



ELSEVIER

Contents lists available at ScienceDirect

Human Movement Science

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



Small choices can enhance balance learning



Gabriele Wulf*, Nicole Adams

University of Nevada, Las Vegas, United States

ARTICLE INFO

Article history:

Available online 15 November 2014

PsycINFO classification:

2330

2343

3720

Keywords:

Autonomy support

Exercise

Fundamental psychological needs

Self-controlled practice

Motivation

ABSTRACT

The present study examined whether the learning of exercise routines would be enhanced by giving participants an incidental choice (i.e., exercise order). Two groups of participants were asked to perform three balance exercises. After watching a demonstration of each exercise, a choice group was allowed to choose the order of exercises, while yoked control group participants performed them in the same order as their choice group counterparts. To assess learning, a retention test was conducted 1 day later. The choice group had a significantly smaller number of errors (i.e., contacting the ground with the free leg to regain balance) than the control group. This finding indicates that performers' need for autonomy can be supported by giving them small choices – which in turn can positively affect the learning of balance exercises.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

Supporting people's fundamental need for autonomy (Deci & Ryan, 2000, 2008) has been shown to have positive consequences for motivation, general well-being, quality of life (e.g., Langer & Rodin, 1976), and learning (e.g., Chiviakowsky, Wulf, Lewthwaite, & Campos, 2012; Janelle, Barba, Frehlich, Tennant, & Cauraugh, 1997). The benefits of providing autonomy support – or giving individuals a sense of choice and allowing them to determine their own behavior – also extend to the exercise domain (for a review, see Teixeira, Carraca, Markland, Silva, & Ryan, 2012). For instance, exercisers'

* Corresponding author at: Department of Kinesiology and Nutrition Sciences, University of Nevada, Las Vegas, 4505 Maryland Parkway, Las Vegas, NV 89154-3034, United States. Tel.: +1 (702) 895 0938.

E-mail address: gabriele.wulf@unlv.edu (G. Wulf).

perceptions of autonomy have been found to be affected by fitness instructors' perceived interacting style (Puente & Anshel, 2010). Furthermore, individuals' motivation and adherence to exercise or rehabilitation programs has been shown to be related to the degree of autonomy support they experienced (Chan, Lonsdale, Ho, Yung, & Chan, 2009; Standage, Gillison, Ntoumanis, & Treasure, 2012). Interestingly, it is apparently sufficient for participant to *believe* that their preferences (for certain exercises) are being taken into account to increase their exercise adherence (Thompson & Wankel, 1980). Even a small and incidental choice can increase individuals' motivation to exercise. In a recent study (Wulf, Freitas, & Tandy, 2014), participants who were allowed to choose the order in which they wanted to complete four different exercises (e.g., jumping jacks, lunges) subsequently chose to do significantly more repetitions of each exercise than did control group participants who were asked to complete those exercises in a pre-determined order. Thus, giving participants a relatively trivial choice increased their exercise engagement.

In the present study, we followed up on that finding. We asked whether giving performers an incidental choice would also result in more effective learning of exercise routines. In the motor learning domain, self-controlled (i.e., learner-controlled) practice has consistently been found to lead to more effective learning than prescribed practice conditions. For example, if performers are given the opportunity to make decisions about the delivery of feedback (e.g., Chiviacowsky, Wulf, Laroque de Medeiros, Kaefer, & Tani, 2008; Janelle et al., 1997; Patterson & Carter, 2010), the use of assistive devices (e.g., Hartman, 2007; Wulf & Toole, 1999), or frequency of skill demonstrations (Wulf, Raupach, & Pfeiffer, 2005), learning is usually superior compared with yoked control groups (for reviews, see Sanli, Patterson, Bray, & Lee, 2013; Wulf, 2007). But in those studies, participants' choices are typically related to a task-relevant aspect (e.g., specific task information, performance feedback), or practice conditions such as the amount of practice (Post, Fairbrother, Barros, & Kulpa, 2014) or order of different tasks to be learned (Hodges, Edwards, Luttin, & Bowock, 2011). In contrast, in the current study, we gave participants one incidental choice. We asked them to perform three different balance exercises and, similar to Wulf et al. (2014), one group was allowed to choose the order of those exercises while another group was not. In contrast to the previous study, in which that choice positively influenced participants' willingness to exercise, we asked whether the *learning* of exercise routines might also be enhanced by having a choice. In a few previous studies (Hodges et al., 2011; Keetch & Lee, 2007), participants were able to decide in which order they wanted to practice different tasks. However, in those studies numerous practice trials were performed on each task, and choices about the task to be performed next – presumably as a function of previous performance – were made throughout the practice phase. In the present case, participants chose the order of three exercises only once, namely, before the beginning of practice. Subsequently, they completed five consecutive repetitions of each exercise in either the chosen order (choice group) or in a prescribed order (yoked group). To assess whether giving performers this relatively minor choice would affect their task learning, both groups performed a retention test 1 day after the practice phase.

2. Method

2.1. Participants

Twenty individuals (4 males) with an average age of 34.7 years ($SD = 14.05$) participated in this study. Half of the volunteers were university students, who were recruited from an undergraduate kinesiology class. The other half of the participants were recruited from a gym at which the experimenter worked as a personal trainer. Eighteen participants were right-foot dominant, and two were left-foot dominant. The study was approved by the university's institutional review board. All participants gave their informed consent, and they were unaware of the specific purpose of the study and their assignment to a certain group.

2.2. Apparatus, task, and procedure

Participants were randomly assigned to either a choice or control group in the order of their appearance in the laboratory. In both groups, participants performed 3 balance exercises (see below)

Download English Version:

<https://daneshyari.com/en/article/7292363>

Download Persian Version:

<https://daneshyari.com/article/7292363>

[Daneshyari.com](https://daneshyari.com)