EPHE 245

How We Improve Learning:
Distribution and Randomization
of Practice

Monday, October 10th
Thanksgiving

Thursday, October 13th
Variable and Part Practice

Monday, October 17th
Midterm One

Administration
STUDY!
No official office hours for Midterm 1

How We Can Improve Learning

Massed vs Distributed Practice

Practice Scheduling

One Week

Practice Day | Practice Day | Practice Day | Practice Day | Practice Day | Practice Day

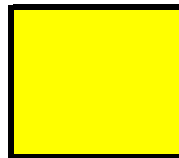Two Weeks

Practice Day

Practice Day

Practice Day
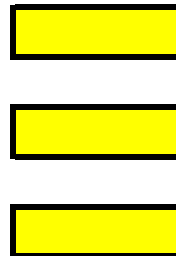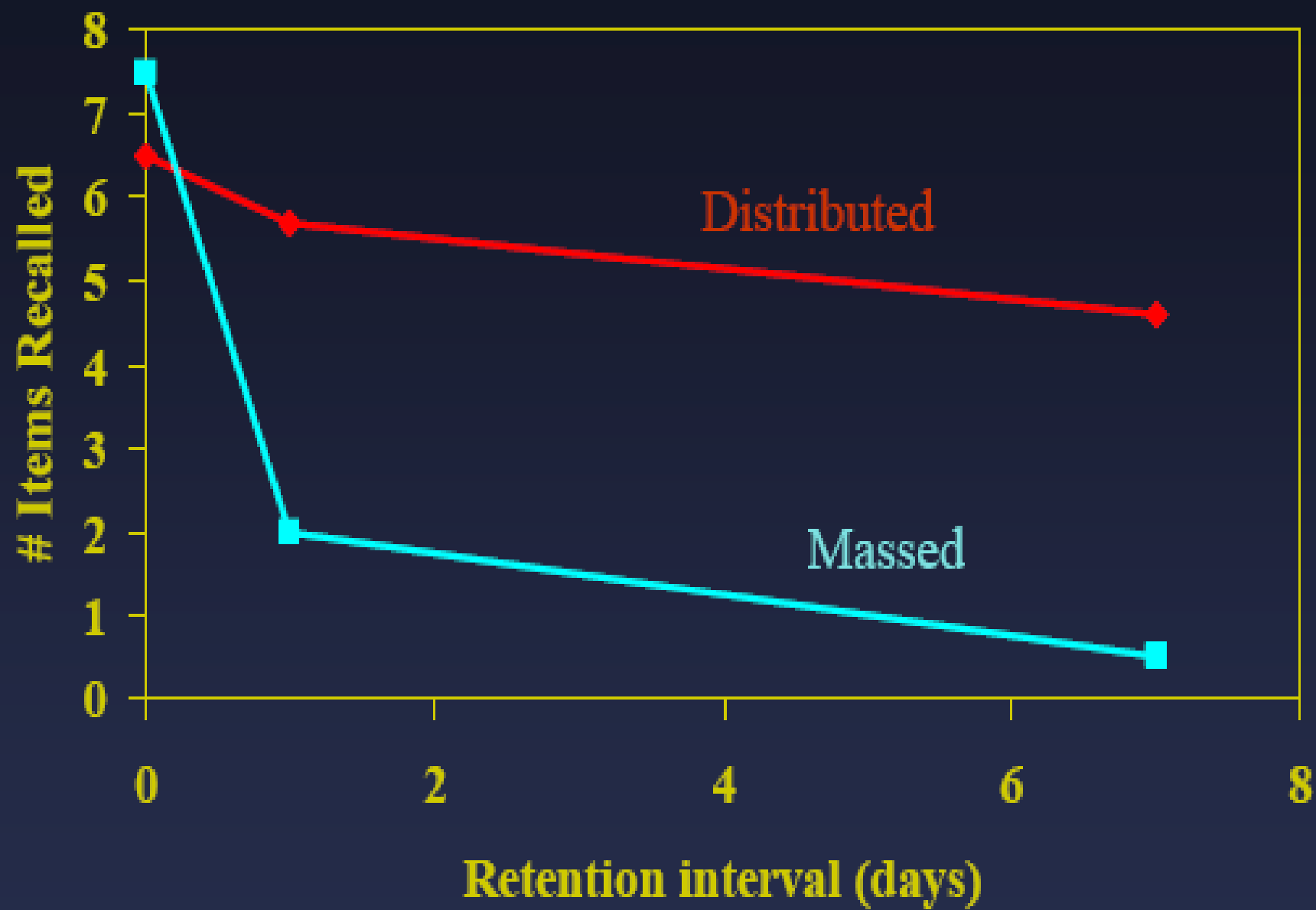
Practice Day

Practice Day

Practice Day

Drill Scheduling

10 mins

10 mins

10 mins

10 mins

10 mins

10 mins

10 mins

10 mins

Tenet One

A *distributed* practice schedule does not mean less overall time. The total amount of practice time MUST be the same as with a *massed* schedule.

Tenet Two

The length of distributed practice is a continuum. One 30 minute drill could be spilt in 3 x 10 minutes, 6 x 5 minutes, or even 15 x 2 minutes.

Tenet Three

The rest period for distributed practice can contain practice of another skill, but only if the GMPs of the two skills do not overlap.

Tenet Four

Distributed practice benefits are not physiological – time away from the practice = consolidation to occur. Think of it as "neural rest".

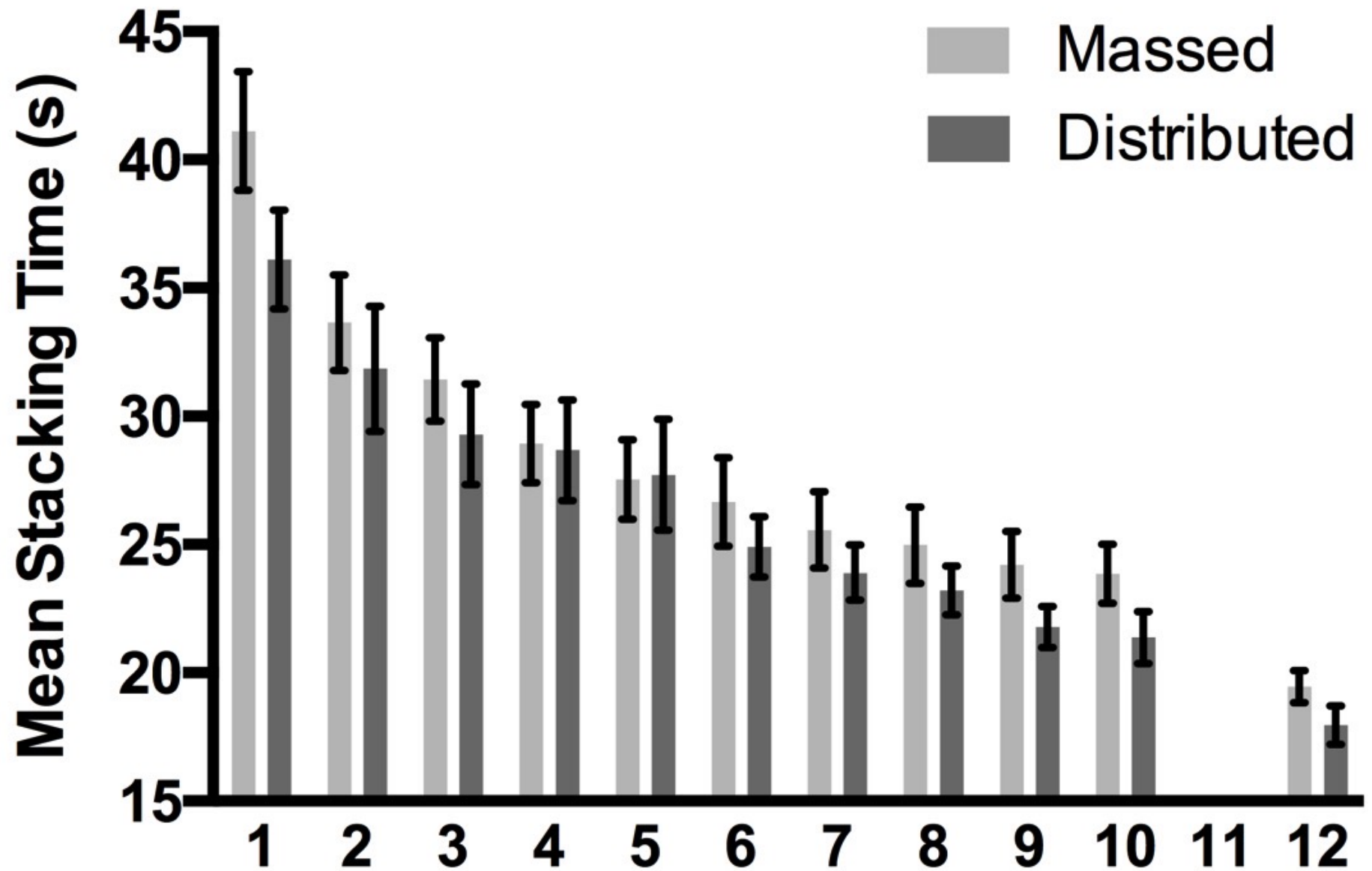# Evidence for Massed vs Distributed Practice Effects

Balance Tasks

Best performance on a Balance Board for Group that Practiced 57 % of 30 minute block (vs 20, 30, 40, 57, 77 %)
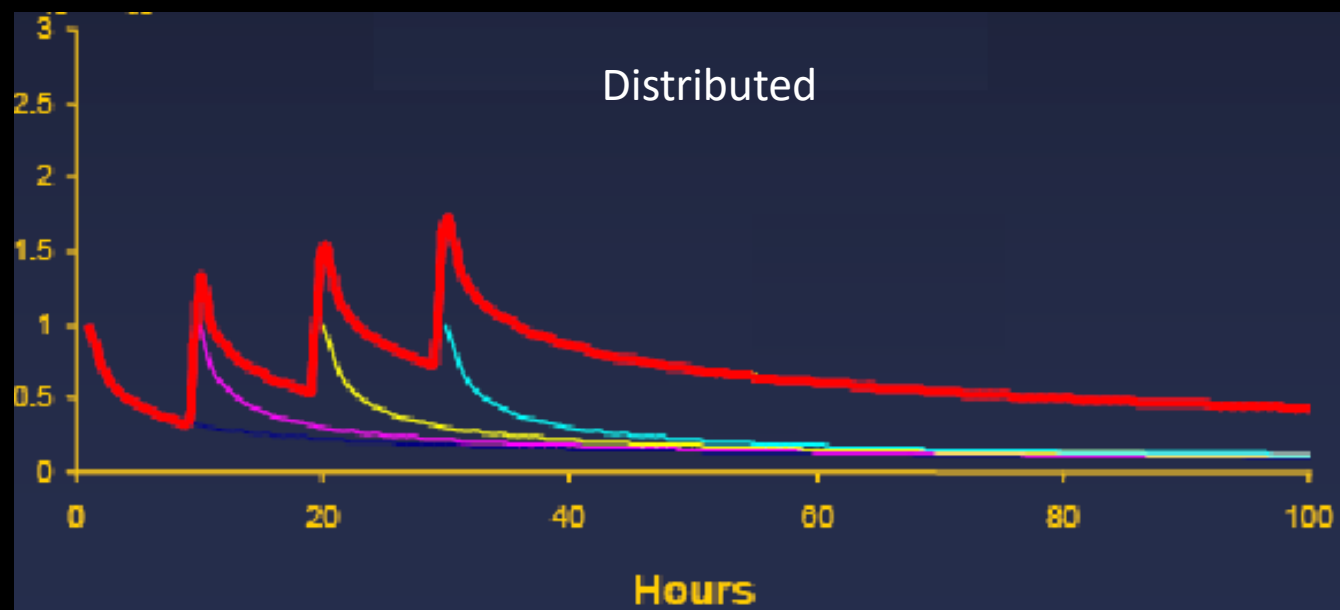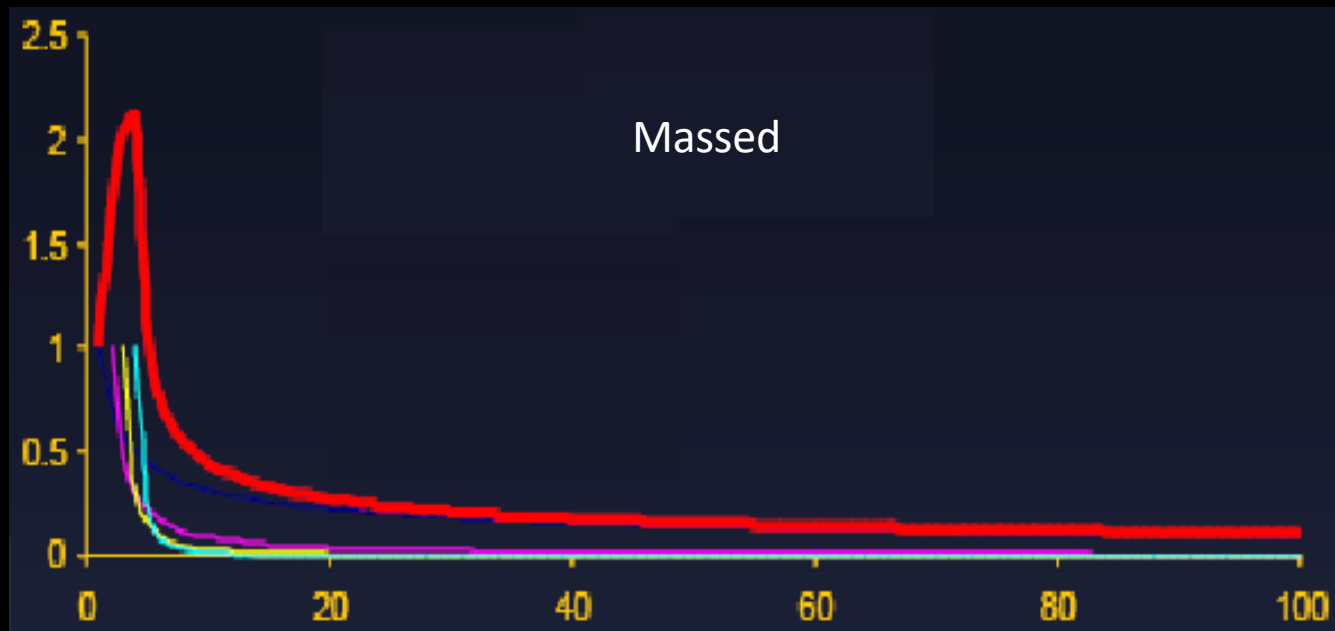
Graw (1968)

Postal Workers

12 weeks x 1 hour more effective than 3 weeks x 2 per day x 2 hour practice

Baddeley and Longman (1978)

Massed

Distributed

Hours

What is the optimal number of practices per week and optimal practice length?

IN MOST CASES YOU WILL BE CONSTRAINED BY OTHER FACTORS!

An idea for distributed practice...

Balance practice with drill days, conditioning days, team focused days...

How We Can Improve Learning

Blocked and Random Practice

30 minutes, Forearm Pass

30 minutes, Setting

Random vs Blocked Practice

Blocked

Random

Contextual Interference

Shea & Morgan (1979)

Task: Arm Movement Pattern

Blocked : task A then task B then task C

Random : random schedule involving A, B, and C
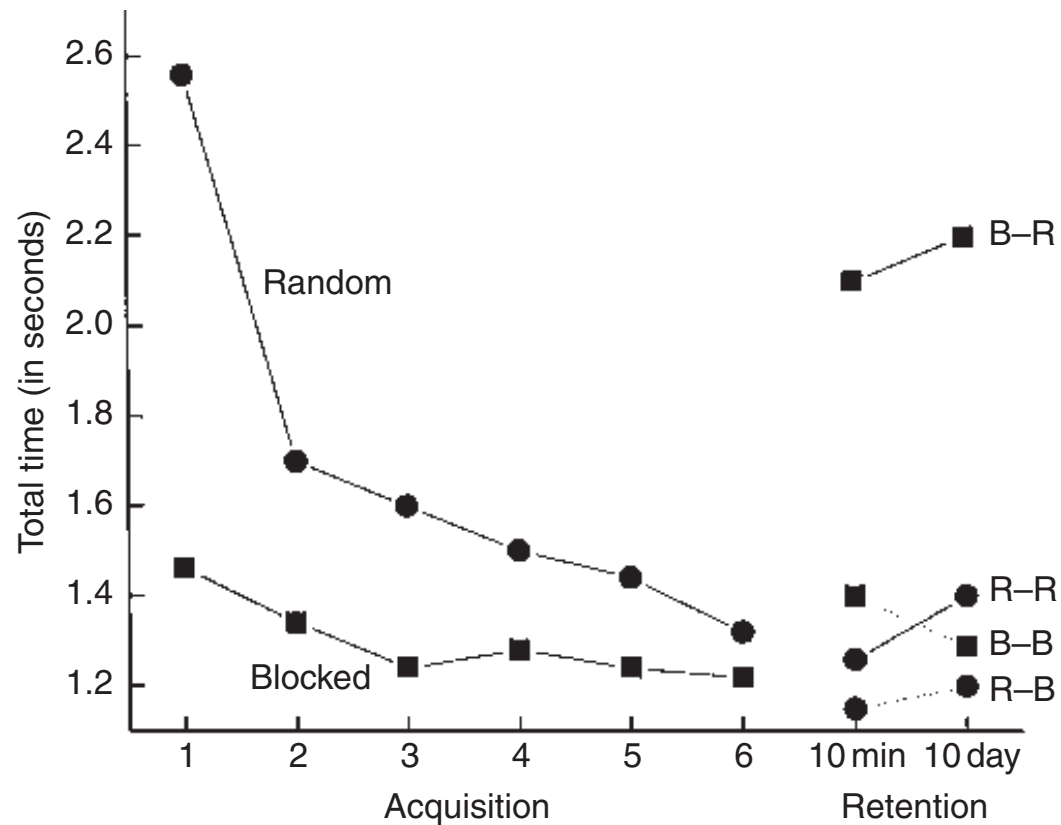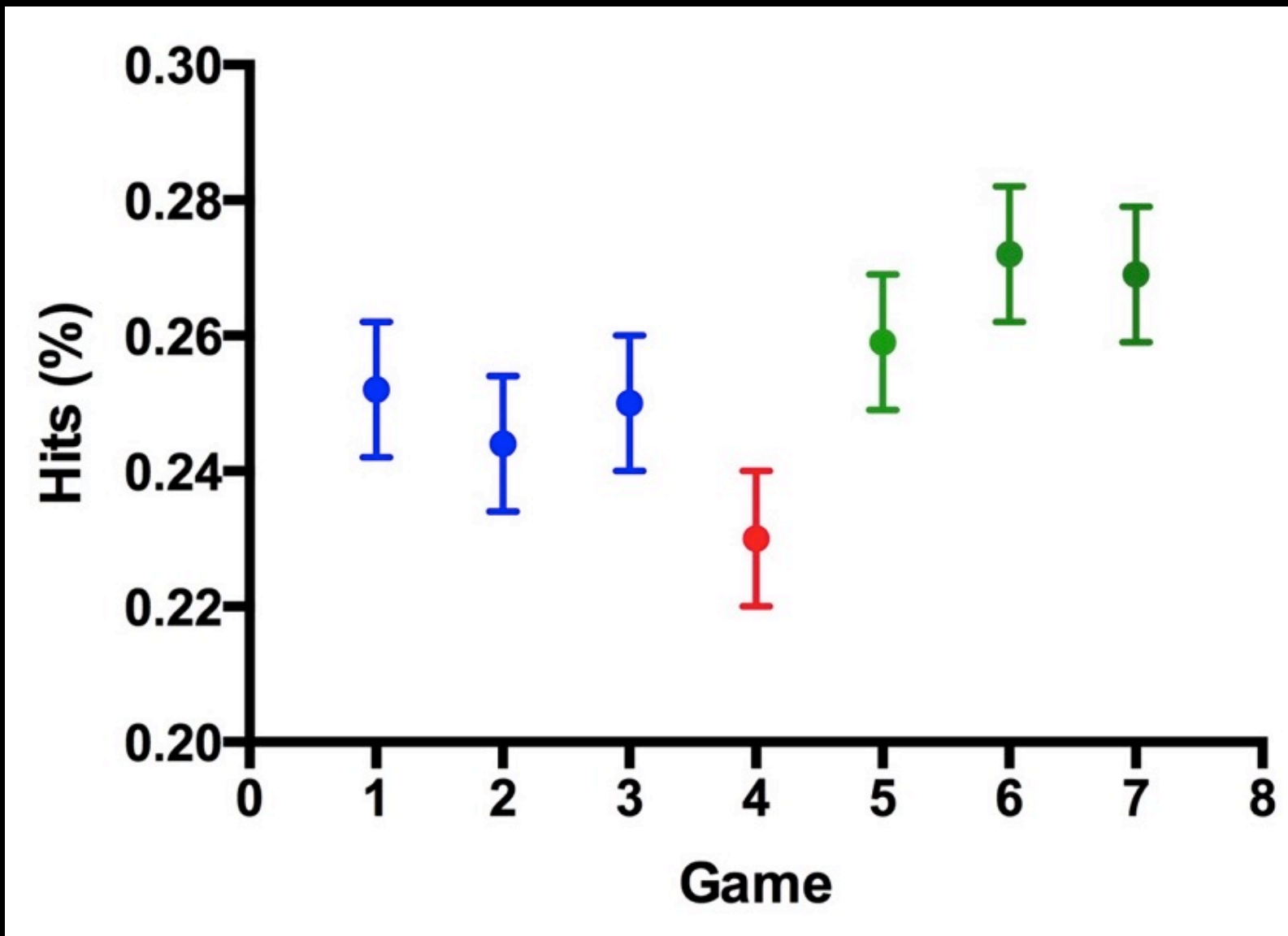
Contextual Interference
(Shea and Morgan, 1979)

Figure 2.2 Results of the Shea and Morgan (1979) experiment.

Pluta & Krigolson (In Prep)

163 | THE EFFECT OF DIFFERENT LEVELS OF CONTEXTUAL INTERFERENCE ON LEARNING OF VOLLEYBALL PASSES

Maryam Karimian,[1] Fateme Kashefolhagh,[2] Mohammad Sadegh Dadashi,[3] Zahra Chharbaghi[4] [1]*Member of Board of Education in Fasa Complex of Higher Education, Iran;* [2]*Member of Board Education of Iran University of Science and Technology, Iran;*

Introduction The purpose of the present study was to investigate the effect of different levels of contextual interference on the learning of volleyball pass.

Method Sixty novice students (age range: 22–24) that were participated voluntarily, according to their records in 10 pretest trails and depend on locale doing pass assigned into four group involve: blocked practice; little contextual interference; medium contextual interference; high contextual interference. The stage of acquisition involves three practice sessions and any session were 10 blocks and any block involving 10 trails. Participants on the blocked practice pass only from one point but another groups (depend on levels contextual interference) pass from different points. Participants then participate in retention and transfer test after a week without practice.

Results Results indicated that there is a significant interaction between levels of contextual interference and performance. The participants of blocked practice were meaningfully better from another group in acquisition stage but the participants of high and medium contextual interference were meaningfully better from participants of blocked practice in retention and transfer tests.

Contextual Interference Effects in Learning Three Badminton Serves

SINAH GOODE and RICHARD A. MAGILL
Louisiana State University

This study investigated the generalizability of results of contextual interference effects by extending previous laboratory research to a field setting. Thirty female subjects (N = 30) learned three badminton serves in either a blocked (low interference), serial (mixed interference), or random (high interference) practice schedule. The subjects practiced the serves three days a week for three weeks. On the day following the completion of practice the subjects were given a retention and transfer test. Results replicated previous findings of contextual interference research by showing a significant group by block interaction between acquisition trials, retention, and transfer. The random group performed better on both retention and transfer than the blocked group. The significant trial block by contextual interference interaction also supports the generalizability of contextual interference effects, as posited by Shea and Morgan (1979), to the teaching of motor skills.

Tenet One

The total number of repetitions of a skill within a practice session must remain the same – random practice simply manipulates the order of the skills within a drill.

Tenet Two

Random practice is a continuum – in a ideal random practice situation a skill is never practiced more than once in a row.

But what is Contextual Interference?

Contextual Interference

Random Practice

Generally poorer performance during acquisition

BUT

Greater RETENTION in TRANSFER

i.e. LEARNING

Is random practice always better?

Tenet Three

There is evidence to suggest that early in learning is it better to use a BLOCKED practice schedule.