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Examining the impact of teacher' motivational style and competition on students' subjective vitality in physical education

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Summery
Physical education teachers can influence students' subjective vitality through the motivational strategies they use. We hypothesized, based on self-determination theory, that doing well when autonomously motivated would enhance subjective vitality relative to doing well when controlled in one's motivation. In this study, the authors examined the impact of autonomy-supportive versus controlling motivational style and win versus lose statue on students' subjective vitality in physical education. A race and physical activity text was communicated in a controlling versus autonomy-supportive way, and then subjects participated in the race. 105 subjects participated in the study. Results of tow-ways ANOVA analyses shown that autonomy support promoted students' subjective vitality in physical education. Such results were not found for controlling motivational style. Moreover, autonomous motivation is a better predictor of subjective vitality than lose/win status. Results are discussed in terms of the behaviors that are autonomous or self-determined may yield better vitality relative to non-self-determined activities.

Key Words*: Physical Education; Subjective Vitality; Motivational style; competition; Self-Determination theory.*

1. Introduction

Ryan and Fredric [1] characterized subjective vitality as an entity full of energy, enthusiasm and liveliness, without fatigue, weariness or exhaustion, and proved that when the subjective vitality is at a lower level, irritability and fatigue will result and likely reduce the potential for doing activities. When the subjective vitality is at a higher level, mood is in a proper status and sufficient energy is created so all duties and activities are performed well [2]. Subjective vitality indicates an entity full of positive mental energy and a vital and cheerful person is an alert and fresh person, full of life and energy. Ryan and Fredrick [1] defined subjective vitality as a mental experience full of life and energy.

In the present study we examine motivational factors expected to impact directly on subjective energy. Specifically, we argue that success at behaviors that are autonomously regulated should maintain or enhance subjective energy or vitality, relative to success at the same actions when they are directed or controlled by forces outside the self. Moreover, it seems teacher motivational style (autonomy-supportive versus controlling) is a better predictor of subjective vitality than win and lose status or success and failure. That is, we predict that when people are intrinsically motivated or autonomously extrinsically motivated, they will not experience their efforts as draining and may even feel their energy enhanced.

Subjective vitality differs from activation or energy per se because many forms of activation such as anger, anxiety, or arousal are either unrelated to subjective vitality, or negatively related to it [1]. Instead, vitality represents energy that one can harness or regulate for purposive actions.

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Vitality is a complex and dynamic outcome, and one that is influenced by both somatic and psychological factors. A great deal research [such as; 1 & 2] found that not only subjective vitality has relation with psychological factors such as autonomy and relatedness, but also with physical health. On the somatic side, they showed that vitality was lower in those reporting such complaints as pain, common physical symptoms, ineffective body functioning, and symptoms of summarization. On the psychological side, they argued that subjective vitality should be maintained or enhanced under conditions where the basic psychological needs for autonomy, competence, and relatedness are satisfied. The role of autonomy may be particularly important in the dynamics of energy. Thus, psychological and physical events both impact vitality and influence changes in energy within persons over time and between persons overall [2].

When in a vital state, people are more active and productive, cope better with stress and challenge, and report greater mental health [e.g., 1]. In addition, growing evidence suggests that it is specifically the activated forms of positive affect associated with vitality that render people more resilient to physical and viral stressors and less vulnerable to illness [e.g., 4; 5; 6]. These consequences make vitality an important focus of research.

Self-determination theory is useful in understanding the motivational, cognitive and affective processes of adolescents in PE [SDT; 7; 2]. This theoretical approach has been successfully applied in the context of education [e.g., 8] and sport [e.g., 8; 9].

Self-Determination Theory [7; 2] distinguishes three kinds of motivation: intrinsic motivation, extrinsic motivation, and motivation, situated along a continuum ranging from high to low self-determination, and which vary according to the degree of behavioral regulation. Thus, motivation refers to the absence of the intention to act and this may be because the person does not feel competent, cannot see the contingencies between the behaviors performed and the expected results, or does not value the activity. Intrinsic motivation represents the highest degree of self-determined motivation and occurs in the situations in which individuals feel free to commit to activities they find interesting and/or fun and that offer them the chance to learn. Lastly, extrinsic motivation, in contrast, takes place when people carry out a task because they value the results associated with it [e.g., public acknowledgement, extrinsic rewards) more than the activity itself. Competition is a special type of extrinsic activity, for it often necessitates being competent and effective, and can measure one's competence by competing with another. Deci and colleagues [11] suggest when one focuses on the goal of winning rather than on the process of doing the activity well, the behavior is extrinsically motivated. Of course, winning can improve happiness and enhance motivation, but the motivation is extrinsic rather than intrinsic so will tend to frustrate basic psychological needs and not improve vitality.

SDT proposes that human beings have innate psychological needs for autonomy, competence and relatedness. Intrapersonal and interpersonal contexts that support the satisfaction of these needs will promote a person's enjoyment of activities and the autonomous self-regulation of behaviors [2]. According to Gagne [12], people are more likely to be intrinsically motivated, doing an activity simply for the enjoyment they derive from it, when they can freely choose to pursue an activity (autonomy/choice), when they master the activity (competence) and when they feel connected and supported by significant people, such as a manager, a parent, a teacher or teammates (relatedness).

Autonomous behaviors are those that are phenomenally experienced as flowing from and expressing one's self, whereas controlled actions are experienced as demands to think, feel, or behave in specified ways and could thus feel like a drain on personal energy [13].

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According to this theory, Social contexts differ in the way communicate with peoples. Within SDT [14], these contexts are described as being controlling versus autonomy-supportive. Studies among children have indicated that pressuring communication styles undermine persistence [15]. Such controlling environments produce an external locus of causality [16], thereby frustrating people's basic need for self-determination or autonomy, that is, their tendency to engage in a willing and volitional manner in an activity. A teacher's motivating style toward students can be conceptualized along a continuum that ranges from highly controlling to highly autonomy-supportive [17]. In general, autonomy-supportive teachers facilitate, whereas controlling teachers interfere with the congruence between students' self-determined inner motives and their classroom activity. Autonomy-supportive teachers facilitate this congruence by identifying and nurturing students' needs, interests, and preferences and by creating classroom opportunities for students to have these internal motives guide their learning and activity. In contrast, relatively controlling teachers interfere with students' inner motives because they tend to make salient a teacher-constructed instructional agenda that defines what students should think, feel, and do. To shape students' adherence toward that agenda, controlling teachers offer extrinsic incentives and pressuring language that essentially bypass students' inner motives.

The motivating style of one person influences the motivation, emotion, learning, and performance of others [18]. In school settings, for instance, students with autonomy-supportive teachers, compared to students with relatively controlling teachers, show greater mastery motivation, perceived competence, and intrinsic motivation, more positive emotionality and greater conceptual understanding, higher academic performance, and greater persistence in school [vs. dropping out; 19]. Autonomy-supportive teachers are able to facilitate these positive educational and developmental outcomes in their students because they find ways to involve and satisfy their students' psychological needs (for autonomy, competence, and relatedness) during instruction [20; 18].

Given that vitality is defined as a feeling of possessing energy available to one's self, Ryan and Frederick [1] reasoned that it should be higher when successfully completing autonomously motivated actions than when successfully completing controlled ones. The linkage between self-determined versus controlled motivations and subjective vitality has been suggested by other studies as well. Sheldon and T. Kasser [21] found that personal strivings that were less self-determined were associated with lower subjective vitality. Sheldon, Ryan, and Reis [22] found support for the association of self-determination and vitality in a 2-weeklong diary study of college students. These theoretical views and empirical findings suggest that behaviors that are autonomous or self-determined may yield better enhanced vitality relative to non-self-determined activities (e.g., being controlled), even when one controls for competence or goal success.

In summary, our aim in this article is to examine the impact of autonomy-supportive versus controlling communication styles as well as race result status on students' subjective vitality in physical education.

2. Method

2.1. Participants

The initial student sample contained 140 seventh grad male students. However, students who did not complete the entire questionnaire were excluded from the analyses, as were students whom their rating of Perceived Locus of Causality scale was not match with their experimental group. Hence, all analyses were based on a final sample of 105 students (age: M = 11.42, SD = 1.44).

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2.2. Measures

Firstly, all measures were translated into Persian and Cronbach's alpha coefficients were calculated to assess their internal reliability.

Subjective Vitality Scale. Participants' vitality was assessed with the Subjective Vitality Scale, State Level Version [SVS; 23], a 6-item survey assessing feelings of aliveness and energy on 7-point Likert-type scales. Sample items include "I feel energized right now" and "At this moment, I feel alive and vital". The SVS has been extensively validated by Ryan and Frederick [1], Nix et al. [3], and Vansteenkiste et al. [24]. In the present study it was measured after the race.

Perceived Locus of Causality scale. This was assessed with five items (α = .80) reflecting subjects' perception of freedom and choice (e.g., ''I believe I had some choice about doing this activity''). These items were taken from the Intrinsic Motivation Inventory [IMI; 25; 26; 27] for use herein as a manipulation check.

2.3. Procedure

The experiment took place during the participants' regular classes, which increases its ecological validity, in which they were told to get ready for track (580 m), and participants who could attain a 3-minute record could ascend to the next race. This race took place after one week. All subjects were provided with a set of written instructions (about 8 lines). A research assistant who was unfamiliar with the theoretical purpose of the study randomly assigned the subjects to one of the two motivational styles (cell sizes vary between 22 and 31) by giving them a particular set of instructions. The instruction sets were of the same length so that anyone looking at them casually would not suspect there were differences among them. The participants read their assigned set of instructions half an hour before the race. Motivational style was manipulated in the instructions. The controlling context was operational zed by using explicitly controlling language such as: ''you should follow the guidelines of the teacher'', ''you have to'', ''you are expected to'', and ''a lot of kids follow the guidelines of the teacher to feel good about themselves and to avoid feeling guilty for not doing so.'' These instructions were intended to enhance the pressure to race. In the autonomy- supportive condition, wording such as ''we invite you to'', ''you can decide for yourself to follow the guidelines of the teacher'' and ''you might want to do your best to race'' were used instead. Then, to examine whether the autonomy support versus control manipulations produced the intended effect, we used the Perceived Locus of Causality scale [PLOC; 28]. Ultimately, the participants' vitality was assessed with a Subjective Vitality Scale, State Level Version [SVS; 23] after the race.

3. Results

The data collected were analyzed in two parts. Firstly, descriptive statistics were computed. In addition, descriptive statistics were computed followed by analysis of variance (ANOVA) and Follow-up contrast analyses with Turkey test.

Table 1 presents the means and standard deviations of the four experimental conditions.

Table 1. The means and standard deviations of the four experimental conditions

	winners			losers		
autonomy supportive	*M:* 5.76	*S:* 1.05	*n* : 26	*M:* 3.81	*S:* 1.02	*n* : 22
Controlled	*M:* 4.21	*S:* 0.91	*n* : 28	*M:* 2.45	*S:* 0.99	*n* : 31

A tow-way ANOVA indicated that participants' degree of subjective vitality significantly differed across conditions (Table 2).

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Table 2. A tow-way ANOVA

	SS	df	MS	F	Sig
SS_A	52.61	1	52.61	25.53	0.000
SS_B	88.14	1	88.14	42.78	
SS_{AB}	0.5	1	0.5	0.24	
SS_W	208.06	101	2.06		
SS_T	349.31	104			

The three F value was significant, F (1, 101) =6.85, p<.001.

Table 3. Follow-up contrast analyses with Tukey test

	M_1: 5.76	M_2: 3.81	M_3: 4.21	M_4: 2.45
M_1: 5.76	-	1.86**	1.46*	3.22**
M_2: 3.81	-	-	0.86	1.44*
M_3: 4.21	-	-	-	1.76**
M_4: 2.45	-	-	-	-

*P<.05. $HSD_{0.05}$ =1.43

**P<.01. $HSD_{0.01}$ =1.75

Follow-up contrast analyses with Tukey test (see Table 3) indicated that winner participants in the autonomy supportive condition (M=5.67, SD=1.05) experienced more subjective vitality as autonomous compared with participants in other conditions. The loser participants in controlling condition (M=2.45, SD=0.99) experienced least subjective vitality compared with other conditions. Moreover, there is no significant difference between subjective vitality of the loser participants in autonomy supportive condition with winner participants in controlling group, but the difference between the loser participants in autonomy supportive and controlling group is significant. Moreover an interaction effect did not emerge in the present study.

4. Discussion

SDT posits that the teacher motivational style (i.e., autonomy-supportive vs. controlling) could explain variance in children's motivation, well-being, vitality and performance. In study we tested the hypothesis that conditions designed to foster an internal perceived locus of causality would result in greater enhancement of subjective vitality relative to conditions conducive to an external perceived locus of causality. It was predicted that vitality would be differentially influenced by type of motivation. Results supported the hypothesis. Results indicated that those with more autonomous reasons felt more refreshed and subjective vitality, whereas those (even winners) with more controlled reasons did not. Self-regulated activity can help enhance subjective vitality relative to engaging in more controlled activity, a finding important to those concerned with fostering feelings of energy and well-being. These findings are consistent with Hollembeak, J., & Amorose, A. J. [8] and Vansteenkiste, M., Soenens, B., & Lens, W. [13].

The comparison of the loser participants in an autonomy-supportive condition with winner and loser participants in the controlling communication group provided interesting insight into the precise impact of an autonomy-supportive versus controlling motivational style as well as race results status. Specifically, the provision of facilitating variable (autonomy-supportive motivational style) enhanced subjective vitality compared with the controlling group, whereas the provision of debilitating factors decreased early adolescents' subjective vitality.

On the basis of SDT, we reasoned that controlling motivational style would undermine subjective vitality by inducing an external perceived locus of causality for engaging in race. A controlling communication style (as opposed to an autonomy-supportive communication style) was

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found to undermine students' subjective vitality because students start to regulate their race participation in a less autonomous manner.

In PE, many students engage in the activities because they are told to do so by the teacher, that is, their behaviors are mostly externally regulated. As such, the onus is on the teachers to adopt appropriate motivational strategies that may enhance subjective vitality in PE. Deci and Ryan [29; 30] recommended that to facilitate autonomous regulation, the PE teacher may provide students with the required information regarding a skill or tactic and then allowing the students choice in the way they wish to execute the task, or the scope that they like to adopt regarding the tactics and game plan. Other practical suggestions also include establishing peer learning groups in which students play different roles (such as demonstrating or refereeing) in the lesson, for example [31].

Limitations and Future Research

The current study is not without its limitations. First, a control group wasn't included in study; we could not examine the precise effect of the manipulated variables. Second, we used a single measure of subjective vitality. Hence, future research might examine whether the present findings among early adolescents could be generalized across different types of activities. Third, the cross-sectional nature of research design which only allowed for a slice-in-time study. Fourth, it was also not within the scope of this study to look at school and developmental differences due to the sample size and homogeneous age and sex group of the students involved in the study. Fifth, In the SDT [7; 29], the role of perceived autonomy support from PE teachers tells only part of the picture in terms of the influence of innate psychological needs on pupils' motivation in PE. Hence, future research might examine whether the present findings among early adolescents could be generalized across different types of activities (e.g., exercise, work and learning), ages, sex, and situations. Moreover, Future studies can look at the influence of all the three innate psychological needs and/or perceived autonomy support from parents and/or peers as well.

5. Conclusion

Despite the limitations, the findings from the present study have important implications. They suggest that how children start to regulate their activity participation is a better predictor of their subjective vitality than their lose/win status. An autonomous, supportive condition would increase subjective vitality by promoting an internal perceived locus of causality for engaging in a physical activity. The results of this study call for the promotion of self-determined motivation in PE in order to enhance students' positive experiences.

From a practical point of view, since autonomy-supportive motivational style predict more subjective vitality variance than controlling style, autonomy-supportive motivational style should be encouraged to promote subjective vitality in adolescents. Autonomy-supportive motivational style may be developed by providing the students with a rationale as to the importance of physical activity, thereby fostering identification [31]. In addition, Deco and Ryan [29; 30] highlighted that when providing the students with a meaningful rationale for the activity, that there should be some expression of empathy or acknowledgement of the students' concerns so that the students feel understood and accepted. Furthermore, the PE teacher also needs to ensure that the expression of empathy or acknowledgement is not verbalized in a controlling manner such as, ‘‘you must. ; You have to.’’. Instead, the teacher should portray choice and support with expressions like, ‘‘You may want to. You can try to.’’. Use of appropriate expression of choice and support, promote class structures that are autonomy-supportive and curriculum that are interesting and relevant to the students.

The instructions in the present research were short and in written form. Nevertheless, motivational style considerably affected students' subjective vitality. Different explanations might account for this. First, the present experiments were conducted in a naturalistic class setting, which probably helped improve the credibility of the instruction and increased their effect. Second, these effects suggest that children's motivation is easily malleable, an observation that fits with SDT's

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view of motivation. According to SDT [2], each person regulates his or her behavior on the basis of both autonomous and controlled reasons. Because self-regulatory styles are to a certain extent available within individuals, the social environment can easily trigger one of both self-regulatory styles. The present instructions seem to have primed one of both self-regulatory styles. The present findings illustrate that even small changes in the social environment make a considerable difference. Hence, the present results are hopeful because they indicate that instructors can considerably affect early students' subjective vitality. At the same time, the present results suggest that the environment can also block students' subjective vitality.

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