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Czech validation of the self-regulation and self-efficacy questionnaires for learning

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Abstract

The authors present the findings of the second round Czech validation of the Self-Regulation Questionnaire (SRQ-CZ), originally developed by Brown et al. (1999) and the Self-efficacy Questionnaire for learning (SEQ), developed by Jakešová (2014). The sample consists of participants enrolled in the formal and informal education system in the Czech Republic (n = 1.244). EFA and CFA yielded a four-factor model for SRQ-CZ with 21 items, Alpha of .85 and a one-factor model for SEQ, 8 items, Alpha of .89. The analysis suggests that the general models representing self-regulation and self-efficacy for learning are a reasonable representation of the data.

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1. Introduction

Self-regulation is the ability to develop, implement, and flexibly maintain planned behavior in order to achieve one's goals (Miller & Brown, 1991). According to the foundational work of the researchers Kanfer, Miller and Brown, there are seven steps which must happen for behavioral self-regulation to occur: receive relevant information, evaluate the information and compare it to norms, trigger change, search for options, formulate a plan, implement the plan and assess the plan's effectiveness (which recycles to steps 1 and 2).

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Although this model was developed specifically to study addictive behavior, the self-regulatory processes it describes are meant to serve as general principles for behavioral self-control. The concept of self-regulation also overlaps with metacognition. Others even use the term interchangeably with metacognition. Increasingly, research is finding associations between young people's success in controlling their behavior and emotions, social competence, school success and, for example, healthy eating habits.

Self-regulation falls within the area of psychology, pedagogy, social cognitive theory and adjacent disciplines, and has been a part of research activity across all continents for the last fifty years. The diversity of theories and models is wide (cf. Boekaerts, Pintrich & Zeidner, 2005). The theory and research of self-regulation is, for example, developed in the field of alcohol abuse (Carey, Carey, Carnrike & Meisler, 1990; Chassin & De Lucia, 1996; Wills, Sandy & Yaeger, 2002), drug use (Baumeister & Heatherton, 2009), procrastination (Eerde, 2000; Sénécal & Vallerand, 1995; Motiea, Heidaria & Sadeghic, 2012), students' high drop-out and truancy rates (Veenstra, Lindenberg, Tinga & Ormel, 2010), and control of attention (Carver & Scheier, 2011). From the social cognitive point of view preferred by the authors, self-regulation is seen as the interaction of a triad of personal, behavioural, and environmental processes (Bandura, 1986). In this sense we think that self-regulation includes not only behavioural skills in managing environmental contingencies but also a sense of personal agency to enact these skills in the relevant contexts. Inner thoughts, feelings and actions that are planned, monitored and cyclically adapted according to the acquired feedback and goals are also included in the self-regulation process of behavior (Gavora, Jakešová & Kalenda, 2015).

So far, there has been no consensus on the exact number or the character of self-regulated phases. Carver and Scheier (1982) and Kanfer (1970) proposed a three-phase theory of self-regulation that includes self-monitoring, self-evaluation, and self-reinforcement. Miller and Brown (1991) built on Kanfer's model and expanded the number of processes involved in self-regulation to seven, while Carey, Neal and Collins (2004) provided a single-dimension solution. Common to all models, however, is the fact that deficits at any one stage may result in self-regulation difficulties.

In the current state-of-the-art, researchers are exploring not only the level of self-regulation in diverse population but also the various variables that influence the achieved level of self-regulation and the relation to other concepts. According to Bandura (1986) self-regulation strongly depends on self-efficacy beliefs. Perceived self-efficacy influences the level of goal challenge people set for themselves, the amount of effort they mobilize, and their persistence in the face of difficulties. Perceived self-efficacy is theorized to influence performance accomplishments both directly and indirectly through its influences on self-set goals (Zimmerman et al., 1992, 665). In addition to the relation to learning, self-regulated learners exhibit a high sense of efficacy in their capabilities, which influences the knowledge and skill goals they set for themselves and their commitment to fulfilling these challenges. This conception not only encompasses the cognitive skills emphasized by metacognitive theorists, but also extends beyond to include the self-regulation of motivation, the learning environment, and social supports for self-directedness (Zimmerman et al., 1992, 664).

The present study focuses on the adaptation of a self-regulation instrument and validation of an academic self-efficacy tool. We argue that quality research should be based on a valid and reliable tool. The core results of the adaptation and validation processes of the two tools are presented here, as well as an indication of the directions of future research.

2. Research methodology

Since no reliable or valid instruments existed for measuring self-regulation of behavior in the Czech educational environment and as developing a new questionnaire is very time-consuming, the authors' aim was to adopt an existing research instrument. When validating a questionnaire it is important that a sample is used that is as close as possible to the representative one of the population in which the instrument will be administrated. This criterion was met by using a large sample, as described below. The construct validity and reliability of the questionnaire were investigated. For this purpose, exploratory (EFA) and confirmatory (CFA) factor analyses were used. The internal consistency of the questionnaire and individual items was checked using Cronbach's alpha (α).

The instrument chosen for adaptation and adapted for the research population was **The Self-Regulation Questionnaire (SRQ)** developed by Brown, Miller and Lawendowski (1999). The SRQ is widely used in the

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