Psychology of Sport and Exercise 14 (2013) 508–518

Contents lists available at SciVerse ScienceDirect

Psychology of Sport and Exercise

journal homepage: www.elsevier.com/locate/psychsport

Do the benefits from autonomy-supportive PE teacher training programs endure?: A one-year follow-up investigation

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ARTICLE INFO

Article history:
Received 3 August 2012
Received in revised form
1 February 2013
Accepted 1 February 2013
Available online 27 February 2013

Keywords:
Autonomy support
Motivation
Physical education
Teacher training

ABSTRACT

Objective: An earlier study (Cheon, Reeve, & Moon, 2012) showed wide-ranging benefits from a training program designed to help teachers be more autonomy-supportive toward students during PE instruction. The present study collected a follow-up data set to determine whether those earlier-observed benefits endured one year later.
Design: We used an experimentally-based 3-wave longitudinal design. The experimental group consisted of 8 PE teachers from the original teacher training study and their 470 middle- and high-school students; the control group consisted of 9 matched PE teachers and their 483 students. Dependent measures included 3 manipulation checks, 3 measures of student motivation, and 6 course-specific outcomes.
Method: Trained raters scored teachers' instructional behaviors at mid-semester, while students reported perceptions of their teachers' motivating style and their own course-related motivation and outcomes at the beginning, middle, and end of the semester. We tested our hypotheses using hierarchical linear modeling to account for the hierarchical structure of data in which repeated measures were nested within students who were nested within teachers.
Results: Compared to teachers in the control group, teachers in the experimental group were scored by raters and perceived by students as more autonomy supportive and less controlling. Their students consistently reported greater motivation and more positive outcomes than did the students of teachers in the control group. All 8 teachers in the experimental group reported being significantly more autonomy supportive than a year earlier.
Conclusion: Teacher- and student-related benefits from the earlier autonomy-supportive training program endured.

Physical education (PE) teachers prepare learning objectives and activities for their students and they deliver that instruction through the interpersonal context of a motivating style. Motivating style involves the tone of the teacher's sentiment and behavior while trying to motivate and engage students during instruction; it can be characterized within a bipolar continuum that extends from a highly controlling through a neutral style to one that is highly autonomy supportive (Deci, Schwartz, Sheinman, & Ryan, 1981; Reeve, 2009). When autonomy supportive, PE teachers motivate and engage students by adopting their perspective, by inviting, welcoming, and incorporating students' thoughts, feelings, and behaviors into the flow of instruction, and by supporting students' capacity for autonomous self-regulation, such as when they say, "Here is an opportunity to learn something about yourself—what do you think of it?"; when controlling, PE teachers motivate and engage students by pressuring them into thinking, feeling, and behaving in a teacher-prescribed way, such as when they say, "Hurry. Do it this way—just like I showed you. Now!" (Assor, Kaplan, & Roth, 2002; Assor, Kaplan, Kanat-Maymon, & Roth, 2005; Reeve, 2009; Reeve, Jang, Carrell, Jeon, & Barch, 2004). Motivating style is important because it predicts course-related outcomes, as students with autonomy-supportive PE teachers, compared to those with controlling PE teachers, show greater autonomous motivation, classroom engagement, physical activity, performance, and achievement (Chatzisarantis & Hagger, 2009; Cheon et al., 2012; Moustaka, Vlachopoulos, Kabitsis, & Theodorakis, 2012; Vansteenkiste, Simons, Soenens, & Lens, 2004).

Empirical research rather strongly supports two conclusions: (1) PE teachers can learn how to become significantly more autonomy supportive toward students during classroom instruction; and (2) the students of these trained PE teachers benefit in a variety of important ways (Chatzisarantis & Hagger, 2009; Cheon et al., 2012; Tessier, Sarrazin, & Ntoumanis, 2008, 2010). Together, these two

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http://dx.doi.org/10.1016/j.psychsport.2013.02.002

empirical conclusions show that PE teachers can, through their participation in teacher training programs, (1) transform their classroom motivating styles rather markedly away from traditionally controlling or neutral styles toward a highly autonomy-supportive style and, by doing so, (2) provide their students with a meaningfully-upgraded course experience that yields improved class functioning (e.g., greater engagement) and course outcomes (e.g., greater intentions for future physical activity).

To substantiate these claims, Table 1 lists the seven published studies that have carried out autonomy-supportive training programs (interventions) in the field of exercise promotion and physical education. Each study produced a significant treatment effect, and the table highlights the teacher- and student-based benefits (i.e., dependent measures) observed in each study. Though the studies varied in their samples, duration of training, research design, and dependent measures, they collectively support the conclusion that the interventions have been successful. Yet, none of the studies listed in Table 1 followed up these teachers after their participation in the autonomy-supportive intervention to assess the potential long-term benefits of the teacher-training program.

The question driving the present study was whether or not these positive training-induced benefits would endure if re-assessed one year later. This represents a crucial question in assessing the efficacy of these training programs because exercise instructors and classroom PE teachers generally receive a wealth of support during these interventions that is then discontinued. During the teacher training experience, participating teachers observe and interact with expert models in how to be autonomy supportive, set classroom goals to improve their instructional strategies, receive guidance and feedback on their progress to enact autonomy-supportive instructional behaviors, complete reflection-facilitating teaching diaries, and participate in group discussions to voice their concerns, identify potential obstacles, and share ideas and possible instructional strategies with their peers. Given such support, participants consistently have been able to revise their typically neutral or controlling motivating styles to become more autonomy supportive toward students. It remains an open question, however, as to whether the positive benefits of the training endure once the intensive support system is removed and teachers are effectively left on their own to instruct a new group of students.

To address our research question, we planned a one-year follow-up investigation. In the earlier study (Cheon et al., 2012), PE teachers collectively showed a wide-range of benefits after receiving a state-of-the-art intervention program. The teacher-training program was delivered over the course of an 18-week semester in three parts. In Part 1, PE teachers received a workshop experience on the nature of student motivation and teachers' motivating styles (i.e., what they are, where they come from, what outcomes they predict), classroom examples of autonomy-supportive instructional behavior, empirical evidence on the benefits of teacher-provided autonomy support, and a group discussion about the feasibility of, potential obstacles to, and recommendations on how to support students' autonomy during PE instruction. Part 2 took place 6 weeks later and after teachers had a first-hand opportunity to practice classroom-based autonomy support on a daily basis with their own students. It revolved around a group discussion that shared, critiqued, and refined PE-specific autonomy-supportive instructional strategies. Part 3 took place 6 weeks later and it too consisted of a group discussion centered around sharing and exchanging ideas on how to be autonomy-supportive during PE instruction. Teachers also completed a weekly journal activity.

The original Cheon et al. (2012) teacher-training program took place from February to early-July 2010 (semester 1 in the Korean school system). The plan of the present study was to revisit these

Table 1
Summary of all training intervention studies carried out with physical education teachers or exercise instructors on how to be more autonomy supportive toward students.

Reference citation	Sample	Duration of training	Research design	Benefits to teachers	Benefits to students
Chatzisarantis and Hagger (2009)	10 High-school PE teachers and their 215 students	5 Weeks	Quasi-experimental	Greater AS	Greater autonomous motivation Greater intention for PA Greater leisure time PA behavior
Cheon and Moon (2010)	1 Exercise instructor and his 60 university students	6 Weeks	Quasi-experimental	Greater AS	Greater autonomy, competence, and relatedness Greater autonomous motivation Greater future intentions for PA
Cheon et al. (2012)	19 Middle- and high-school PE teachers and their 1158 students	13 Weeks	Experimental	Greater AS Lesser CT Greater ASIBs	Greater autonomy, competence, and relatedness Greater autonomous motivation Lesser amotivation Greater classroom engagement Greater skill development Greater future intentions for PA Greater academic achievement
Edmunds, Ntoumanis, and Duda (2008)	1 Exercise instructor and her 56 university students taking an exercise class	9 Weeks	Quasi-experimental	Greater AS	Greater competence, relatedness Greater positive affect Greater exercise class attendance
Moustake, Vlachopoulos, Kabitsis, & Theodorakis (2012)	1 Exercise instructor and her 35 women taking a community-based exercise class	8 Weeks	Quasi-experimental	Greater AS	Greater autonomy, competence Greater autonomous motivation Lesser amotivation Greater vitality Greater exercise class attendance Greater exercise participation
Tessier et al. (2008)	5 Middle- and high-school PE teachers and their 96 students	8 Weeks	Experimental	Greater AS Greater verbal praise	n/a
Tessier et al. (2010)	3 Secondary PE teachers and their 185 students	4 Weeks	Pretest vs. posttest	Greater AS	Greater relatedness Lesser external regulation Lesser amotivation Greater collective engagement

Note. PE = physical education; AS = autonomy-supportive teaching; PA = physical activity; CT = controlling teaching; ASIBs = autonomy supportive instructional behaviors.