

## **Satisfaction of teaching alternative basketball skills on 5<sup>th</sup> & 6<sup>th</sup> graders**

Masadis<sup>1</sup>, Gr., Bebetos<sup>1</sup>, E., Kouli<sup>1</sup>, O., Lemonidis<sup>1</sup>, N., Mavridis<sup>1</sup>, G., Bizetas<sup>2</sup>, St., Karagiannidou<sup>3</sup>, V., Rokka<sup>1</sup>, St., Samara<sup>4</sup>, E., Varsami<sup>5</sup>, D., & Filippou<sup>1\*</sup>, F.

<sup>1</sup>*Democritus University of Thrace, School of Physical Education & Sport Science, Komotini, Greece*

<sup>2</sup>*6<sup>th</sup> High School of Veroia, Greece*

<sup>3</sup>*Evening High School of Veroia, Veroia, Greece*

<sup>4</sup>*5<sup>th</sup> High School of Katerini, Katerini, Greece*

<sup>5</sup>*High School of Makrochori, Imathia, Greece*

*\*Corresponding Author:*

---

**Abstract:** The purpose of this work was to explore the receiving satisfaction of elementary school students from their participation in the physical education course and more specifically during the teaching of basketball techniques through three different methods. In addition, gender was examined as a factor in differentiating satisfaction. The survey included 387 students attending the 5<sup>th</sup> and 6<sup>th</sup> grade of 12 elementary schools from all over Greece. The intrusive program was 8 weeks long with a teaching frequency of 1 course lasting 45min/ week. The teaching methods used were a. teaching to groups of students with the same type of intelligence, b. the guided discovery method and the teamwork method and c. the method of command. The Greek version of the physical activity satisfaction class questionnaire was used to collect the research data. For the statistical analysis of the data, descriptive statistics data were used, two-way Univariate Analysis of Variance and reliability analysis (Cronbach's  $\alpha$ ) was carried out. Statistical analysis of the research data shows that: a. students who were taught basketball techniques in groups with the same type of intelligence, teamwork method and guided discovery were more satisfied compared with the students who have been taught them by the command method. b. satisfaction recruiting is not differentiated from gender. Analysis of the research data concludes that a. the teaching method is a factor in the differentiation of the degree of satisfaction; b. student-centric teaching methods contribute to maximizing the degree of satisfaction. c. gender is not a factor in diversifying pupil satisfaction. **Keywords:** class attendance, mastery experiences, normative success physical education

---

### **1. Introduction**

According to Babiniotis (2019), "satisfaction" is the feeling of intense happiness that one feels when fulfilling one of their needs or desire. Perhaps, this could be the reason for the great importance it has acquired in all fields where human activity is observed. Satisfaction is a factor that can certainly help to maximize participation in sports activities, and this is because this factor is associated with adaptive behavioral processes, so that one can feel positive emotions (Vallerand & Rousseau, 2001). The above is confirmed by research, the findings of which show that the greater the satisfaction that students have from the Physical Education course, the greater their participation in extracurricular activities (Sallis, Prochaska, Taylor, Hill, & Geraci, 1999; Wang, Liu, Chatzisarantis & Lim, 2010). Papaioannou, Bebetos, Theodorakis, Christodoulidis, and Kouli (2006) come to the same conclusions, according to which the high levels of satisfaction from the physical education course are the reason that many students participate in extracurricular sports activities, while according to Emmons and Diener (1986) they relate to the time one will spend on leisure activities.

Hagger, Chatzisarantis, and Harris (2006) argue that one's satisfaction is associated with an increase in intrinsic motivation and the time it devotes to an activity. At the same time, it relates to his commitment to the group, in which he is involved and his intentions to remain in it. Satisfaction justifies the emergence of new behavior, because it leads to positive emotions (Granero - Gallegos, Baena - Extremera, Perez-Quero, Ortiz - Camacho, & Bracho-Amador, 2012; Rothman et al., 2004) and its continuation for a long time (McAuley, & Morris, 2007).

Physical education is the ideal environment to promote physical activity and healthy lifestyles (Cale, 2000; McKenzie, 2007). Satisfaction is an important factor in assessing the very quality of teaching but also affects habits and behaviors in the long run (Beggs, & Elkins, 2010; Hagger, & Chatzisarantis, 2007).

Thus, the purpose of this work was to explore the receiving satisfaction of elementary school students from their participation in the physical education course and more specifically during the teaching of basketball techniques through three different methods. In addition, gender was examined as a factor in differentiating satisfaction.

## 2. Method

### 2.1. Participants

The study included 387 students attending the 5<sup>th</sup> and 6<sup>th</sup> grade of 12 elementary schools from all over Greece. The demographic characteristics of the sample are shown in Table 1.

**Table 1.** By gender and class breakdown of the sample

Gender	Class attendance		
	5 <sup>th</sup>	6 <sup>th</sup>	Total
Boys	101	109	210
Girls	78	99	117
Total	179	208	387

The sample, randomly selected, was assigned to three groups. The first group consisted of 117 male and female students, the second of 136 and the third of 134 male and female students. The sample comes from 12 primary schools from all over Greece.

### 2.2. Instrument

The “Physical Activity Class Satisfaction Questionnaire (PACSQ)” (Cunningham, 2007) was used to check students' satisfaction with their participation in the course. The questionnaire is composed of 45 questions/formalities which explore the nine factors of satisfaction. The nine factors are: a. “Mastery Experiences” (ME). It examines the degree of satisfaction with the opportunities/opportunities offered for the further development of mobility capabilities. Its value was calculated from the average of the answers to five different questions (e.g. I am satisfied with what I am learning and related to the better execution of this activity). b. “Cognitive Development” (CD). It examines the degree of satisfaction with the new knowledge acquired and related to the field of Physical Education. Its value was calculated from the average of the answers to five different questions (e.g. I am satisfied with the ability to practice new sports skills). c. “Teaching” (TCH). It examines the degree of satisfaction with the teaching process, the teaching methodology and the developing relationships between the Physical Education Teacher and the students. Its value was calculated from the average of the answers to five different questions (e.g. I am satisfied with the enthusiasm of the teacher during teaching). d. “Normative Success” (NS). It examines the degree of satisfaction with personal development in relation to the evolution of other classmates. Its value was calculated from the average of the answers to five different questions (e.g. I am satisfied that I can perform an activity better than others). e. “Interaction with Others” (IWO). It examines the degree of satisfaction with the opportunities offered for the development of social relations between students. Its value was calculated from the average of the answers to six different questions (e.g. I am satisfied with the opportunities given to me to have social contacts). f. “Fun and Enjoyment” (FE). It examines the degree of satisfaction with whether the course was a place of joy and fun and in the lessons, there was a pleasant and fun atmosphere. Its value was calculated from the average of the answers to four different questions (e.g. I am satisfied with the general feeling of pleasure prevailing during the course). g. “Improvement of Health & Fitness” (IHF). It examines the degree of satisfaction with whether the courses have contributed to the improvement of the participant's level of health and fitness. Its value was calculated from the average of the answers to five different questions (e.g. I am satisfied by the contribution of the course to improving my health as a whole”). h. “Diversory Experiences” (DE). It examines the degree of satisfaction and whether the lessons have contributed to the improvement of the participant's psychological condition by giving them stimulation and energy. Its value was calculated from the average of the answers to six different questions (e.g. I am satisfied with how excited I feel during the course). i. “Relaxation” (REL). It examines the degree of satisfaction with whether the lessons have contributed to the creation of a climate of relaxation and calm. Its value was calculated from the average of the answers to four different questions (e.g. I am satisfied with the way I relax during the course”).

The researchers also, in their effort to assess the satisfaction of the physical education participant as a whole, they proceeded to create a tenth factor, that of total satisfaction, consisting of all 45 formulations of the questionnaire. The factor in both the initial measurement and after the end of the implementation of the program showed exceptionally good internal consistency since Cronbach's  $\alpha$  was found to be .91 and .90 respectively.

The questionnaire showed exceptionally good internal consistency since Cronbach's  $\alpha$  was found to be: ME .91, CD .93, TCH .90, NS .93, IWO .94, FE .92, IHF .95, DE .93, and REL .85 (Cunningham, 2007). The answers were given on a 5-stage Likert scale from 1 (not at all satisfied) to 5 (completely satisfied).

### 2.3 Intervention program

The duration of the intervention program was eight weeks with one course per week (45 min). In other words, a total of eight courses were held for each group. The material taught was the same for all teams in the same

order and included the basic positions, the chest pass and the poppy pass, the shot in stop and jump shoot, and the two-stroke pace.

Three different teaching methods were used to carry out the courses, one for each group. In the first group, the teaching of objects was carried out with the group collaborative method of teaching in combination with the dominant intelligence of each student. The students in the team were grouped based on the type of intelligence that distinguished them. This classification was made through the completion of the Greek edition (Masadis et al., 2020) of the questionnaire "Multiple Intelligences Profiling Questionnaire VII (MIPQ VII)" (Tirri & Nokelainen, 2011). For example, for the learning of basketball shoots, students were divided into homogeneous groups based on their initial classification into some type of intelligence. Each group uses the group collaborative method in combination with the interdisciplinary teaching model. At the end of the course each team presented the key points and performed the skill. More specifically, the team with linguistic intelligence followed written instructions for the satisfactory performance of the exercise, whereas the team with mathematical intelligence used angles, shapes, trajectory and levers for the correct execution of the shot. The team with kinesthetic intelligence watched a classmate or video perform the skill and tried to "copy" the movement. The spatial intelligence team used the group as models to represent the right key positions of the shoot. The team with intrapersonal intelligence tracked the movement and performed mental execution practice. Finally, the group with musical intelligence used metronome and a favorite rhythm of children to link the rhythm to the shoot. Intrapersonal intelligence was used in such a way as to include a student with a dominant type of intelligence in the above groups. The naturalistic intelligence, although evaluated during the initial measurement, was not used due to the exceptional character of the school environment in which the lessons took place.

For the second experimental group during the course, student-centric teaching styles were applied with teacher-centered methods. For example, for each subject to be taught, it is stated that in order to learn the shot in basketball, guided discovery (student-centric teaching style) was used in the beginning, so that students were actively involved in the learning process and then the style of non-exclusion (teacher-centric teaching style) was applied, so that everyone at the same time, each at the level of their abilities, was applied.

The teaching methods applied for the third experimental group and for all teaching subjects were the teaching approaches proposed by the curriculum of Physical Education and developed in the teacher's book of the 5<sup>th</sup> and 6<sup>th</sup> grades. These approaches are standard practice in the teaching of teaching subjects.

#### 2.4. Measurement process

The ethics committee of the Democritus University of Thrace and the Ministry of National Education and Religious Affairs provided permission to carry out the investigation. Parents were also asked for permission to participate in the survey after explaining the objectives and purpose of it and assuring them that children could leave the survey at any time they would like. Finally, they were assured of the anonymity of the completion of the questionnaires and that the results of the research would be used exclusively for scientific purposes.

#### 2.5. Statistical analysis

For the statistical analysis of the data, descriptive statistics data were used, two-way Univariate Analysis of Variance and reliability analysis (Cronbach's  $\alpha$ ) was carried out.

### 3. Results

To check whether there are statistically significant differences between the three groups in the initial measurement, nine one-way Anova analyses was performed. The results show that there are no statistically significant differences for any of the nine factors (table 2).

**Table 2.** M & SD for initial measurement

	Total		1 <sup>st</sup> group		2 <sup>nd</sup> group		3 <sup>rd</sup> group		f	p
	MSD		MSD		M	SD	M	SD		
CD	2.94	.51	2.93	.36	2.94	.38	2.96	.70	.08	.926
IWO	3.06	.61	3.03	.55	3.04	.30	3.12	.85	.79	.454
DE	2.95	.48	2.99	.38	2.94	.35	2.93	.65	.71	.492
IHF	2.92	.61	2.96	.45	2.91	.36	2.90	.88	.30	.741
NS	3.10	.45	3.08	.28	3.07	.18	3.14	.70	.90	.411
FE	2.58	.50	3.00	.47	2.59	.35	2.55	.65	.32	.725
ME	2.56	.66	2.58	.42	2.62	.37	2.48	.98	1.8	.170
TCH	1.98	.47	2.06	.36	1.95	.32	1.93	.65	2.4	.092
REL	2.41	.44	2.43	.32	2.45	.33	2.36	.60	.28	.243

The factors that gather the most preferences of students are “CD”, “IWO” “DE” and “IHF”. In contrast, the lower preferences of pupils are concentrated by the “FE”, “ME”, “TCH” and “REL” (table 3).

**Table 3.** M, SD & significance during the intervention program

	Total		1 <sup>st</sup> group		2 <sup>nd</sup> group		3 <sup>rd</sup> group		F	p
	M	SD	M	SD	M	SD	M	SD		
CD	3.71	.82	4.23	.53	4.00	.56	2.96	.71	159.6	.001
IWO	3.66	.91	3.83	1.0	4.05	.56	3.66	.91	47.9	.001
DE	3.65	.83	4.06	.72	4.00	.58	2.94	.66	122.7	.001
IHF	3.63	.92	4.10	.70	3.93	.63	2.90	.89	96.8	.001
NS	3.61	.72	3.92	.54	3.81	.62	3.14	.70	59.6	.001
FE	3.58	1.02	4.09	.81	4.14	.64	2.57	.67	211.5	.001
ME	3.57	1.11	4.25	.62	4.05	.64	2.48	.99	202.4	.001
TCH	3.47	1.27	4.38	.62	4.20	.57	1.93	.65	647.1	.001
REL	3.45	1.07	3.96	.80	4.07	.73	2.37	.60	236.5	.001

To check whether there were statistically significant differences on teaching method One-way Anova analysis was performed. The results indicated that statistically significant differences for all factors. More specifically, The Bonferroni multiple comparison test showed that there were statistically significant differences among:

1. “Cognitive development”:  $F_{(1,384)} = 159.6$  &  $p < .001$ . The students of the first experimental groups (types of multiple intelligence in combination with the group collaborative method of teaching) experience the factor "Cognitive development" to a greater extent than their peers of the second (combination of student and teacher-centered teaching methods) and a third experimental group (teacher-centric teaching methods). In addition, the students of the second experimental group (combination of student and teacher-centric teaching methods) experience the factor to a greater extent than their peers in the third experimental group (Table 3).

2. “Interactions with others”:  $F_{(1,384)} = 47.9$  &  $p < .001$ . The students of the third experimental group (teaching methods) experience to a lesser extent the factor "Interactions with others" than their peers of the first experimental (types of multiple intelligence in combination with the group collaborative method of teaching) and the second experimental group (combination of student and forest-centric teaching methods) groups (Table 3).

3. “Diversionary experiences”:  $F_{(1,384)} = 122.7$  &  $p < .001$ . The students of the third experimental group (teaching methods) experience to a lesser extent the factor "Diversionary experiences" than their peers of the first experimental (types of multiple intelligence in combination with the group collaborative method of teaching) and the second experimental group (combination of student and forest-centric teaching methods) groups (Table 3).

4. “Improvement of health”:  $F_{(1,384)} = 96.8$  &  $p < .001$ . The students of the third experimental group (teaching methods) experience to a lesser extent the factor "Improvement of health" than their peers of the first experimental (types of multiple intelligence in combination with the group collaborative method of teaching) and the second experimental group (combination of student and teacher-centered teaching methods) groups (Table 3).

5. “Normative success”:  $F_{(1,384)} = 59.6$  &  $p < .001$ . The students of the third experimental group (teaching methods) experience to a lesser extent the factor "Fun" than their peers of the first experimental (types of multiple intelligence in combination with the group collaborative method of teaching) and the second experimental group (combination of student and teacher-centric teaching methods) groups (Table 3).

6. “Fun”:  $F_{(1,384)} = 211.5$  &  $p < .001$ . The students of the third experimental group (teaching methods) experience to a lesser extent the factor "Fun" than their peers of the first experimental (types of multiple intelligence in combination with the group collaborative method of teaching) and the second experimental group (combination of student and teacher-centric teaching methods) groups (Table 3).

7. “Mastery experience”:  $F_{(1,384)} = 202.4$  &  $p < .001$ . The students of the third experimental group (teaching methods) experience to a lesser extent the "Mastery experience" factor than their peers of the first

experimental (types of multiple intelligence in combination with the group collaborative teaching method) and the second experimental group (combination of student and teacher-centered teaching methods) groups (Table 3).

8. "Teaching":  $f_{(1,384)} = 647.1$  &  $p < .001$ . The students of the first experimental groups (types of multiple intelligence in combination with the group collaborative method of teaching) experience the factor "Teaching" to a greater extent than their peers of the second (combination of student and teacher-centered teaching methods) and a third experimental group (teacher-centric teaching methods). In addition, the students of the second experimental group (combination of student and teacher-centric teaching methods) experience the factor to a greater extent than their peers in the third experimental group (Table 3).

9. "Relaxation":  $F_{(1,384)} = 236.5$  &  $p < .001$ . The students of the third experimental group (teaching methods) experience to a lesser extent the "Mastery experience" factor than their peers of the first experimental (types of multiple intelligence in combination with the group collaborative teaching method) and the second experimental group (combination of student and teacher-centered teaching methods) groups (Table 3).

As for gender as a factor of differentiation of satisfaction, it seems that there were statistically significant differences only for the Interaction with Others factor ( $f_{(2,384)} = 6.61$ ,  $p < .05$  &  $n^2 = .34$ ). More specifically, the Sidak multi-comparison test shows that the girls in the first experimental group experience the interaction with others factor than boys in the same group (Table 4).

**Table 4.** Interaction team and gender

Factors	Team	Boys M	SD	Girls M	SD	Interaction	Significance
CD	1 <sup>st</sup>	4.28	.71	4.24	.56	$f_{(2,384)} = .156$	$p = .86$
	2 <sup>nd</sup>	4.03	.58	3.10	.71		
	3 <sup>rd</sup>	2.46	.98	2.51	.99		
IWOs	1 <sup>st</sup>	3.44	1.10	4.10	.83	$f_{(2,384)} = 6.61$	$p < .05$ $n^2 = .34$
	2 <sup>nd</sup>	4.02	.57	4.10	.54		
	3 <sup>rd</sup>	3.14	.82	3.10	.90		
DE	1 <sup>st</sup>	3.95	.81	4.14	.65	$f_{(2,384)} = .464$	$p = .629$
	2 <sup>nd</sup>	3.98	.61	4.03	.53		
	3 <sup>rd</sup>	2.86	.67	3.04	.64		
IHF	1 <sup>st</sup>	3.97	.76	4.19	.63	$f_{(2,384)} = .383$	$p = .682$
	2 <sup>nd</sup>	3.89	.63	4.00	.63		
	3 <sup>rd</sup>	2.88	.93	2.94	.89		
NS	1 <sup>st</sup>	3.86	.63	3.98	.47	$f_{(2,384)} = .165$	$p = .85$
	2 <sup>nd</sup>	3.77	.58	3.87	.68		
	3 <sup>rd</sup>	3.06	.72	3.25	.65		
FE	1 <sup>st</sup>	4.02	.92	4.14	.72	$f_{(2,384)} = .669$	$p = .51$
	2 <sup>nd</sup>	4.05	.68	4.28	.56		
	3 <sup>rd</sup>	2.56	.67	2.58	.67		
ME	1 <sup>st</sup>	4.28	.71	4.24	.56	$f_{(2,384)} = .156$	$p = .86$
	2 <sup>nd</sup>	4.03	.58	4.10	.72		
	3 <sup>rd</sup>	2.46	.98	2.51	1.03		
TCH	1 <sup>st</sup>	4.36	.68	4.40	.58	$f_{(2,384)} = .907$	$p = .40$
	2 <sup>nd</sup>	4.19	.54	4.22	.60		
	3 <sup>rd</sup>	1.85	.62	2.06	.68		
REL	1 <sup>st</sup>	3.74	.88	4.11	.72	$f_{(2,384)} = .589$	$p = .56$
	2 <sup>nd</sup>	3.99	.71	4.20	.74		
	3 <sup>rd</sup>	2.29	.58	2.47	.62		
<b>Satisfaction total</b>	1 <sup>st</sup>	3.98	.56	4.17	.37	$f_{(2,384)} = .358$	$p = .699$

#### 4. Discussion-Conclusions

The purpose of this work was to explore the receiving satisfaction of elementary school students from their participation in the physical education course and more specifically during the teaching of basketball techniques through three different methods. In addition, gender was examined as a factor in differentiating

satisfaction. the teaching methods used were the group-cooperative teaching method combined with the types of multiple intelligence, student methods (guided ingenuity) so that students are actively involved in the learning process in combination with teacher interventions (the style of non-exclusion) and the teaching approaches proposed by the teacher's book and the curriculum of the physical education course for the Elementary School E and F classes, which are the usual practice of its teachers physical education. The technical skills taught during the course were the basic positions, the chest pass and the poppy pass, the stop shot, and the jump shot, and the two-stroke pace. Finally, the researchers made an innovation in relation to the questionnaire used to assess satisfaction. They decided to propose the creation of a tenth factor, that of total satisfaction, in their effort to have the overall satisfaction that students receive and not only as presented individually to each factor.

From the results, Cronbach's  $\alpha$ , it appears that the suggestion of creating the extra factor was successful considering the values of the index in both measurements. Of course, the investigation of the creation of this factor needs additional research to consolidate its presence.

As far as the satisfaction of the sample is concerned, we would not say that this is satisfactory. Especially the score of overall satisfaction we can claim to be extremely low. The factors that gather the most preferences of the sample are "Cognitive development", "Interactions with others" and "Diversiory experiences". In this case the paradox is that while students seem to be satisfied with their cognitive development and diversiory experiences enjoyed during the course, they are not at all happy with the teaching suggestions of physical education teachers.

However, taking into account the results separately for each group, we find that the score in the sample as a whole is formed by the result of the third experimental group, i.e. the group that followed the teaching methods usually followed by physical education teachers. Practices which, as the results of the survey show, do not excite students and do not motivate them to continue to participate in sports activities. On the contrary, the teaching approaches applied to the first and second experimental groups were recognized by the students, they were recognized by the students that students like them because they are pleasant and offer them unprecedented experiences and are recognized as effective since they contribute positively to both the learning process and the development of knowledge.

Perhaps, the result that is striking is the score gathered by the "Interactions with others" factor, particularly in the didactic approach that suggests the use of collaborative learning in combination with the types of multiple intelligence. In this case one would expect higher scores since the students work in groups, so they are forced to come into contact by collaborating in pursuit of the positive result. The result may be because students were not accustomed to similar learning processes and were surprised. In fact, aiming at more effective learning did not pay much attention to factors such as interpersonal relationships, which is confirmed and not by the particularly high score of the "Relaxation" factor. Maybe it's because of the low score he collected from the boys as we'll see next. As far as the gender of the sample is concerned, this is not a factor of differentiation other than the "Interactions with others" factor and only for the group that was taught skills with the grouping method where girls are more satisfied than men. The results of the survey and the follow-up discussion extract the following results: a. the teaching method is a factor in the differentiation of the degree of satisfaction; b. student-centric teaching methods contribute to maximizing the degree of satisfaction. c. gender is not a factor in diversifying pupil satisfaction.

## 5. References

- [1]. Babiniotis, G. (Ed.). (2019). *Dictionary of the New Greek language* (5<sup>th</sup> ed.). Athens: Kentro lexicologias.
- [2]. Beggs, B. A., & Elkins, D. J. (2010). The influence of leisure motivation on leisure satisfaction. *LARNet: The Cyber Journal of Applied Leisure and Recreation Research*. Retrieved from <http://larnet.org/2010-02.html>
- [3]. Cale, L. (2000). Physical activity promotion in secondary schools. *European Physical Education Review*, 6(1):71-90.
- [4]. Cunningham, G. B. (2007). Development of the physical activity class satisfaction questionnaire (PACSQ). *Measurement in Physical Education and Exercise Science*, 11(3):161-176.
- [5]. Emmons, R. A., & Diener, E. (1986). A goal-affect analysis of everyday situational choices. *Journal of Research in Personality*, 20(3):309-326.
- [6]. Granero-Gallegos, A., Baena-Extremera, A., Perez-Quero, F. J., Ortiz-Camacho, M. M., & Bracho-Amador, C. (2012). Analysis of motivational profiles of satisfaction and importance of physical education in high school adolescents. *Journal of Sports Science & Medicine*, 11(4):614-623.
- [7]. Hagger, M. S., & Chatzisarantis, N. L. (2007). Advances in self-determination theory research in sport and exercise. *Psychology of Sport and Exercise*, 8(5):597-873.

- [8]. Hagger, M. S., Chatzisarantis, N. L., & Harris, J. (2006). From psychological need satisfaction to intentional behavior: Testing a motivational sequence in two behavioral contexts. *Personality and Social Psychology Bulletin*, 32(2):131-148.
- [9]. McAuley, E., & Morris, K. S. (2007). Advances in physical activity and mental health: Quality of life. *American Journal of Lifestyle Medicine*, 1(5):389-396. doi.org/10.1177/1559827607303243.
- [10]. McKenzie, T.L. (2007). The Preparation of Physical Educators: A Public Health Perspective. *Quest*, 59:346-357.
- [11]. Masadis, G., Filippou, F., Kouli, O., Gargalianos, D., Rokka, S., Bebetos, E., et al. (2020). The “Motivational climate in physical education scale” in Greek educational context psychometric properties and gender effects. *International Electronic Journal of Elementary Education*, 12(4):321-324.
- [12]. Papaioannou, A., Bebetos, E., Theodorakis, Y., Christodoulidis, T., & Kouli, O. (2006). Causal relationships of sport and exercise involvement with goal orientations, perceived competence, and intrinsic motivation in physical education: A longitudinal study. *Journal of Sports Sciences*, 24(4):367-382.
- [13]. Rothman, R. L., De Walt, D. A., Malone, R., Bryant, B., Shintani, A., Crigler, B., et al. (2004). Influence of patient literacy on the effectiveness of a primary care-based diabetes Interventions for Low Health Literacy 53 disease management program. *Journal of the American Medical Association*, 292(14):1711–1716.
- [14]. Sallis, J. F., Prochaska, J. J., Taylor, W. C., Hill, J. O., & Geraci, J. C. (1999). Correlates of physical activity in a national sample of girls and boys in grades 4 through 12. *Health Psychology*, 18(4):410-415.
- [15]. Tirri, K., & Nokelainen, P. (2011). *Measuring multiple intelligences and moral sensitivities in education*. Rotterdam: Sense Publishers.
- [16]. Tirri, K., & Nokelainen, P. (2012). *Measuring multiple intelligences and moral sensitivities in education* Springer Science & Business Media.
- [17]. Vallerand, R. J., & Rousseau, F. L. (2001). Intrinsic and extrinsic motivation in sport and exercise: A review using the hierarchical model of intrinsic and extrinsic motivation. In R. N. Singer, H. A. Hausenblas, & C. M. Janelle (Eds.), *Handbook of sport psychology* (2nd ed., pp. 389–416). New York: Wiley
- [18]. Wang, J. C., Liu, W. C., Chatzisarantis, N., & Lim, C. B. S. (2010). From intrinsic motivation to passion in sport and exercise: A self-determination theory framework. *Youth in Physical Education and Sport*:219-224.