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**Achievement Goal, Behavioral Regulation of Motivation, Well Being and Physical
Activity among Malaysian Pupils**

by

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The present thesis is submitted as Partial Fulfillment of the Requirements for the
Degree of European Master of Sport and Exercise Psychology at The University of Thessaly
in July 2019

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Trikala, Greece [2019]

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The author of the thesis had a remarkable amount of help from Babis Krommidas, and Professor Athanasios Papaioannou.

Aruna Santhappan

Acknowledgment

None of us got to where we are alone. Whether the assistance we received was obvious or subtle, acknowledging someone's help is a big part of understanding the importance of saying thank you.

- Harvey Mackay

I personally express my gratitude to each and every one who had assisted me to successfully completing my thesis project. It was an interesting journey and without them, it would not be possible. Thank you to my parents Santhappan Karuppanan and Saretha Balan for believing in my dreams and to my family Samala Santhappan, Bala Danis Santhappan and BalaMurali Ramusamy for the immense support.

To my EMSEP family, thank you for all the aid and support given and also for making me feel home and welcomed. Especially a heartfelt thank you to Babis Krommidas and Savina Sereli who had been helping me throughout the completion of this thesis. This project would not be feasible without the supervision and guidance of Professor Athanasios Papaioannou, thank you, professor. Finally to each and every one whom involved in the IMPACT PE project thank you for accepting me being part of the project.

Achievement Goal, Behavioral Regulation of Motivation, Well Being and Physical Activity among Malaysian Pupils

Abstract

The aim of this study was to examine the relationship between achievement goal, behavioural regulations of motivation (intrinsic, extrinsic, amotivation), well-being and physical activity (PA) among Malaysian pupils. The sample consisted of 93 boys and 204 girls ($N=301$), aged 13 to 17 years old ($M_{age} = 15.38 \pm 1.33$ years old) from six Malaysian secondary school that voluntarily participated in the present study. The cross-sectional data were collected using an online questionnaire. Results revealed that task orientation and intrinsic motivation were positively related with the amount of PA (hours/week), subjective vitality and intention to help others to be physically active. Moreover, task orientation was positively related with the frequency of PA (days/week). Standard regression analysis showed that intrinsic motivation and task orientation significantly predicting the frequency of PA (days/week) and subjective vitality. Additionally, two way ANOVA revealed significant differences on pupils' amount of PA (hours/week) and subjective vitality due to gender effect. More specifically, boys engaged more hours per week in PA and reported higher scores on subjective vitality compared to girls. Significant differences were also emerged on intention to help others to be PA due to age effect. No other significant differences were emerged. In conclusion, these results may provide significant insights for the Malaysian pupils' to engage in regular PA and to help others be more physically active.

Keywords: pupils, motivation, achievement goals, physical activity, well-being, Malaysia

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Introduction

Physically active is compulsory among today's worldly requirement. The fast developing world had lead many developed country in contributing a lot physical inactivity people. The people had acknowledge the positive benefit of physical activity yet, day by day the level of people inactivity are increasing rapidly worldwide. According to Biddle, Pearson, Ross and Braitwaite, (2010), the root problem of the sedentary lifestyle can be identified from childhood and it can be adapted into their adulthood behaviour. World Health Organization (2010), said children and adolescent require a moderate to vigorous intensity physical activity of about 60 minutes per day. Worldwide, many pupils are not meeting the guidelines Sallis, Prochaska and Taylor, (2000), and Malaysia are among one of them with alarming increasing of obesity and diabetes within the children and adolescent according to study by World Health Organization (2007). The previous study had shown that school and physical education setting are able to encourage the pupils to exercise or playing sports to adapt the physical active lifestyle and thus to promote to future physical activity habit (Fox, 1992; Fox, Coper & Mckenna, 2004; Trost, 2004).

However, research findings have shown significance decrease in pupil's participation from junior high school and above in the physical education classes (e.g., Digelidis & Papaioannou, 1999; Pete et al., 2006; Strong et al., 2005). The important objectives of school physical education are to provide pupils with motivating and enjoyment experience. According to (Morgan, Beighle & Pangrazi, 2007; Chatzisarantis & Hagger, 2009), a positive experience in the physical activity education could lead or influence children and adolescents to facilitate learning and lifelong participation in physical activity. According to (Barkoukis et al., 2010, Hagger et al., 2003, Standage et al., 2012), PE had an impact on pupil's attitudes, motivation and intention to be physically active out-of schools. The findings from previous study of (Thomas & Baron, 2006; Cid et al., 2019) confirmed that adolescent with higher achievement

motivation are correlated with higher participation on PE. In addition, Papaioannou, Bebetos, Theodorakis, Christodoulidis and Kouli, (2006) mentioned that achievement motivation is related to the amount out-of school physical activity. Therefore, is important to understand the motivational, cognitive and the effective processes of pupils in PE and in the last three decade the most studies motivational theory framework in PE and physical activity is the Achievement goal theory.

Achievement Goal Theory (AGT)

The achievement Goal theory is developed by Nicholls, (1984) to understand the student's adaptive and maladaptive responses to achievement challenges. The theory focused on investigating people's motivation in a physical setting and to understand the ability of each individual to sustain optimum motivation Nicholls, (1979). The importance of the achievement goal orientation in physical education is the achievement goal theorist is more concern about understanding the "why", a student would like to participate in physical education rather than "what" the individual trying to achieve, Urdan and Maehr, (1995). Achievement goal theorist employ a social-cognitive perspective to understand how individual cognitively process and develop their view about the nature of achievement (Dweck, 1988; Nicholls, 1989; Ames, 1992b). In the achievement setting, perceived competence plays a fundamental role in the motivation and according to Horn, (2004) perceived competence refers to an individual own capability to interact effectively in specific achievement domain, thus lead to either high or low perceived competence. Perception of competence is a central construct within achievement goal theory, Nicholls theorized that the two conceptions of the ability of achievement goal theory are task orientation and ego orientation Nicholls (1984). Task orientation individual is motivated to perform because they want to demonstrate mastery of the task, task understanding, improvement in the skills learn and self-referenced perception of own performance and high perceived competence. Ego Orientation individual is motivated to

perform better or beat other's performance and normative or low perceived competence such as showing off, Nicholls (1984).

AGT in Physical Education and Sport setting

In the context of physical education, empirical evidence were found to support the task orientation is associated with more positive achievement behaviour and emotion in PE compared to ego orientation such as high effort, persistence and enjoyment and low levels of boredom (Spray, Biddle & Fox, (1999); Thomas & Barron, 2006; Weigand & Burton, 2002). Apart from the achievement goal orientation, the environmental factor could influence the behaviour and this factor knows as motivation climate. The mastery motivational climate is relation to self-referenced effort and improvement, thus promoting task-orientation behaviour and can positively influence intrinsic motivation. A higher level of enjoyment, perceptions of competence and a positive attitude towards PE (Morgan et. al, 2005a, 2006; Ommundsen and Kavlo, 2007). On the opposite, when the motivational climate is prevalent, and ego-involvement will be used and the pupils reported a higher level of boredom, lack of enjoyment, a belief that ability, not effort and lack of interest in PE, Morgan, Kingston and Sproule, (2005a). Furthermore, Viira and Raudsepp, (2000) finding showed that motivational factors become an important determinants for the adolescent to be physically active with the moderate to vigorous intensity.

In the sport setting, achievement goal theory had vast empirical evidence to shows that task orientation and ego orientation have an impact on the athlete motivation (Biddle, Wang, Kavussanu & Spray, 2003; Ntoumanis & Biddle, 1999). According to (Duda, Fox, Biddle & Armstrong, 1992; Duda, 1994) goal orientation become the essential factor for predicting individual participation in sport and their sport success beliefs and sport emotion which positively associated with task orientation. In recent research showed that, highly intrinsically

achievement-oriented players were significantly more likely to continue to next phase in their sport and adaptive positive performance, Zuber, Zibung and Conzelmann, (2015).

AGT Questionnaires Correlates Studies

The correlation study of Achievement goal theory using valid and reliable measurement Task and Ego Orientation in Sport Questionnaire (TEOSQ) (Duda, 1989; Duda & Nicholls, 1992) in physical education and sport are widely found in the studies for the last 30 years. A systematic review of correlates of achievement goal orientation in physical activity, Biddle, Wang, Kavussanu and Spray, (2003) with showing 110 studies with 80.6% using TEOSQ conclude that task orientation associated with effort causes success, development of self-esteem, adaptive achievement strategies, positive relation with perceived of competence and motives for participation while ego orientation associated ability causes success, gaining social status and motives individual to access for recognition and competitive nature. A meta-analysis study of achievement goal orientation correlates in competitive sport with TEOSQ and Perception of Success Questionnaire (POSQ) showed that 772 studies were analyses with 469 the study had been conducted with TEOSQ questionnaire with results showing the task goal orientation was significantly related to adaptive success behavior, positive emotions, intrinsic motivation, mastery/task climate and perceived competence. While ego goal orientation was related with maladaptive success behaviour, negative emotion, and performance/ego climate, Lochboun, Zazo, Cetinkalp, Wright, Graham and Kontinen, (2016).

Behavioural Regulation of Motivation

Self-determination theory (Desi & Ryan, 1985, 1991; Ryan & Deci, 2000a, 2002) examines the behaviour regulations of human that can be categorized into three main categories, intrinsic motivation, extrinsic motivation and amotivation. Intrinsically motivated behaviour is performed out of interest, enjoyment, willingness to learning new skills and

function without the aid of external rewards with or without constraints Deci and Ryan, (1985) (e.g., an intrinsically motivated student would participate in PE because of feelings of satisfaction and pleasure that the students embraced from the PE curriculum. Extrinsic motivation is when the individuals perform an activity because they value its associated outcomes (e.g., public praise, extrinsic rewards) more than the activity itself. Amotivation is happening when individuals lack a sense of intention and willingness to engage in a particular behaviour.

Based on the previous finding, it often results from feelings incomplete and uncontrollability and frequently linked to decision to drop out of PE, Ntoumanis, Pensgaard, Martin and Pipe (2004). Intrinsic motivation leads to the most positive consequences, Standage, Duda, Ntoumanis, (2005) found that intrinsic motivation was a positive predictor of attempting a challenging task, concentration and positive effects in PE, while negative feelings of unhappiness. Similarly, Ntoumanis, (2001) found that intrinsic motivation was positively related to effort, future intention to exercise and negatively related to boredom.

AGT and Behavioural Regulation of Motivation

Achievement goal theory and SDT are the two most studied variables in the PE and sport context. Based on the literature evidence it is said task orientation facilitates autonomy behaviour where it's derived of intrinsic motivation where the individual demonstrated effort to master the skills, fostering challenge seeking and task persistence. (Ryan, 1982; Brunel, 1999). On the other hand the ego orientation associated with the individual anticipating outcomes rather than the learning and mastering the skills, Nicholls, 1989. The argument was supported by a study conducted by Brunel (1999) in 160 French undergraduate students enrolled in badminton course said that ego orientation is associated positively with extrinsic motivation (external regulation and introjected regulation where the controlling nature of the

behaviour involved thus facilitating the social approval and rewards, demonstrating their ability to others.

Despite of the many studies in these two theories in PE and sport, however only a few studies had address both theories in the same papers to identifying the importance of these two key theories in understanding motivation behaviour. Parallel with these, Spray, Wang, Biddle and Chatzisarantis, (2006) conducted an experimental study with 147 participants, 11-16 years old involved in goal putting task. The results revealed that the autonomous enhance the intrinsic motivation even for both task and ego orientation and autonomous and task goal foster better performance in goal putting. In the physical activity, Georgiadis, Biddle and Chatzisarantis, (2001) combine both theories to examine the physical self-worth in Greek exerciser of 350 with a mean age of 30.8 years, it shows task orientation and physical self-worth was mediated by intrinsic motivation while when the control behaviour (extrinsic motivation) weakened the relationship the mediating influences. Therefore, extending the literature between these two theories in identifying motivational factor for individual motivation behaviour to be physically active and thus participating in sport are needed.

Well Being

The optimal experience of well-being are deprived of Self-Determination Theory, Deci and Ryan, (2001). Well-being is defined as an optimal functioning and integrated sense of self. One the approach focuses on hedonic or subjective well-being and associated it with happiness by Kahneman, Diener and Schwarz, (1999). It is argued that children participation in physical activity or sport is important for psychological well-being (Dworkin et al., 2003, Larson & Verma, 1999; Ommundsen et. a., 2005, Smoll & Smith, 2002; Steptoe & Butler, 1996). The subjective vitality is a positive feeling or feeling aliveness and energy that is associated to reflect well-being Ryan & Fredrick, (1997). Recent study by Ilker, (2014) show that the intrinsic motivation is positively predicted subjective vitality in the physical

educational context of PE among Turkish pupils. Reinboth and Duda, (2004) conducted a study grounded with achievement goal theory (perceived motivational climate) and psychological and physical well-being. The participation of 265 adolescent soccer and cricket athletes shows that well-being (physical exhaustion, self-esteem and physical symptoms) of the athletes was lowest when low perceived ability athletes were placed in the environment of high ego-involving. On the opposite the high task involving environment reported to facilitates high well-being self-reported results despite the perceived competence of the athletes. Thus, understanding the achievement goal theory and self-determination in the sport and PE setting will help with individual physical and mental health and well-being.

Intention to help other to be physically active

The planned behaviour theory by Ajzen (1985); mentioned that when one able to control the behaviour thus lead to intention. It is said that intention is primary or most strong behaviour towards motivating individual to engage in the behaviour. There are three important influence individual intention; attitude towards behaviour (*favourable or unfavourable affective and cognitive orientations*), subjective norms (*perceived social pressure by significant others to engage or not engage in the behaviour*) and perceived behaviour control (*evaluation of personal capabilities to control the behaviour*) Fishbein and Ajzen, (2010). Favourable attitudes, subjective norms and high perceived behavioural control will foster a strong intentions to perform a behaviour Ajzen, (2004). The research finding shows, behavioural regulation positively predict be behaviour related variables, such as self-rated, exercise effort (Vanteenkitse, Simons, Soonens & Lens, 2004; Wilson et. al.,2006) and exercise intention Hagger, Chatziasarantis and Harris, (2006). There are no studies had investigate the relationship between behavioural regulation and intention to help other physically active, therefore this study will further investigate this domain.

Purpose of the study

The main purpose of the present study was to examine the relationship between the achievement goals (task, ego) and behavioural regulation of motivation (intrinsic, extrinsic, amotivation) with the subjective vitality, the intention to help other be physically active and self-report physical activity of Malaysian pupils. A second purpose of the present study was to examine possible gender and age difference on pupils' PA levels, intentions to help others be physically active and subjective vitality.

Main Hypotheses of the present study

Based on the above it was hypothesized that;

- a) Task orientation and intrinsic motivation will positively linked with self-report PA variables (days/week, hours/week), intention to help others be physically active and subjective vitality
- b) Ego orientation, extrinsic motivation and amotivation will negatively linked with self-report PA variables (days/week, PA hours/week), intention to help others be physically active and subjective vitality.
- c) There will be gender and age differences on students' PA levels, intentions to help others be physically active and subjective vitality.

Innovation of the present study

The sample population are rarely studied in this field and combination variables of the study are limited in these area of research. Mostly the sample are based on North America and Western Europe (Biddle, 1995) and minimum profound literature in main exercise and sport psychology from this part of the country (Southern East Asian). Therefore understanding and further investigation on participants from different country and cultural are initial for the adaption of cross cultural studies.

Methodology

Participants

The sample consisted of 301 students, aged 13 to 17 years old ($M_{\text{age}} = 15.38 \pm 1.33$ years old) from six secondary schools in Malaysia that voluntarily participated in the present study. Ninety three ($n=93$) were boys, 204 were girls, while four students did not report their gender.

Instruments

Achievement Goals: - To access task and ego orientation involvement, the Task and Ego Orientation in Sport Questionnaire (TEOSQ) by Duda and Nicholls, (1992) was used. This questionnaire consists of 13-items. Seven items are used to access the task orientation goal (e.g., “*I learn a new skill and make me practice more*”, “*I learn a new skills*” and six items are used to access the ego orientation goal (e.g., “*I can do better than my schoolmates*”, “*I score the most points/ goals etc.*”). Pupils answer are given in a 5-point Likert scale from 1 (“*Strongly Disagree*”) to 5 (“*Strongly Agree*”). Barkoukis, Zaharoadis, Anastasiadis, Tsorbatzoudis and Grouios (2004) has conducted a confirmatory factor analysis with TEOSQ and it is reported satisfactory fit with the Greek sample, Cronbach alpha values of .73 for ego orientation and .71 for task orientation.

Behavioral Regulation of Motivation: - To access the Intrinsic, Extrinsic and Amotivation of the pupils, the Behavioral Regulation in Exercise Questionnaire 2 (BREQ2) Markland and Tobin (2004). The questionnaire consists of 20 items. Intrinsic motivation was accessed with 4 items (e.g., “*I actively participate in PE...because I enjoy it*”); extrinsic motivation was accessed with 4 items (e.g., “*I actively participated in PE...because people push me to do it*”); and amotivation. Pupils answer are given in a 5-point Likert scale from 1 (“*Strongly Disagree*”) to 5 (“*Strongly Agree*”).

(*Subjective Vitality*:) – To access pupils well-being, the Subjective Vitality scale was used Ryan and Frederick, (1997). The items are (e.g., *“I felt full of vitality”, I felt I had a lot of energy*”). The answer are given in a 5-point Likert scale from 1 (*“Strongly Disagree”*) to 5 (*“Strongly Agree”*).

Physical Activity (Frequency& Amount: To access pupil’s physical activity level used three items. The physical activity frequency was examined with 2 items of Prochaska, Sallis and Long (2001) (e.g., *“Over the past 7 days, how many days were you physically active for a total of at least 60 minutes per day?”*) The answer are given in 7-point Likert scale from (0 days) to (7 days). Meanwhile for the hours of physical activity the instrument used is from Booth, Okely, Chey and Bauman, (2001) with 1 item (e.g., *“How many hours do you usually exercise in your free time, so much that you get out of breath or sweat”*). Pupils’ answers were given in a 6-point Likert scale from 6-point Likert scale from (None), (about half an hour per week), (about one hour per week), (about 2-3 hours per week), (about 4-6 hours per week) and (about 7 hours per week).

Procedure

The research was conducted in Malaysia secondary school where the age group of the pupils were from 13 to 17 years old. The research protocol was approved by the Bioethics Committee of the University of Thessaly. The approval from school principal was obtained and allowed the teacher to gather the pupils to participate in this study. The pupil were provided with the information of the study and were requested to answer the online questions anonymously. Beforehand, the parental consent form and the pupils consent were obtained. The duration of answering the questionnaire was about 30 to 45 minutes and took place in the school computer lab room. The researcher was present during the online measure.

Statistical analysis

All statistical analyses were conducted by using the PASW software version 21.0. Descriptive statistics (mean, standard deviation), reliability index (Cronbach's α) and correlation analysis of the frequency of PA (days/ week), quantity of PA (hours/ week), intention to help others be physically active, subjective vitality, intrinsic motivation, extrinsic motivation, amotivation, task and ego orientations were calculated. Separate standard regression analyses were conducted having as dependent variables the frequency and quantity of PA, the intention to help others be physically active, the subjective vitality and as independent variables the behavioral regulation of motivation variables (intrinsic, extrinsic, amotivation) and the achievement goals (task, ego). Additional hierarchical regression analyses were conducted with the same dependent variables the frequency and quantity of PA, the intention to help others be physically active, the subjective vitality and for the same independent variables the behavioral regulation of motivation variables (intrinsic, extrinsic, amotivation) and the achievement goals (task, ego) with adding additional variable from basic psychological needs (competence). Moreover, in order to test possible gender and age differences on students' PA levels, intentions to help others be physically active and subjective vitality, separate two way analyses of variance (Two-Way Anova) were used. Finally, the level of significance was set at $p < .05$.

Results

Descriptive statistics, reliability and correlation analyses

Means, standard deviations, reliabilities and correlation analyses of the examined variables are presented below in Table 1. In general, students had high scores in intention to help others be physically active, moderate scores in subjective vitality, intrinsic motivation and task orientation, and low scores in PA variables (frequency and quantity of PA), extrinsic

motivation, amotivation and ego orientation. Cronbach's α ranged from .76 to .89. Correlation analysis showed that quantity of PA (hours/ week) and subjective vitality was positively related with intention to help others be physically active, intrinsic motivation, task and ego orientation. Similarly, PA variables were positively related to subjective vitality. Self-report PA, intention to help others be active and vitality were not related with extrinsic motivation and amotivation.

Table 1. Means, standard deviations, Cronbach's α and correlation analysis of the examined variables

Variables	<i>M</i>	<i>SD</i>	<i>α</i>	1	2	3	4	5	6	7	8	9
1. Frequency of PA (days/ week)	2.68	1.77	.89	-								
2. Quantity of PA (hours/ week)	2.11	1.29	-	.48**	-							
3. Subjective vitality	3.43	.69	.80	.31**	.27**	-						
4. Intention to help others be active	4.73	1.30	.84	.29**	.37**	.46**	-					
5. Intrinsic motivation	3.89	.70	.85	.06	.23**	.45**	.46**	-				
6. Extrinsic motivation	2.52	.81	.77	.06	-.01	-.01	-.09	-.24**	-			
7. Amotivation	2.68	.77	.76	.06	-.00	.00	-.02	-.18**	.70**	-		
8. Task orientation	3.74	.67	.88	.23**	.28**	.57**	.46**	.67**	-.15**	-.09	-	
9. Ego orientation	2.90	.76	.81	.24**	.23**	.35**	.35**	.27**	.22**	.09	.49**	-

* $p < .05$, ** $p < .01$

Regression analyses

A standard regression analysis was used to predict frequency of PA (days/ week) from the behavioral regulation of motivation (intrinsic motivation, extrinsic motivation, amotivation) and the achievement goals (task, ego). The total variance explained by the model as a whole was 10% ($F_{5, 272} = 5.976, p < .001$). In the final model, intrinsic motivation ($\beta = -.163, t = -2.017, p < .001$), task ($\beta = .298, t = 3.371, p < .01$) and ego orientation ($\beta = .140, t = 1.978, p < .05$) were significant predictors of the frequency of PA (days/ week).

Similarly, a standard regression analysis was used to predict amount of PA hours/ week) from the behavioral regulation of motivation (intrinsic motivation, extrinsic motivation, amotivation) and the achievement goals (task, ego). The total variance explained by the model as a whole was 10% ($F_{5, 274} = 5.734, p < .001$). In the final model, only ego orientation ($\beta = .163, t = 2.303, p < .05$) was significant predictors of the quantity of PA (hours/ week).

Subsequently, a standard regression analysis was used to predict intention to help others be physically active from the behavioral regulation of motivation (intrinsic motivation, extrinsic motivation, amotivation) and the achievement goals (task, ego). The total variance explained by the model as a whole was 30% ($F_{5, 275} = 23.242, p < .001$). In the final model, only intrinsic motivation ($\beta = .303, t = 4.345, p < .001$) and ego orientation ($\beta = .227, t = 3.642, p < .001$) predicted significantly the intention to help others be physically active.

Finally, a standard regression analysis was used to predict subjective vitality from the behavioral regulation of motivation (intrinsic motivation, extrinsic motivation, amotivation) and the achievement goals (task, ego). The total variance explained by the model as a whole was 37% ($F_{5, 272} = 31.530, p < .001$). In the final model, only intrinsic motivation ($\beta = .160, t = 2.377, p < .05$) and task orientation ($\beta = .452, t = 6.100, p < .001$) predicted significantly the subjective vitality. All the standard regression analyses results are presented below in Table 2.

Table 2. Standard regression analyses of PA variables (frequency and quantity of PA), intention to be physically active and subjective vitality

Dependent variables	Independent variables	<i>R</i>	<i>R</i> ²	<i>F</i>	β	<i>t</i>	<i>P</i>
Frequency of PA		.32	.10	5.976**			
	Intrinsic motivation				-.163	-2.017	.045*
	Extrinsic motivation				-.013	-.149	.882
	Amotivation				.036	.438	.662
	Task orientation				.298	3.371	.001*
	Ego orientation				.140	1.978	.049*
Quantity of PA		.31	.10	5.734**			
	Intrinsic motivation				.109	1.375	.170
	Extrinsic motivation				-.020	-.231	.818
	Amotivation				.034	.417	.677
	Task orientation				.113	1.285	.200
	Ego orientation				.163	2.303	.022*

Intention to help others be active		.55	.30	23.242**		
	Intrinsic motivation			.303	4.245	.000**
	Extrinsic motivation			-.106	-1.387	.166
	Amotivation			.108	1.501	.135
	Task orientation			.143	1.861	.064
	Ego orientation			.227	3.642	.000**
Subjective vitality		.61	.37	31.530**		
	Intrinsic motivation			.160	2.377	.018*
	Extrinsic motivation			.034	.473	.636
	Amotivation			.032	.461	.645
	Task orientation			.452	6.100	.000**
	Ego orientation			.074	1.243	.215

* $p < .05$, ** $p < .001$

Hierarchical Regression analyses

Prior the standard regression analysis was used to predict frequency of PA (days/ week), quantity of PA (hours/week), intention to help others physically active and subjective vitality

from the behavioral regulation of motivation (intrinsic motivation, extrinsic motivation, amotivation) and the achievement goals (task, ego). However with positive significant of ego orientation for frequency (days/week), quantity of PA (hours/week) and intention to help others physically active. Therefore, a hierarchical regression was used with adding basic psychological needs (competence) to all the regression model for second stage.

The hierarchical analyses for predict frequency of PA (days/week) with adding basic psychological needs (competence). The final total variance explained by the model 2 as a whole was 14% ($F_{6, 271} = 7.563, p < .001$). In the final model 2, intrinsic motivation ($\beta = -.253, t = -3.072, p < .01$), task ($\beta = .246, t = 2.811, p < .01$) and competence ($\beta = .269, t = 3.750, p < .001$) were significant predictors of the frequency of PA (days/ week).

Predicting the amount of PA (hours/ week) with adding basic psychological needs (competence). The final total variance explained by the model 2 as a whole was 14% ($F_{6, 273} = 7.343, p < .001$). In the final model 2, only competence ($\beta = .268, t = 3.745, p < .001$) was significant predictors of the quantity of PA (hours/ week).

Finally for predicting intention to help other to be physically active with adding basic psychological needs (competence). The final total variance explained by the model 2 as a whole was 34% ($F_{6, 274} = 23.126, p < .001$). In the final model 2, intrinsic motivation ($\beta = -.215, t = 3.022, p < .01$) ego orientation ($\beta = .165, t = 2.643, p < .01$) and competence ($\beta = .252, t = 4.018, p < .001$) predicted significantly the intention to help others be physically active. All the hierarchical regression analyses results are presented below in Table 3.

Table 3. Hierarchical regression analyses of PA variables (frequency and quantity of PA), intention to be physically active and subjective vitality

Dependent	Independent	R	R²	F	β	t	P
variables	variables						

Step 1					
Frequency of PA		.32	.10	5.976**	
Intrinsic motivation				-.163	-2.017 .045*
Extrinsic motivation				-.013	-.149 .882
Amotivation				.036	.438 .662
Task orientation				.298	3.371 .001*
Ego orientation				.140	1.978 .049*
Step 2					
Frequency of PA		.38	.14	7.563**	
Intrinsic motivation				-.253	-3.072 .002*
Extrinsic motivation				-.030	-.352 .725
Amotivation				.025	.305 .760
Task orientation				.246	2.811 .005*
Ego Orientation				.075	1.051 .294
Competence				.269	3.750 .000**

Step 1						
Quantity	of	.31	.10	5.734**		
PA						
	Intrinsic			.109	1.375	.170
	motivation					
	Extrinsic			-.020	-.231	.818
	motivation					
	Amotivation			.034	.417	.677
	Task			.113	1.285	.200
	orientation					
	Ego orientation			.163	2.303	.022*
Step 2						
Quantity	of	.38	.14	7.343**		
PA						
	Intrinsic			-.016	.190	.849
	motivation					
	Extrinsic			-.039	-.456	.649
	motivation					
	Amotivation			.024	.306	.759
	Task			.065	.746	.457
	orientation					
	Ego			.095	1.357	.176
	Orientation					
	Competence			.268	3.745	.000**
Step 1						

Intention to help others be active		.55	.30	23.242**			
	Intrinsic motivation			.303	4.245	.000**	
	Extrinsic motivation			-.106	-1.387	.166	
	Amotivation			.108	1.501	.135	
	Task orientation			.143	1.861	.064	
	Ego orientation			.227	3.642	.000**	
Step 2							
Intention to help others be active		.58	.34	23.126**			
	Intrinsic motivation			-.215	3.022	.003*	
	Extrinsic motivation			-.124	-1.664	.097	
	Amotivation			.099	1.405	.161	
	Task orientation			.097	1.281	.201	
	Ego Orientation			.165	2.643	.009*	

Competence	.252	4.018	.000**
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* $p < .05$, ** $p < .001$

Gender and age differences on students' PA levels, intentions to help others be physically active and subjective vitality

Regarding frequency of PA (days/ week), two way analysis of variance (Two-Way Anova) revealed no significant age effect ($F_{4,282} = 2.064$, $p = .09$), nor a significant gender effect ($F_{2,282} = 1.051$, $p = .351$), and nor a significant interaction between gender and age ($F_{4,282} = 1.606$, $p = .173$).

Regarding quantity of PA (hours/ week), results showed no significant age effect ($F_{4,284} = .775$, $p = .542$), nor a significant interaction between gender and age ($F_{4,284} = .651$, $p = .627$), but a significant gender effect ($F_{2,284} = 5.092$, $p < .05$). Boys engaged more hours per week in PA ($M = 2.60 \pm 1.18$) compared to girls ($M = 1.89 \pm 1.27$).

Regarding intention to help others be physically active, results revealed no significant gender effect ($F_{2,279} = 1.788$, $p = .169$), nor a significant interaction between gender and age ($F_{4,279} = 1.629$, $p = .167$), but a significant age effect ($F_{2,279} = 5.315$, $p < .001$). Analyzing age effect, results showed that 15 years old ($M = 5.34 \pm 1.00$), 14 years old ($M = 4.93 \pm 1.38$) and 16 year old student ($M = 4.61 \pm 1.20$) had higher scores on intention to help others be physically active compared 13 year old ($M = 4.22 \pm 1.19$) and 17 years old students ($M = 4.35 \pm 1.32$).

Finally, regarding subjective vitality, two way analysis of variance (Two-Way Anova) showed no significant age effect ($F_{4,276} = .946$, $p = .438$), nor a significant interaction between gender and age ($F_{4,276} = 1.014$, $p = .400$), but a significant gender effect ($F_{2,276} = 3.120$, $p < .05$). Boys reported higher scores on subjective vitality ($M = 3.58 \pm .73$) compared to girls ($M = 3.36 \pm .66$).

Discussion

The results show a huge difference in the mean hours spend on physical activity hours per week both male and female with ($M=2.60$ for male and $M=1.89$ for female). While for the physical activity frequency days per week it shows that Malaysian adolescent only 7.8% spend 6 to 7 days, 60 minutes per day which meet the WHO requirement of adolescent physical activity guidelines. 74.8% of the large group of the pupils are in the inactive category which spending 3 days or less being active for 60 minutes. Comparison to the standard of North America and Western Europe in term of mean hours and frequency of days per week spent by the adolescent, Malaysian show a vast difference in the hours and days. These results correlated with the previous concern showing that East Asia on average are less physically active compare to Western demographics, (Ismail, et. al.,2002; Lindner, 1999). Furthermore, the perspectives in involving in physical activity could be based on cultural, educational system, the social context that directly influences children's participation and continuity in physical activity, McKay, Wood and Brantley, (2007).

The main purpose of the present study was to examine the relationship between the achievement goals (task, ego) and behavioural regulation of motivation (intrinsic, extrinsic, amotivation with the subjective vitality, the intention to help other be physically active and self-report physical activity. The results show that task orientation was significantly correlated with intrinsic motivation. Thus, we can say that pupils who adopt the higher task orientation (e.g. 'I enjoy learning new skills') will have higher intrinsic motivation (e.g. 'PE is Fun'). This finding is parallel with AGT and empirical evidence (Ames, 1992a). The theoretical framework of achievement goal (task and ego Orientation) and behavioral regulation motivation (intrinsic, extrinsic, amotivation) has been an important study to fill the gap of finding the key-factor of motivation regulation for children and adolescent to be physical active via physical education

and sport setting. Based on previous study show the intrinsic motivation will lead to learning on own interest without expecting any rewards and pupils enjoy the physical education with more likelihood of adapting physical activity as lifelong learning (Fox, 1992; Fox, Copper & Mckenna, 2004; Trost, 2004)

The result also shows that a significant correlation between task orientation and both physical activity variables frequency (days/week) and physical activity amount (hours/week). Meanwhile, for intrinsic motivation, the significant correlation was found only for physical activity amount (hours/week). However, no correlation between intrinsic motivation and physical activity frequency (days/week). The study also shows a significant correlation between task orientation and subjective vitality. These finding will be a new adding to the added value to the research finding in the achievement goal and physical education setting. According to Standage, Duda and Ntoumanis (2005). Autonomous self-regulation motivation lead to optimal psychological functioning and thus is linked to well-being and autonomous self-regulation are related to intrinsic motivation Ryan and Deci (2006). The finding shows that intrinsic motivation was significantly correlated with subjective vitality (well-being).

Furthermore, the intention to help others to be physically active were also found significantly correlated with both task orientation, intrinsic motivation and subjective vitality (well-being). These finding agree that strong positive perceived behaviour and with the positive social context with other peers relate to high tendency to participate in physical activity Martin, Kulinna, McCaughtry, Cothran,, Dake, & Fahoome (2007). A positive impact on strong intentions behaviour Ajzen, (2004) positively lead to intention to help other to be physically active. Therefore, the hypotheses (a) Task orientation and intrinsic motivation will positively linked with self-report PA variables (days/week, hours/week), intention to help others be physically active and subjective vitality can be agreed and accepted.

The second purpose of the present study was to examine possible gender and age the difference in pupils' PA levels, intentions to help others be physically active and subjective vitality. It is shown that the quantity of PA (hours/week), results show significant gender effect with Boys engaged more hours per week in PA ($M = 2.60 \pm 1.18$) compared to girls ($M = 1.89 \pm 1.27$). However, no significant effect on the frequency of PA (days/week). For intention to help others, it shows that results showed that 15 years old ($M = 5.34 \pm 1.00$), 14 years old ($M = 4.93 \pm 1.38$) and 16 year old student ($M = 4.61 \pm 1.20$) had higher scores on an intention to help others be physically active compared 13 year old ($M = 4.22 \pm 1.19$) and 17 years old students ($M = 4.35 \pm 1.32$). Furthermore, for subjective vitality Boys reported higher scores on subjective vitality ($M = 3.58 \pm .73$) compared to girls ($M = 3.36 \pm .66$). Therefore, we can partially accept hypotheses. There will be gender and age differences on students' PA levels, intentions to help others be physically active and subjective vitality.

Finally, the stand regression analyses revealed that intrinsic motivation, task orientation was positive prediction variables to the frequency of physical activity and subjective vitality, while for intention to help others physically active, intrinsic motivation were a positive prediction variable. The results parallel with the empirical of the previous study, where intrinsic motivation and task orientation positively related to intention to continuing exercise and positive effects in PE, (Ntoumanis, 2001; Standage, Duda, Ntoumanis, 2005). The current finding shows that all ego orientation was positively related to frequency, quantity and intention to help other to be physically active and this is not supporting the previous research, therefor a multivariate analyses was conducted and the results showed that adding competence in the independent variable mediating the low ego orientation or no significant ego orientation towards the physical active involvement and intention to help others to be physically active. The literature evidence Deci and Ryan (1985), shows that high perceived competence can be

normative and it can control the ego orientation, where the perceived competence will associate with the individual behaviours and self-determination motivation behaviour.

Conclusion

In conclusion, the present study shows that task orientation and intrinsic motivation had a positive impact on the physical activity frequency and hours, intrinsic motivation, well-being and intention to help others to physical active. Future research suggestion to investigate in-depth with culture differences, educational system, social context influence children's physical activity. It was profound that task orientation and intrinsic motivation could beneficial for the pupils' well-being and intention to help others to be physically active. These lead to a better understanding of the key point of how we could motivate and provide support for the children and adolescent to be adapting physical activity as a lifelong learning skills.

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IMPACT CONSENT FORM

1. Purpose

According to World Health Organization children and adults should do regular physical activity to sustain good health and quality of life. The purpose of this study is to identify the factors that affect students' motivation and participation in Physical Activities (PA) using an online questionnaire. Our data will be used to improve the quality of children's experience during the Physical Education lesson in order to keep them motivated and happy when they are doing Physical Activities.

2. Measurement Procedure

Your child will need to complete an anonymous online questionnaire during a Physical Education class, assessing his / her PA levels, his / her motivation to participate in regular PA and the factors that influence his / her participation in PA.

3. Publication of Data - Results

Your child's participation in this survey implies that you agree with the publication of data and its results, provided the information is anonymous and participants' names or personal details are not disclosed.

4. Ethics. The present survey has been examined and received the approval of the ethics committee of the University of Thessaly and the Greek Ministry of Education.

5. Informations

Please, do not hesitate to ask questions about the purpose and / or how to conduct the survey. If you have any doubts or questions, please ask us for further explanations.

6. Freedom of Consensus

Your permission to engage your child in this survey is voluntary. You are free not to consent or interrupt your child's participation whenever you wish.

For the parent / guardian: I read this form, I understand the research processes and I consent to my child's participation in this research. YES ☐ NO ☐

For the young student: I agree to participate in this survey. YES ☐ NO ☐

Date: ____/____/____

Name and Signature of
Parent / Guardian

Name and Signature of
Participant

Name and Signature of
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Co-funded by the
Erasmus+ Programme
of the European Union

INSTRUCTIONS

Please answer all the questions as honestly and carefully as possible. There are no right or wrong answers so please answer as you truly feel. If anything is confusing, please ask for help by raising your hand and the researcher will assist you. We are interested in your participation in sports and exercise in your leisure time, in your physical education classes and your feelings and views while participating in sports/exercise and physical education in school.

Section A

1. Enter your birthday here: ____ / ____ / ____
For example, if your birthday is 15th December 2002, please write: 15 / December / 2002
2. How old are you? (Please write your age in years) ____ years
3. Are you a boy or a girl? : Boy ☐ Girl ☐ Other Answer ☐
4. What is your country where you live now? _____
5. What is your town where you live now? _____
6. Which of the following is the country of your birth? (Please ✓ a box)

Britain/UK	<input type="checkbox"/>
France	<input type="checkbox"/>
Germany	<input type="checkbox"/>
Greece	<input type="checkbox"/>
Italy	<input type="checkbox"/>
Spain	<input type="checkbox"/>
Turkey	<input type="checkbox"/>
Other	<input type="checkbox"/>
7. Which is your ethnicity?

British/UK	<input type="checkbox"/>
French	<input type="checkbox"/>
German	<input type="checkbox"/>
Greek	<input type="checkbox"/>
Italian	<input type="checkbox"/>
Spanish	<input type="checkbox"/>
Turkish	<input type="checkbox"/>
Other	<input type="checkbox"/>
- 9b. If other, what? _____
10. School level (Please ✓ a box): Primary ☐ Secondary ☐ College ☐
11. Year group 1 2 3 4 5 6 7 8 9 10 11 12
12. School Name (Please, name your school): _____

Section B: Physical activity is any activity that **increases your heart rate** and makes you **get out of breath** some of the time. **Physical activity** can be done in sports, playing with friends, or walking to school. Some examples of **physical activity** are running, brisk walking, rollerblading, biking, dancing, skateboarding, swimming, soccer, basketball, football, & surfing.

Over the **past 7 days**, on how many days were you physically active for a total of at least **60 minutes** per day?

☐ 0 days
 ☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5
 ☐ 6
 ☐ 7 days

Over a **typical or usual week**, on how many days are you physically active for a total of at least **60 minutes** per day?

☐ 0 days
 ☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5
 ☐ 6
 ☐ 7 days

Please write in which sports/ physical activities you participate this year?

Outside school hours: How many **hours** do you usually exercise in your free time, so much that you get out of breath or sweat?

☐ None
 ☐ About half an hour per week
 ☐ About one hour per week
 ☐ About 2-3 hours per week
 ☐ About 4-6 hours per week
 ☐ About 7 hours per week

How many days each week do you have PE?

- a. 0 days (never) ☐
- b. 1 day ☐
- c. 2 days ☐
- d. 3 days ☐
- e. 4 days ☐
- f. 5 days ☐

How many break/study hall periods do you have per day?

- a. 0 ☐
- b. 1 ☐
- c. 2 ☐
- d. 3 ☐
- e. 4 ☐

How many times last week did you attend sessions or practices for sports or structured physical activities that were led by a coach, instructor or leader

- a. 0 ☐
- b. 1 ☐
- c. 2 ☐
- d. 3 ☐
- e. 4 ☐
- f. 5 or more ☐

How many **days** each week do you have sports or other physical activities **organized by your school outside of Physical Education and/or in after school time?**

☐ 0 days (never)
 ☐ 1 day
 ☐ 2 days
 ☐ 3 days
 ☐ 4 days
 ☐ 5 days

The Youth Activity Profile will ask you about the time you spend being active (both in school and out of school) and the time you spend being sedentary.

- **Physical activities** are things that involve a lot of walking, running or moving around. It includes biking and dancing as well as sports or outdoor play that involves a lot of moving around.
- **Sedentary activities** are things such as watching TV, or playing video games, computer games, or handheld games that you do in your free time. It does NOT include the time you spend sitting while eating or while doing homework.

Most questions will ask you only to think about the last 7 days but a few questions will ask about what you typically do (on a normal week). There are no right or wrong answers so provide honest answers.

Activity Levels - at School. These questions ask about your physical activity at school. This includes physical education but you may also be active on your way to school, during breaks, or at lunch. Answer the questions based on your physical activity at school in the last 7 days.

1. Activity To School: How many days did you **walk or bike to school**? (*If you can't remember, try to estimate*)

- a. 0 days (never) ☐
- b. 1 day ☐
- c. 2 days ☐
- d. 3 days ☐
- e. 4-5 days (most every day) ☐

2. Activity during Physical Education Class: During **physical education**, how often were you running and moving as part of the planned games or activities? (*If you didn't have PE, choose "I didn't have physical education"*)

- a. I didn't have physical education ☐
- b. Almost none of the time ☐
- c. A little bit of the time ☐
- d. A moderate amount of time ☐
- e. A lot of the time ☐
- f. Almost all of the time ☐

3. Activity during Breaks/Study Hall: During **breaks/study hall**, how often were you playing sports, walking, running, or playing active games? (*If you didn't have a break at school, choose "I didn't have breaks/study hall"*)

- a. I didn't have breaks/study hall ☐
- b. Almost none of the time ☐
- c. A little bit of the time ☐
- d. A moderate amount of time ☐
- e. A lot of the time ☐
- f. Almost all of the time ☐

4. Activity during Lunch: During **lunch break**, how often were you moving around, walking or playing? (*If you didn't have a lunch break at school, choose "I didn't have lunch breaks"*)

- a. I didn't have lunch breaks ☐
- b. Almost none of the time ☐
- c. A little bit of the time ☐

- d. A moderate amount of time ☐
- e. A lot of the time ☐
- f. Almost all of the time ☐

5. Activity from School: How many days often did you **walk or bike from school**? (*If you can't remember, try to estimate*)

- a. 0 days (never) ☐
- b. 1 day ☐
- c. 2 days ☐
- d. 3 days ☐
- e. 4-5 days (most every day) ☐

Youth Activity Profile

Activity Levels at Home

Activity Levels - Outside of School. These questions ask about your overall levels of physical activity during different periods of time (outside of school time). This would include structured exercise or sport activities as well as activity playing with friends, dancing or doing work/chores. Answer the questions based on your physical activity outside of school in the last 7 days.

6. Activity before School: How many days **before school (6:00-8:00 am)** did you do some form of physical activity for at least 10 minutes? (This includes activity at home NOT walking or biking to school)

- a. 0 days ☐
- b. 1 day ☐
- c. 2 days ☐
- d. 3 days ☐
- e. 4 to 5 days ☐

7. Activity after School: How many days **after school (between 3:00 -6:00 pm)** did you do some form of physical activity for at least 10 minutes? (This can include playing with your friends/family, team practices or classes involving physical activity but *NOT walking or biking home from school*)

- a. 0 days ☐
- b. 1 day ☐
- c. 2 days ☐
- d. 3 days ☐
- e. 4 to 5 days ☐

8. Activity on Weeknights: How many **school evenings (6:00-10:00 pm)** did you do some form of physical activity for at least 10 minutes? (This can include playing with your friends/family, team practices or classes involving physical activity but *NOT walking or biking home from school*)

- a. 0 days ☐
- b. 1 day ☐
- c. 2 days ☐
- d. 3 days ☐
- e. 4 to 5 days ☐

9. Activity on Saturday: How much physical activity did you do last **Saturday**? (*This could be for exercise, work/chores, family outings, sports, dance, or play. If you don't remember, try to estimate*)

- a. No activity (0 minutes) ☐
- b. Small amount of activity (1 to 30 minutes) ☐
- c. Small to Moderate amount activity (31 to 60 minutes) ☐
- d. Moderate to Large amount of activity (1 to 2 hours) ☐
- e. Large amount of activity (more than 2 hours) ☐

10. Activity on Sunday: How much physical activity did you do last **Sunday**? (*This could be for exercise, work/chores, family outings, sports, dance, or play. If you don't remember, try to estimate*)

- a. No activity (0 minutes) ☐
- b. Small amount of activity (1 to 30 minutes) ☐
- c. Small to Moderate amount activity (31 to 60 minutes) ☐
- d. Moderate to Large amount of activity (1 to 2 hours) ☐
- e. Large amount of activity (more than 2 hours) ☐

Section C: These statements relate to **your feelings and experiences in your Physical Education (PE) class during the past 3-4 weeks**. Please circle the number that best reflects how *you* felt during this period.

<i>During the past 3-4 weeks, in this Physical Education (PE) class...</i>	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I decided which activities I practiced in PE.	1	2	3	4	5
2. I thought I was quite good at PE.	1	2	3	4	5
3. I felt supported in PE.	1	2	3	4	5
4. I had a say on what skills I worked on in PE.	1	2	3	4	5
5. I was satisfied with what I did in PE.	1	2	3	4	5
6. I felt understood in PE.	1	2	3	4	5
7. It was my choice to do particular activities in PE.	1	2	3	4	5
8. I was skillful in PE.	1	2	3	4	5
9. I felt my opinions were listened to in PE.	1	2	3	4	5
10. I felt the freedom to do some things my own way in PE.	1	2	3	4	5
11. I felt quite able in PE	1	2	3	4	5
12. I felt valued in PE.	1	2	3	4	5
13. I felt I performed very well in PE.	1	2	3	4	5
14. I had some choice in what I did in PE.	1	2	3	4	5
15. I think I did quite well in PE.	1	2	3	4	5

Section D: We are interested in the reasons underlying students' decisions to actively participate, or not in Physical Education (PE). Using the scale below, please indicate to what extent each of the following items is true for you.

I actively participate in Physical Education (PE)...	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Because I enjoy it.	1	2	3	4	5
2. Because the benefits are important to me (e.g. developing as a person, getting fit, playing with my schoolmates).	1	2	3	4	5

3. Because I would feel guilty if I don't do it.	1	2	3	4	5
4. Because people push me to do it.	1	2	3	4	5
5. But I question why I continue doing it.	1	2	3	4	5
6. Because I like it.	1	2	3	4	5
7. Because I value the benefits (e.g. learning new skills, being healthy, playing with friends etc).	1	2	3	4	5
8. Because I would feel ashamed if I don't do it.	1	2	3	4	5
9. To satisfy people who want me to do it.	1	2	3	4	5
10. But I question why I am participating in PE.	1	2	3	4	5
11. Because it is fun.	1	2	3	4	5
12. Because it teaches me useful things for my health.	1	2	3	4	5
13. Because I would feel bad if I wouldn't actively participate in PE.	1	2	3	4	5
14. Because I feel pressure from other people to participate in PE.	1	2	3	4	5
15. But I really don't know why anymore.	1	2	3	4	5
16. Because I find it exciting.	1	2	3	4	5
17. Because I learn things which are useful in my life.	1	2	3	4	5
18. Because I would feel like a failure if I don't.	1	2	3	4	5
19. Because if I don't other people will not be pleased with me.	1	2	3	4	5
20. But I wonder what's the point.	1	2	3	4	5

Section E: Below are a number of **statements relating to your everyday life (i.e. all the things you do)**, not specifically your physical education class. Please indicate the extent to which you agree or disagree with each of the following statement; bear in mind **how you GENERALLY felt over the past month.**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
During the last month...					
1. I felt full of vitality.	1	2	3	4	5
2. I had high spirits.	1	2	3	4	5
3. I looked forward to each day.	1	2	3	4	5
4. I nearly always felt alert and awake.	1	2	3	4	5
5. I felt I had a lot of energy.	1	2	3	4	5

Section F: For various reasons some children exercise very little or not at all at school. If your PE teacher encourages you to help these classmates exercise more frequently outside of school, what do you intend to do?

I intend to help my classmates exercise more frequently outside of school

VERY UNLIKELY!	Quite unlikely	Rather unlikely	So-so	Neither likely	Quite likely	VERY LIKELY!
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I am determined to help my classmates exercise more frequently outside of school.

DEFINITELY NO!	No	Rather no	Yes and no	Rather yes	Yes	DEFINITELY YES!
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THANK YOU VERY MUCH FOR YOUR PARTICIPATION!