

3.1.23 Differential Learning in Basketball

Schönherr, T., & Schöllhorn, W.I. University of Münster, Germany

Representatives of the traditional basketball literature like Krüger/Niedlich 1985 assume that learning a new motor behaviour mainly depends on the number of trials and the reduction of the degrees of freedom. When we consider that an identical repetition of a movement is nearly impossible (Schöllhorn, 1999), the whole process seems to be doubtful. In the current study the traditional way of motor learning is compared with an alternative approach, the differential learning approach (Schöllhorn, 1999).

In a classical pre – posttest design two basketball groups with low or less experience realized a special four week motor learning program (one lesson per week á 30 minutes) to improve their skills in free throwing. The first group consisted of 14 pupils from a regular public school with an average age of 12,57 years. The average age of the second testgroup was a little bit higher (13,04y). In the pretest both groups passed the american AAHPER test in basketball. Afterwards the first testgroup participated in a special throwing training based on the traditional literature (Krüger & Niedlich, 1985) with high numbers of repetitions and instructions in order to reduce the errors (degrees of freedom). In contrast the training program of the second group was based on the alternative approach called differential learning. During the whole four weeks no throwing exercise was repeated twice and the degrees of freedom were systematically increased. The statistic analysis was done by the Mann Whitney Test.

	pretest (points)	posttest (points)
testgroup 1 (classical)	$\bar{x} = 35,36$	$\bar{x} = 38$
testgroup 2 (differential)	$\bar{x} = 38$	$\bar{x} = 52$
Significance	n.s. (p = .42)	h.s. (p = 0,003)

Tab. 1: Scores of the AAHPER test in basketball for the two different training groups.

Because of the statistic equivalence of both groups before practice (tab.1), the results of the first study shows that the improvements of the differential training group must be connected with the training contents. Within the learning process increasing the degrees of freedoms seems to be more effective than decreasing them. Whether the acquired advantages are more stable over time or what kind of effects occur after longer training periods and in different levels demands for further research. However, the results demonstrate a high effectivity of the differential learning approach, especially for teaching in schools with limited time.

Key References

Krüger, A., & Niedlich, P. (1985). Basketball. Reinbek: Rowohlt.

Schöllhorn, W. (1999). Individualität - ein vernachlässigter Parameter? Leistungssport, 2, 7-12.