijske klime (kao globalne varijable) između eksperimentalne i kontrolne skupine. Bez obzira na to, fokusiranjem na dvije skale testa (usmjerenost na zadatak i usmjerenost na ego) uočena je značajna razlika u njihovu razvoju. Osim toga, nekoliko njihovih podskala pokazuje statistički značajne razlike. To je slučaj s podskalama za trud/napredak i važnost uloge (skala za mjerenje usmjerenosti na zadatak), zatim podskale nejednako priznavanje (skala za mjerenje usmjerenosti na ego). Ostale podskale slijede slične obrasce iako usporedba njihova razvoja unutar različitih skupina nije statistički značajna.

Rasprava

Ovdje predstavljeno istraživanje ustanovilo je značajne razlike u razvoju skala za mjerenje ciljeva koji uključuju zadatak i onih koji uključuju ego. Prijašnja istraživanja bila su usmjerena na stavove učenika prema modelu TGfU te naglašavala pozitivno prihvaćanje, unapređenje taktičkog razmišljanja i sudjelovanja, kao i napredak na polju motivacije, zabave, zadovoljstva i natjecanja u sportskim igrama (Chen i Light,

2006; Fry, Tan, McNeill, i Wright, 2010; Griffin, Oslin, i Mitchell, 1995; Jones, Marshall, i Peters, 2010; Light, 2003; Sánchez-Gómez, Devís-Devís, i Navarro-Adelantado, 2011; Úbeda-Colomer, Monforte, i Devís-Devís, 2017). U nastavku teksta dobivene ćemo rezultate raspraviti u odnosu na prije postavljene ciljeve i hipoteze istraživanja.

Prvom je hipotezom pretpostavljeno da će se motivacijska klima promijeniti nakon primjene nastavne jedinice o rukometu uslijed uvećavanja usmjerenosti na zadatak i smanjivanja usmjerenosti na ego. Rezultati, koji ukazuju na značajne razlike na sve tri skale, potvrđuju tu pretpostavku. Zabilježen je značajan razvoj usmjerenosti na zadatak; razvoj usmjerenosti na ego slijedi identičan obrazac, ali se odvija u suprotnom smjeru. Ti rezultati sugeriraju da primijenjeni hibridni model pridonosi povećanju usmjerenosti na zadatak i smanjenju usmjerenosti na ego. Slično istraživanju koje su proveli Morgan, Kingston, i Sproule (2005), ovdje predstavljeno istraživanje pokazalo je da se na nastavi utemeljenoj na igrama raspravlja o ciljevima koji uključuju zadatak, kao što su razumijevanje igara, timski rad, uživanje i sudjelovanje. Nasuprot tome, na školskim satima orijentiranim na vještine raspravlja se jedino o vrijednosti učenja vještina i ocjenjivanju izvedbe utemeljenom na uspješnom izvođenju igre, dakle – ciljevima koji uključuju ego. Stoga se čini da strategije poučavanja orijentirane na igru promoviraju klimu pristupajuće ciljne orijentacije koja uvećava motivaciju učenika i smanjuje pojedinačne oblike ponašanja.

Statističkom usporedbom razvoja obiju skupina zabilježen je sličan napredak za ostale podskale (obuhvaćene prije spomenutim skalama). S jedne strane, razvoj podskala usmjerenosti na zadatak kao što su trud/napredak i važnost uloge statistički je značajan, što je možda uzrokovano pojedinačnom odgovornošću nastalom uslijed nove metodologije i uloga unutar skupina (Vazou, Ntoumanis, i Duda, 2005). S druge strane, podskala nejednakog prepoznavanja (skala usmjerenosti na ego) pokazuje značajne razlike između dviju skupina budući da se smanjuje u eksperimentalnoj, a uvećava u kontrolnoj skupini. Navedeni su rezultati podudarni onima koje su, uspoređujući učinke metodološkog pristupa utemeljenog na igrama i metodološkog pristupa utemeljenog na razvoju vještine u košarci dobili Gray, Sproule i Morgan (2009). U njihovu je istraživanju zabilježen porast na polju motivacijske klime. Naši rezultati pokazuju smanjenje na polju usmjerenosti na ego, što će zacijelo dovesti do uvećanja motivacije vezane uz samodeterminaciju učenika.

To je u skladu s rezultatima istraživanja koje su proveli González-Cutre i sur. (2011), koji su manipulirali ciljnim područjima kroz nekoliko motivacijskih varijabli. Njihovo istraživanje ukazuje na uvećanje na polju percepcije usmjerenosti na zadatak unutar eksperimentalne skupine i smanjenje na području usmjerenosti na ego. Nadalje, Báguena, Sevil, Julián, Murillo, i García (2014) ističu uvećanu percepciju usmjerenosti na zadatak među učenicima kojima je nastavna jedinica o odbojci predstavljena pristupom utemeljenim na modelu TGfU i posebnim strategijama ciljnih područja. Njihovi rezultati odgovaraju onima predstavljenim u ovom radu; naime, rezultati oba

istraživanja ukazuju na uvećanje na polju usmjerenosti na zadatak, ali ne i smanjenje na polju usmjerenosti na ego. Temeljeći našu pretpostavku na kvalitativnoj analizi koju su razvili Vazou i sur. (2005), to nas navodi na zaključak da su aspekti vezani uz suradničko učenje (uključujući hibridni model primijenjen u ovom radu) oni koji podrazumijevaju opadanje usmjerenosti na ego.

Druga hipoteza sugerira da se razvoj motivacijske klime razlikuje uslijed promjena koje su iskusili oni učenici koji su pohađali sat na kojem je nastavna jedinica o rukometu predstavljena uz pomoć hibridnog modela poučavanja. Naši rezultati ne potvrđuju tu hipotezu. Razvoj varijable motivacijske klime u eksperimentalnoj i kontrolnim skupinama nije statistički različit. Na prvi se pogled radi o neočekivanom otkriću budući da je motivacijska klima tijesno vezana uz hibridni model, pa je stoga skupina u kojoj je primijenjen taj pristup trebala pokazati veći napredak u odnosu na kontrolnu skupina. Međutim, kako navodi Duda (2005), dobivene se rezultate može objasniti uz pomoć interferencije koja je mogla uzrokovati orijentaciju percepcije strategija i druge dimenzije vezane uz određenu motivacijsku klimu. Štoviše, usporedimo li odvojeno razvoj dviju glavnih skala motivacijske klime, uočavamo značajan napredak na polju usmjerenosti na zadatak u korist eksperimentalne skupine, te suprotan obrazac na polju usmjerenosti na ego. Važne razlike zabilježene su u razvoju brojnih podskala kao što su trud/napredak, važnost uloge i nejednako priznavanje, što je u skladu s rezultatima drugih relevantnih istraživanja, poput onih koje su proveli Ames (1992), Gray i sur. (2009) i Treasure (1993).

Spomenuti rezultati odgovaraju rezultatima istraživanja koje su proveli Morgan i sur. (2005): analizom učinka četiri stila poučavanja na motivacijsku klimu i ponašanje učenika, Morgan i sur. otkrili su da recipročan i stil vođenog otkrivanja pridonose uvećanju na polju usmjerenosti na zadatak i smanjenju na polju usmjerenosti na ego, čime taj stil zadobiva veći značaj nego stilovi zapovijedanja i vježbanja. To ne čudi imamo li na umu činjenicu da recipročan i stil vođenog otkrića odgovaraju metodi korištenoj u hibridnom modelu, a da stilovi zapovijedanja i vježbanja odgovaraju tradicionalnom pristupu poučavanju sporta.

Zaključci

Na temelju našeg istraživanja došli smo do sljedećih zaključaka:

Prva je hipoteza prihvaćena budući da su ustanovljene značajne razlike među dvjema skalama upitnika vezanim uz napredak obiju skupina. Usporedili smo njihov razvoj i zabilježili značajne razlike na skalama usmjerenosti na zadatak i usmjerenosti na ego. Usmjerenost na zadatak porasla je u eksperimentalnoj skupini i smanjila se u kontrolnoj skupini, a razvoj usmjerenosti na ego slijedio je suprotan obrazac.

Druga hipoteza nije prihvaćena jer nisu ustanovljene značajne razlike u napretku motivacijske klime između eksperimentalne i kontrolne skupine. Rezultati nisu pokazali značajniji napredak u razvoju globalne varijable, možda zbog činjenice da su dvije skale koje ga čine (usmjerenost na zadatak i usmjerenost na ego) međusobno

oprečne. Međutim, razmotrimo li njihov razvoj zasebno, uočavamo značajne razlike koje ukazuju na učinak hibridnog modela.

U vezi s glavnim ciljem istraživanja naši rezultati pokazuju da je provođenje nastavne jedinice posvećene rukometu uz pomoć hibridnog modela (suradničko učenje i model učenja igara s razumijevanjem) poučavanja sporta bilo uspješno s obzirom na motivacijsku klimu. Nasuprot tome, nastavna jedinica utemeljena na tradicionalnom pristupu nije pokazala tako pozitivan učinak.

Na kraju, napomenimo da za rezultate predstavljene u ovom radu vrijede barem dva tipa ograničenja: prvo, kratko razdoblje intervencije možda je imalo ograničavajući učinak na motivacijsku klimu među učenicima; drugo, broj sudionika istraživanja relativno je malen. Međutim, radi se o nedostatcima karakterističnima za istraživanja inovativnih praksi u obrazovanju.