



**Dr. Andreas Bund (University of Darmstadt)**

## **Self-controlled learning of the forehand topspin stroke in table tennis**



**Third World Congress of  
Science and Racket Sports -  
Eighth International Table Tennis  
Federation Sports Science Congress**

**PARIS, May 17-19th, 2003**



# Content

Introduction

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- 1 Introduction: Self-Controlled learning
- 2 Method: Participants, Task, and Procedure
- 3 Results
- 4 Discussion





# Self-Controlled Learning

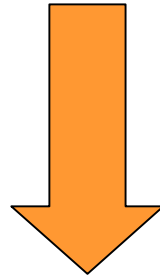
Introduction

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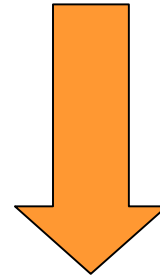
Results

Discussion

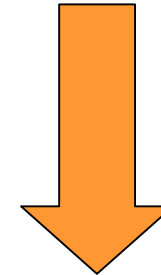
Learners control their Learning Process actively!



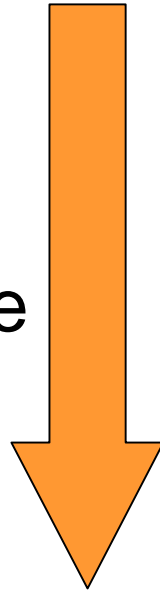
Metacognitive



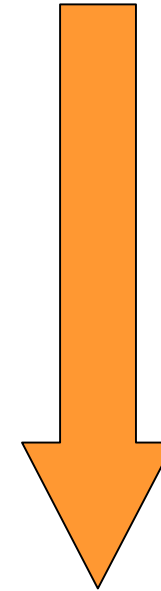
Cognitive



Motivational



Behavioral



Emotional

Using of Learning Strategies !





# Questions

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- 1 | Benefits of Self-Controlled Learning during the Learning of a complex Motor Skill?
- 2 | Individual Preferences in Self-Controlled Learning?





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# Participants and Task

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## Participants

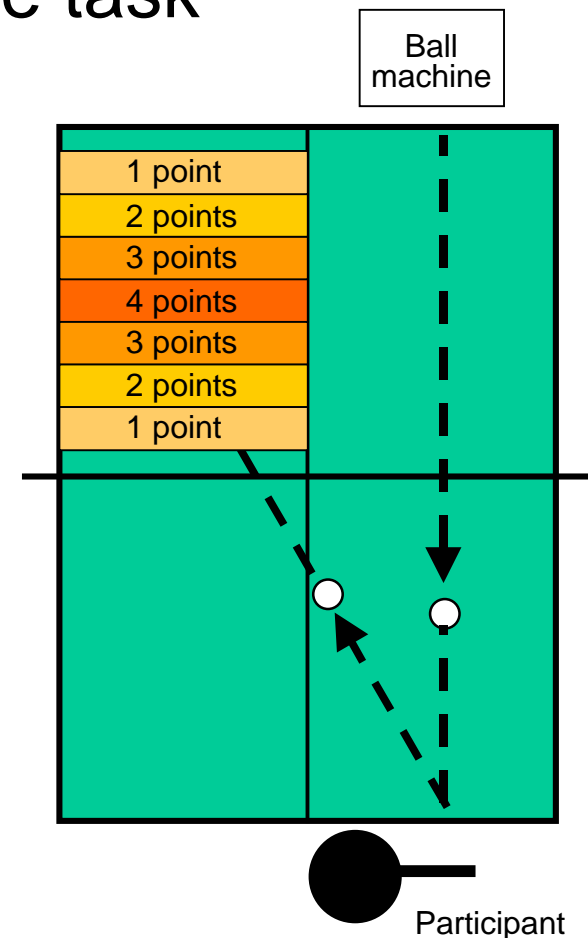
N = 52 Students (men = 32, women = 20)  
without experience with the task



## Task

Forehand Topspin Stroke

- Accuracy (Target Zone)
- Form (Experts Rating)





# Experimental Groups and Procedure

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PRACTICE  
CONDITION

Preferred  
(Instruction)

Non-Preferred  
(Variability of  
Practice)

SELF-CONTROLLING

yes

no

SC+

n=13

YO+

n=13

SC-

n=13

YO-

n=13

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Pretest ▶ Practice Phase ▶ Early Retention ▶ Late Retention



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# Accuracy Scores

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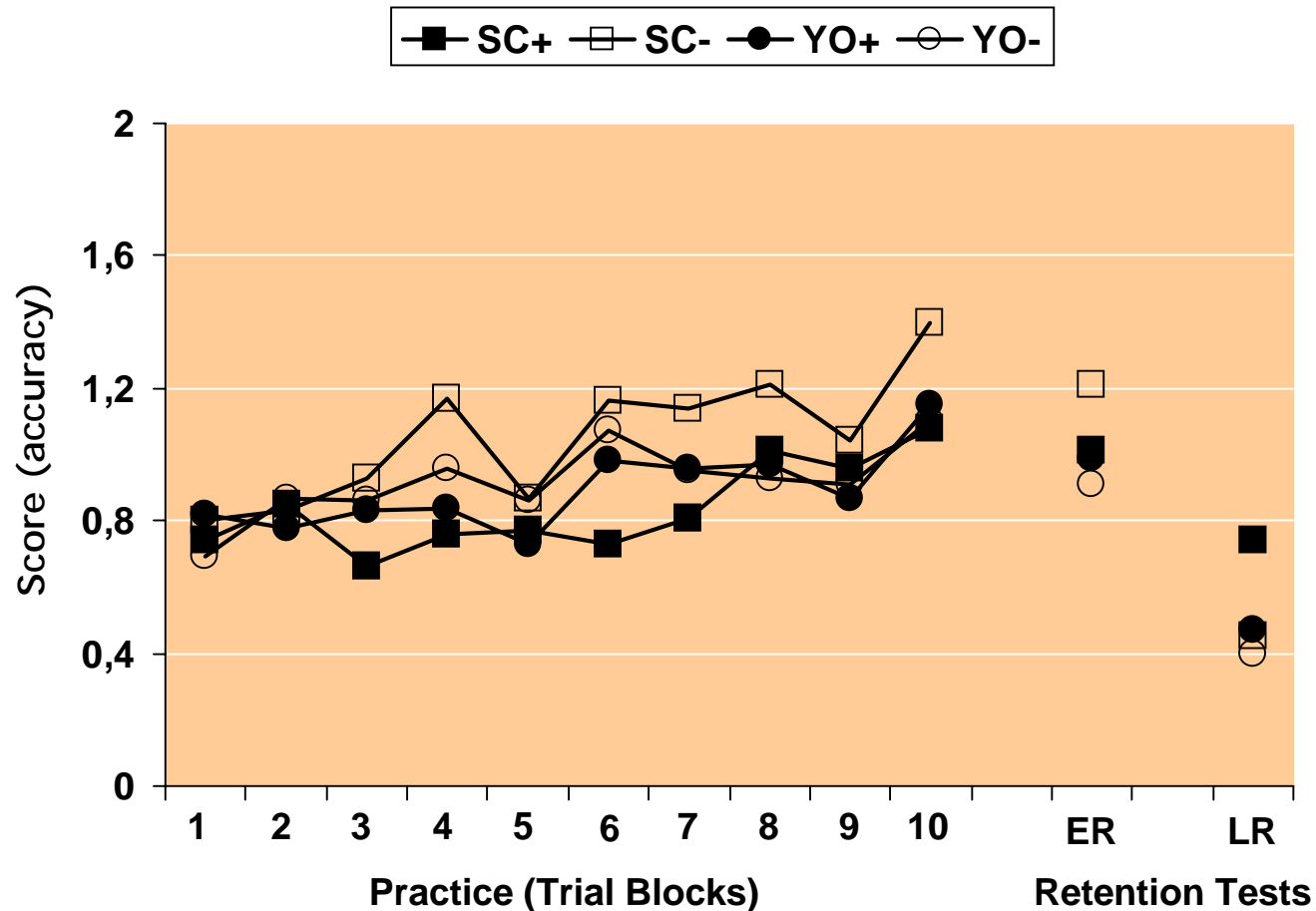


Figure 1. Accuracy Scores of the Experimental Groups during Practice and Retention. ER = Early Retention; LR = Late Retention.



# Form Scores

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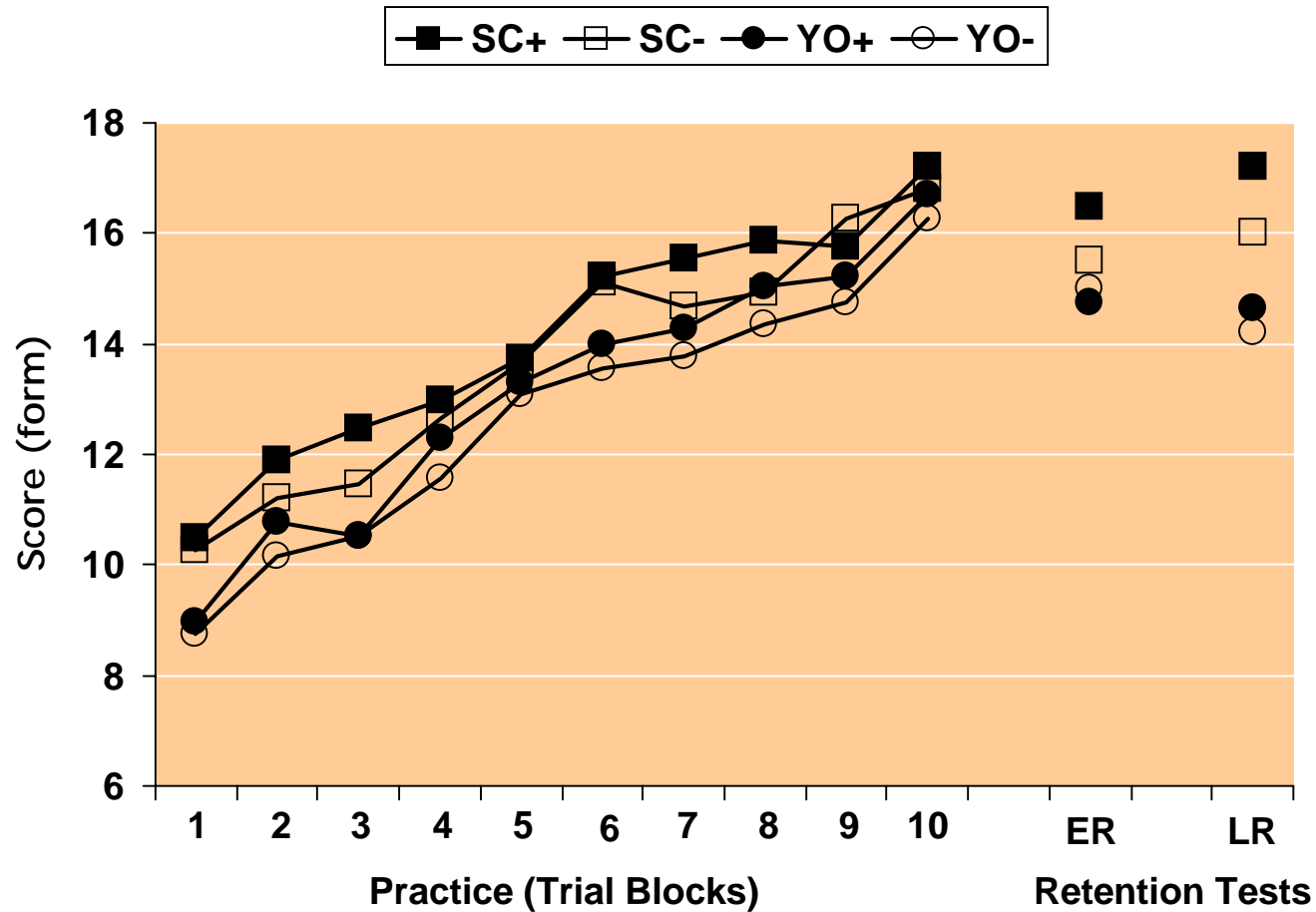


Figure 2. Form Scores of the Experimental Groups during Practice and Retention. ER = Early Retention; LR = Late Retention.



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# Conclusions and Explanations

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- Self-Controlled Learning has a beneficial Effect on Learning a complex Motor Skill
  - Individual Preferences seem to be irrelevant for the Effectiveness of Self-Controlled Learning
- 
- „Higher“ (cognitive, motivational) Processes
  - Opportunity to use individual (=more tailored) Learning Strategies



# Finally ...

Introduction

Method

Results

Discussion



**Thank you for  
your attention !!!**