ARTICLE IN PRESS

pd
psicodidáctica

Revista de Psicodidáctica

Original

Testing the Relationships Between Global, Contextual, and Situational Motivation: A Longitudinal Study of the Horizontal, Top-down, and Bottom-up Effects☆

Juan L. Núñez* and Jaime León

Universidad de Las Palmas de Gran Canaria, Las Palmas de Gran Canaria, Spain

ABSTRACT

The hierarchical model of intrinsic and extrinsic motivation establishes three levels of generality to analyze human motivation (global, contextual, and situational). The dynamism of motivation is explained by means of the relations between the three levels. The purpose of this study is to test the reciprocal effects, top-down and bottom-up, between one motivational level and the adjacent level, as well as the stability of the global level (horizontal effect). A longitudinal design with six measurement time points across a 4-month interval was used. Participants were 142 undergraduate students. Results from path analysis using a Bayesian estimation method provided support for our hypotheses. Finally, the implications of the dynamic processes of influence among the hierarchical levels in academic setting are discussed.

© 2017 Universidad de País Vasco. Published by Elsevier España, S.L.U. All rights reserved.

Probando las relaciones entre la motivación global, contextual y situacional: un estudio longitudinal de los efectos horizontal, arriba-abajo y abajo-arriba

RESUMEN

El modelo jerárquico de la motivación intrínseca y extrínseca establece tres niveles de generalidad para analizar la motivación humana (global, contextual y situacional). El dinamismo de la motivación se explica de acuerdo a las relaciones entre estos niveles. El objetivo de este estudio es probar los efectos recíprocos, arriba-abajo y abajo-arriba, entre cada nivel motivacional y su adyacente, así como la estabilidad del nivel global (efecto horizontal). Se llevó a cabo un diseño longitudinal durante un periodo de cuatro meses. Los participantes fueron 142 estudiantes universitarios. Los resultados del *path analisis*, utilizando un método de estimación bayesiano, apoyaron las hipótesis planteadas. Finalmente, las implicaciones de los procesos dinámicos de influencia entre los niveles jerárquicos son discutidas en el contexto académico.

© 2017 Universidad de País Vasco. Publicado por Elsevier España, S.L.U. Todos los derechos reservados.

Introduction

The variety of interests and ages comprising the university educational stage, with the corresponding changes inherent to the life span, frequently causes difficulties maintaining an adequate learning level adapted to the demands of the educational phase. In addition, the dropout rates occurring in the university setting indicate that we are faced with a problem that should be addressed from different points of view. In Spain, an average of 19% of the students drop out of the university (Ministry Education, Culture

and Sports, 2013), whereas the average in the rest of the countries of the European Union exceeds 12%. Therefore, it is important to address a problem of this magnitude and to attempt to identify the elements that favor persistence in the academic setting. The self-determination theory (SDT) and the hierarchical model of intrinsic and extrinsic motivation (HMIEM) are two theories that provide a more holistic and dynamic explanation of human motivation, analyzing the motivational processes of change over time, and generating practical solutions to this issue. Hierarchical models propose that the stability of components varies according to their levels of generality (Shavelson, Hubner, & Stanton, 1976). The HMIEM uses this knowledge as a starting point to elaborate its own postulates.

Self-determination theory

Human reality is so complex that it needs a multidimensional explanation to address the greatest possible range of behaviors. Accordingly, SDT (Deci & Ryan, 1985, 2017), holds that there are different types of motivation to explain human behavior: intrinsic motivation, extrinsic motivation, and amotivation. These types of motivation are placed on a self-determination or autonomous continuum, ranging from self-determination to lack of control (Deci & Ryan, 1991, 2000). In academic context, the students who engaged in learning activities willingly, without expectative of reinforcement but just for the pleasure and satisfaction of learning new things would have an autonomous motivation, in contrast those who engaged in learning activities pressured by internal or external forces would have a controlled motivation (Deci, 1975; Ryan & Deci, 2000a).

Intrinsic motivation reflects the highest degree of self-determination and autonomous motivation. The students engage voluntarily in the learning process, that is, the individual is origin of his or her actions. This type of motivation is considered as a sign of competence and self-determination (Deci & Ryan, 1985; Ryan & Deci, 2000a). Intrinsic motivation promote high-quality learning and creativity (Ryan & Deci, 2000b). Recently, has been showed that is the only type of motivation that is consistently associated with academic performance over a period of one year (Taylor et al., 2014).

Extrinsic motivation reflects to doing something as a mean to an end because it leads to a consequence (Pelletier, Rocchi, Vallerand, Deci, & Ryan, 2013). It is a multidimensional construct in which there are different types of motivation from the lowest to the highest level of self-determination: external regulation, and introjected regulation, being the two controlled types of motivation; identified regulation, and integrated regulation, which are autonomous motivations (Ryan & Deci, 2000a). External regulation implies more controlled and less autonomous behavior, and refers to engagement in an activity to gain rewards or to avoid punishment. Introjected regulation refers to the behaviors that are internalized by the person, implying internalizing regulation but not accepting it as part of oneself. The behavior is energized by factors such as an avoidance of shame, contingent self-esteem, and ego-involvement. Identified regulation is more autonomous on this continuum, in which the individual values the behavior and considers it important. Such regulation leads to autonomous behaviors because the subject freely chooses to perform the action. However, the decision to participate in the activity occurs due to external benefits and not for the sake of the satisfaction inherent in the activity itself. Lastly, integrated regulation, in which there is coherence between the behavior and the needs of the self, is the most autonomous form of extrinsic motivation. Amotivation is the last concept postulated by SDT, referring to the lack of intentionality and, therefore, the absence of motivation, either intrinsic or extrinsic. Amotivated people have feelings of incompetence, helplessness, and loss of control (Deci & Ryan, 1985; Vallerand & Ratelle, 2002).

The hierarchical model of intrinsic and extrinsic motivation

The HMIEM builds its hypotheses on SDT in order to explain the organization among constructs at different levels of generality. HMIEM is a model that allows the holistic comprehension of motivation within the educational setting. In addition, this model explains the changes in motivation occurring in the individual over time. For this purpose, it establishes a vertical hierarchy of human motivation. Accordingly, the different types of motivation (i.e., intrinsic, extrinsic, and amotivation) can be analyzed as a function of three levels of generality: global, contextual, and situational.

The highest level is the so-called global level. At this level of the hierarchy, the individual has developed a general motivational orientation to interact with the environment intrinsically, extrinsically, or amotivationally. Motivation at the global level is the most stable, acting as a personality trait. The next level is the contextual level. The word "context" is used to refer to a sphere of human activity and, although there are different contexts in an individual's life, research has revealed that the three most important are: education, leisure, and interpersonal relations (Blais, Vallerand, Brière, Gagnon, & Pelletier, 1990). Individuals develop moderately stable motivational orientations toward each context, in which social factors may have an impact. Contextual motivation is less stable over time, compared to global motivation (Guay, Mageau, & Vallerand, 2003). Finally, the situational level is the most specific. The study of motivation at the situational level is an attempt to understand why individuals engage in a concrete activity at a given time. It is assumed that motivation at this level is unstable due to its enormous sensitivity to environmental factors.

Distinguishing these three hierarchical levels is important in order to address the determinants and consequences of behavior. This is the horizontal organization of the hierarchical model. At each of the three levels of generality, motivation (i.e., intrinsic, extrinsic, amotivation) is determined or influenced by social factors that are present in the immediate context of each person. Finally, the horizontal sequence ends with the motivational consequences. In other words, the consequences of each type of motivation are different and they occur at each of the three levels of generality. These consequences can be affective, cognitive, and behavioral. At all levels of generality, intrinsic motivation and the types of more self-determined extrinsic motivation generate more positive and healthy consequences. There is sufficient empirical support for this assumption, such as that provided by the study of Vallerand and Blanchard (1998).

This distinction of hierarchical levels is essential to understand a student's motivation at a certain time and to propose the most adequate intervention in each case. For example, it is important to identify whether individuals study to obtain rewards or avoid a punishment in order to establish a series of strategies to lead them to study in the future in a more self-determined way. If only their global motivation is attended to, the wrong strategy might be chosen and relevant aspects might be neglected.

The three levels of generality are dynamically related. The study of the elements underlying the relation among the diverse levels leads to better understanding the changes in motivation an individual may undergo over time (Vallerand, 2007). Thus, motivation at one level of the hierarchy may affect motivation at another level. Top-down effects (TD) refers to the influence of motivation of a higher level on the motivation of a lower level (e.g., global on contextual motivation or contextual on situational motivation). In addition, motivation of a lower level can influence the motivation of a higher level, thus revealing the bidirectional relation existing