Research Note

Mental Practice —
Does it Work in the Field?

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The topic of mental practice has been given considerable attention in the sport psychology literature, as evidenced by the number of reviews on the subject (Corbin, 1972; Feltz & Landers, 1983; Feltz, Landers, & Becker, 1989; Oxendine, 1968; Richardson, 1967a, 1967b, 1980). Moreover, reviews show that mental practice, especially when combined with physical practice, facilitates motor performance. Unfortunately, few of the studies cited in these reviews were conducted in actual field contexts using subjects who learned actual sport skills, under the same conditions and time periods in which sports activities are typically taught. Instead, novel motor tasks have been employed in laboratory settings or short-term pseudofield studies have been conducted. There is a need, then, to examine the influence of mental practice on the acquisition of sport skills in the actual contexts in which they are taught. The present investigation was designed to meet this need.

Not only are more externally valid mental practice investigations needed but the role that individual factors play in mental practice should be further explored. In particular, the athlete’s imagery ability is thought to be an important factor influencing the imagery/performance relationship (Smith, 1987). Subjects who have the ability to better control their images and produce more vivid images are expected to produce superior performances.

Given the above concerns, this investigation was designed to examine the effectiveness of visual mental practice on the learning of a complex physical skill in an actual sport setting. The influence of imagery ability on performance was also examined.

Method

Subjects

Seventy-eight subjects were classified as novice or experienced trampolinists on the basis of their experience in the sport. Those with more than a year of formal coaching were designated experienced (n=39) and those with no formal coaching experience were designated novice (n=39). Subjects were drawn from students

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taking elective classes in trampolining as part of the practical work for their degree at the School of Physical Education, University of Otago \((n=36)\), and from a local trampolining club \((n=42)\).

These two groups were then divided into an experimental group \((n=39)\) and a control group \((n=39)\), both of which attempted to learn, or improve, three skills over each of three 6-week training periods. Eight subjects were eventually dropped from the study for two reasons: (a) four subjects did not complete the experimental requirements of the study, one because of injury and three because their attendance at the experimental sessions was considered inadequate; (b) four subjects were too similar on the criteria of imagery ability and experience (the subjects were experienced and reported high imagery) and could therefore not be paired as required by the experimental design.

The instruments used to assess imagery ability were the Vividness of Visual Imagery questionnaire \((VVIQ: \text{Marks}, 1973)\) and the Vividness of Movement Imagery questionnaire \((VMIQ: \text{Isaac, Marks, & Russell}, 1986)\). These questionnaires have high reliability, \(r=.74\) and \(r=.76\), respectively. The subjects were classed as either high or low imagers according to the sum of the rating scale responses used in both the VVIQ and VMIQ, on each subject's first response to the questionnaire, in accordance with Marks \((1973)\). This placed the subjects in the top or bottom half of the distribution. The imagery grouping was unknown to the experimenter until after the experimental period, to prevent bias in the treatment of subjects, demand characteristics, and experimenter effects \((\text{Marks}, 1983)\).

**Skills and Procedures**

One set of three skills was chosen for each of the novice and experienced groups that fulfilled the requirements of trampolining skills, in that each included one or more of the elements of position, rotation, and twist. Each set increased, by equal increments, in the degree of difficulty from the first to the last skill. The experimental and control groups were treated identically during training, apart from the content of the mental task during the 5-min intervention period that occurred in each session.

At the first practice session the skill was demonstrated by an elite performer of international standing who was not otherwise part of the study. At each of the sessions held over the three 6-week periods, the experimental group physically practiced the trick for 2-1/2 minutes. This was followed immediately by 5 minutes of mental practice. A further 2-1/2 minutes of physical practice followed the mental practice.

**Mental Practice Task.** The diagrams of the skills to be learned (Figures 1 and 2) were used as the basis for mental practice. These diagrammatic representations were taken from the performance of the world champion and can therefore be considered an appropriate model. The following instructions regarding mental practice were given at each session and were based on the work of Twining \((1949)\):

- I want you to imagine yourself doing this skill (the diagram you have).
- Try to see each of the stages of the skill.
- Try to imagine yourself doing the exact things shown in the diagram.
- Now quietly concentrate.
- Do not talk.
- I will stop you in 5 minutes.