The use of strategies in motor learning:
Validation of a new questionnaire

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Analyzing cognitive learning, strategies are an important topic of psychological research since many years. On the majority, studies are focussed on the relation between the use of learning strategies and academic achievement (e.g., Artelt, 2006; Zimmerman & Schunk, 2001) and the development and/or evaluation of strategy trainings (e.g., Schmitz, 2006). Numerous assessment procedures are available, mainly in the form of self-report questionnaires (for a current review: Spörer & Brunstein, 2006). By contrast, researchers in the field of motor learning has ignored so far this crucial aspect of learning. Thus, we developed a questionnaire to measure motor learning strategies. Based on the conceptions of psychological measures, five groups of strategies are differentiated: (1) Cognitive strategies, (2) Meta-cognitive strategies, (3) Management of internal resources, (4) Management of external resources, and (5) Motor strategies. Each group of strategies is measured by one subscale. Altogether, the instrument, named “StraBL” (abbreviation of “strategies of motor learning” in german), contains of 35 items.

Using hypothetical learning situations, the StraBL questionnaire was evaluated in two studies.

Study 1: The first study was conducted to test the factorial validity of the questionnaire. A sample of 170 university students (92 men, 78 women; \(M = 24.2\) years) imagined how to learn skiing and then completed the StraBL inventory. An exploratory factor analysis led to a 5-factor solution with meaningful and relatively high (\(\geq .50\) for 31 items) item-factor correlations. This solution explains 53.2% of total variance. Further evidence of validity is provided by correlations between the use of learning strategies and goal orientations. The internal consistency (Cronbach) of the subscales ranged between \(\alpha = .78\) and \(\alpha = .84\).

Study 2: According to psychological research, the use of learning strategies depends on the learning context. The aim of this study was to examine if the strategies measured by the StraBL questionnaire are also context-specific. 240 university students (120 men, 120 women; \(M = 24.4\) years) learned hypothetically motor skills from different sports (swimming, athletics, skiing, table tennis, gymnastics, golf) and then responded to the StraBL questionnaire. The results revealed that most of the strategies (23 of 35) were used differently, depending on the sport skill which was learned. For example, the strategy “I practice single parts of the skill” was frequently used to learn athletic skills, but very rarely to learn golf or swimming. Thus, it seems that strategies of motor learning are related to the learning context as strategies of cognitive learning are. This argues for the (construct) validity of the StraBL questionnaire.

The present instrument may be useful for research in sport psychology. However, in further studies it should be applied not only to university students but also to other groups of adults learners.

Key References