

Contextual Interference Lab

Introduction: Practices usually consist of not just one skill being learned and practiced but also several skills being taught and practiced within one-session or class period. The question before teachers, physical therapists, exercise leaders, and athlete trainers is, “how do I organize the practice when I want to develop more than one skill in one class period or session?” The answer to this question is found in the concept of contextual interference. A high contextual inference practice is where there is a great memory and performance disruption that results from performing multiple skill variation of a skill within the context of practice. We know that there are high learning benefits resulting from performing multiple skills in a high contextual practice schedule (e.g. random), when compared to performing the skill in low contextual interference schedule (e.g., blocked).

We need to design an appropriate practice schedule that is appropriate of the performer stage of learning. Sometimes this is referred to as matching the level or difficulty in practice to the learner’s level of development. These practice designs come in the form of blocked, serial, or random practice schedules. Each design of practice produces a differing level of practice variability.

Remember we are talking about a practice that involves practicing several skills within the same practice. Let’s use the sport of table tennis as an example. We want our students to learn the forehand topspin serve, forehand topspin drive, and backhand topspin drive all within the same lesson.

A blocked practice design would be to practice the forehand topspin serve for 20 trials, then practice the forehand topspin drive for 20 trials and finally, practice the backhand topspin drive for 20 trials.

A serial practice design would be to practice the forehand topspin serve, then forehand topspin drive, and backhand topspin drive in this order throughout the practice session. You follow this same order throughout each practice session.

A random practice design would not have a set number of trials as in the block design or have a set order of how the skills will be practiced as in the serial practice but the practice of the skill will occur in random fashion.

To study the contextual interference effect, the random practice schedule must include the same number of practice trials as block practice. If not the amount of practice will confound the results.

Purpose: Will contextual practice interference enhance the learning of an anticipation timing task? Research supports the hypothesis that random practice will create a higher degree of contextual inference than blocked practice, resulting in poorer practice performance but better performances on a retention or transfer test than blocked practice.

Task: Anticipation timer is used to administer several different practice schedules.

Procedure: The members of the lab will be randomly divided into two different practice designs: random and blocked. The subjects in both groups will perform 30 trials. Following the 30 trials, allow for a 5 minute rest period. Following the rest period, administer a single 20 mph trial. On the provided score sheet, record the anticipation time of each practice trial and the transfer trial.

Blocked practice group. The blocked practice design group will perform the 30 practice trials in the following order: Trials 1-10 trials at 5 mph; trials 11-20 at 15 mph; and 21-30 trials at 25 mph.

Random practice group. The random practice design group will perform 30 practice trials following a random schedule provided in Figure 1. Each

Figure 1: Sequence of Trials for Subjects 1-6 for random practice condition

Trial	R-1 or 6	R-2 or 4	R-3 or 5
1	05	25	15
2	15	15	25
3	15	25	15
4	15	05	05
5	15	25	15
6	15	15	15
7	15	05	15
8	05	05	25
9	15	15	25
10	25	15	25
11	05	05	05
12	25	25	05
13	25	25	25
14	25	25	15
15	05	25	05
16	25	25	05
17	25	05	05
18	05	15	25
19	05	05	25
20	15	05	15
21	05	05	25
22	15	05	05
23	05	15	05
24	15	05	25
25	05	15	05
26	25	15	15
27	25	25	15
28	05	15	15
29	25	25	25
30	25	15	05

Record the subject's 30 practice trials and 1 retention trials on the subject score sheet below. Following the practice trials, allow a 5-minute rest period. Following the rest period, administer the 6 trial retention test.

Table 1
Individual Score Sheet

Blocked Group			Random Group		
Trial	Speed	Score	Trial	Speed	Score
1	05		1		
2	05		2		
3	05		3		
4	05		4		
5	05		5		
6	05		6		
7	05		7		
8	05		8		
9	05		9		
10	05		10		
11	15		11		
12	15		12		
13	15		13		
14	15		14		

15	15		15		
16	15		16		
17	15		17		
18	15		18		
19	15		19		
20	15		20		
21	25		21		
22	25		22		
23	25		23		
24	25		24		
25	25		25		
26	25		26		
27	25		27		
28	25		28		
29	25		29		
30	25		30		
Total	//////		Total	//////	
Practice Mean	//////		Practice Mean	//////	
Transfer Test	20		Transfer Test	20	

Calculate your absolute mean error for your practice and retention test. Once you determined your absolute mean errors record them on the board and in the below table.

Table 2
Class Practice and Retention Data

Subjects	Block Practice	Random Practice	Block Retention	Random Retention
1				
2				
3				
4				
5				
6				
7				
8				
9				
Total				
AE Class Mean				

Data Analysis: The independent variable in this lab is the form of practice, random or blocked, where as the dependent variable is your mean response time. Calculate the mean for the 30 practice trials and the transfer means for the 1 transfer trial.

Graphing: Develop a line graph by plotting the class AE class means by conditions for the practice and retention. The X-axis should have the practice and retention class means. The dependent measure of mean response time in ms will be the Y-axis. Develop an appropriate title for the graph.

Lab Questions (Typewritten, paragraph and sentence form not outline)

1. Conduct two *T*tests using data in table 2; one for blocked versus random practice means and other for blocked versus random transfer scores . See prior labs for formulas and calculations. The following table of values for t-test of significant should be used to determine significance in this lab.

df	5%	1%
5	4.032	2.517

2. Write a summary of our results. The summary should include a discussion of the practice and retention class results. The class AE means and statistical tests should be provided in the summary with a statement that indicates that your support or rejection of the hypothesis. Compare your results to those of Goode & Magill and Simon & Bjork found the text (pages 374-377). Then discuss the similarities and/or differences found in this study to the two studies cited above. Conclude the summary by discussing how the skill level of the class members may have influenced the results in this study (see pages 378-9).