Psicología Educativa

The effect of skill types and competition level on the functions of observational learning in athletes

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ABSTRACT

The aim of the present study was to investigate the effects of skill types (open and closed) and competition level (elite and non-elite) on the functions of observational learning in athletes. To fulfill the objectives of the study, 247 Taekwondo athletes volunteered to answer the Functions of Observational Learning Questionnaire (FOLQ). Results of 2 (skill level) × 2 (skill types) MANOVA showed that the athletes in closed skills use the skill and strategy functions more significantly than the athletes in the open skills, whereas the open skill athletes use the performance function more. Moreover, the elite athletes use all the three functions of the observational learning more than non-elite athletes. In addition, the interactive effect of skill types and competition level on the functions of observational learning was significant ($p < .05$). The study also showed that the effect of skill types on the functions of observational learning is stronger than the effect of the competition level.

El efecto de los tipos de destreza y del nivel de competición en las funciones de aprendizaje observacional en atletas

RESUMEN

El objetivo del presente estudio ha sido investigar los efectos de los tipos de destreza (abierta y cerrada) y del nivel de competición (élite y no élite) en las funciones del aprendizaje observacional en atletas. Para alcanzar los objetivos del estudio se contó con 247 atletas de Taekwondo que contestaron voluntariamente al Cuestionario de Funciones de Aprendizaje Observacional (FOLQ). Los resultados de un ANOVA 2 (nivel de destreza) x 2 (tipos de destreza) muestran que los atletas con destrezas cerradas utilizan las funciones de destrezas y estrategias más significativamente que los atletas con destrezas abiertas, que se sirven más de la función de desempeño. Además, los atletas de élite utilizan las tres funciones del aprendizaje observacional más que los que no son de élite. Por otra parte, fue significativo el efecto interactivo de los tipos de destreza y de nivel de competición en las funciones de aprendizaje observacional ($p < .05$). El estudio mostró igualmente que el efecto de los tipos de destreza en las funciones de aprendizaje observacional es superior al del nivel de competición.

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Learning a movement skill is often comprised of information transferred from teachers to learners, one of whose most common methods is carried out via observation (Bandura, 1986; McCullagh & Meyer, 1997). In other words, observational learning is a process in which the observers set their motion as a result of a movement which was observed (McCullagh & Davis, 2001). Numerous studies have emphasized the advantages of observational learning (Adams, 1986; Carroll & Bandura, 1985, 1987, 1990; Orlick, 1986). Ashford, Bennett, & Davids (2006), in a meta-analysis, reviewed studies on observational learning and revealed that observational learning is even more effective than body exercise.

One of the aspects of observational learning, which is usually ignored, is the role of task or movement that should be learned. According to Gentile (2000), what happens during the learning process is highly dependent on the task. McCullagh and Davis (2001) suggest the use of movement tasks categorization system, which may be influential on the learning process. Various categories have been defined regarding the movement skills and tasks, some of whose simple forms include the categorization based on the movement requirement of the task (discrete, continuous, and serial) and perception features of the task (open or closed) (Schmidt & Lee, 2011).

Cumming, Clark, Ste-Marie, McCullagh, & Hall (2005) have demonstrated a new approach regarding the observational learning. In their opinion, nowadays one should look at the observational learning from its functions' viewpoints. For this purpose, they designed the Functions of Observational Learning Questionnaire (FOLQ). This questionnaire evaluates three functions of observational learning in athletes, including skill, strategy, and performance. The skill function highlights how athletes acquire the execution pattern of motor skills through observation (e.g., learning how to execute a free-throw in basketball). The strategy function refers to how athletes observe and learn to develop game strategies and motor routines (e.g., gaining an understanding of routines in Poomsae). The performance function identifies how athletes learn to reach optimal arousal and mental states through observation (e.g., learning to focus one's attention on the batter's box in baseball). Skill and strategy functions have a cognitive role and performance function has a motivational function (Cumming et al., 2005). Various researchers have used the FOLQ to examine athletes' general observational learning use, as well as their differences according their gender, sport type, and competitive level (Cumming et al., 2005; Law, 2008; Law & Hall, 2009; Hall et al., 2009; Sunderland, 2008; Wesch, Law, & Hall, 2007). In the following parts, the study will review studies that assessed the effect of competition level and skill types on the functions of observational learning.

Competition Level

Cumming et al. (2005), in their preliminary study which led to designing the FOLQ, attempted to investigate the effects of competition level on the observational learning functions. In their study, which was performed on 953 athletes (462 male and 483 female, 8 unreported), 338 athletes determined their competitive level as recreational, 161 participants were at the club level, 65 others were at the provincial level, 302 of them were at the varsity level, and 70 individuals determined their competitive level as elite. Cumming and her colleagues did not find any significant differences among the various levels of observational learning functions in the athletes who participated in the study. Wesch et al. (2007) compared 642 athletes (312 recreational and 330 varsities) and concluded that there is a significant difference between the various skill levels. The varsity athletes who had participated in their study used the skill, strategy, and performance functions more than the athletes categorized in the recreational level did. Additionally, Sunderland (2008) studied the

functions of observational learning in athletes and concluded that there is a significant difference between expert and novice athletes only in the skill function and the difference between expert and novice athletes in the strategy and performance functions was not significant. Hall et al. (2009), with the aim of analyzing the usage of observational learning and imagery and their relationship with self-efficiency in athletes, showed that there is no significant difference between elite and non-elite athletes in using the functions of observational learning. This inconsistency highlights one of the challenges of employing competitive level as a proxy measure for athletes' skill level or sport expertise. In questionnaire-based studies examining psychological skill use, athletes are typically asked to self-report on their competitive level according to a hierarchy of recreational, provincial/state, varsity, national, or international level, and differences in their psychological skill use are then discussed in terms of these categories, or with combination of categories (e.g., elite vs. non-elite). There may be discrepancies among athletes within a single category according to age and years of sport experience, both of which are typically considered by researchers. More importantly however, there may be significant discrepancies in athletes' actual skill level within a single category (Gregg & Hall, 2006; Law & Hall, 2009).

Skill Types

Cumming et al. (2005) in another part of their research investigated the observational learning functions between the athletes of independent and interactive sports. They observed that there is a significant difference between independent and interactive sports in use of skill function, in such a manner that athletes in independent sports use this function more than that of those in interactive sports. A significant difference was also seen in the performance function, highlighting that athletes in independent sports have used this function more than those in interactive sports. They also noted that the extent of the observed effect is very small and the results of this part of the study should be used and interpreted carefully. In another research by Wesch et al. (2007), the effect of sport types on the functions of observational learning in athletes of individual and team sports was investigated. They concluded that athletes in individual sports use the skill function more than athletes in team sports. This is while athletes in team sports use the strategy and performance functions significantly more than athletes in individual sports. The study of Sunderland (2008), which was on the determination of the difference between athletes in independent and interactive sports, is also indicative of a significant difference between the independent and interactive sports in using the functions of observational learning. According to the results of the study, athletes in independent sports used the skill function more than the athletes in interactive sports. Moreover, athletes in interactive sports used the strategy function more than those in independent sports. There was also no significant differences between the interactive and independent sports in using the performance function. Hall et al. (2009) further compared the observational learning functions between team and individual sports and revealed that the athletes in team sports used the skill function more than the athletes in individual sports.

One possible explanation is based on the individual sports that were examined in the above-mentioned studies. Individual athletes were competing in sports such as golf, tennis, figure skating, and swimming where there usually are a number of athletes practicing at the same time. Thus, there is a considerable opportunity to observe others perform. Moreover, these sports place a great emphasis on the proper form, which is one aspect of performance that can be readily acquired by watching others (Sidaway & Hand, 1993; Wesch et al., 2007; Whiting, Bijlard, & Den Brinker, 1987).