

# Mass versus Distributive Practice Lab

Name: \_\_\_\_\_ Score: \_\_\_\_\_

## ***Introduction***

Practice distribution has been a popular topic for research in motor learning for many years. One of the issues that were the focus of much of the early research concerned the amount of rest people need between practice trials to ensure an optimal learning environment. Some researchers argued that distributive practice is better; other maintain that it did not make much difference which spacing strategy an physical therapist, exercise leader, or instructor followed.

Mass practices involve longer active practice or work time and shorter rest periods than a distributed schedule. A distributed practice schedule will have the same amount of active practice or work time across more sessions but each session is shorter than in the massed schedule and extended over a longer period to achieve the same total amount of practice. The primary practice distribution concern for a physical therapist, exercise leader, or instructor is how to use an allotted time within and between practice sessions.

Much of the research results point to the benefit of distributive practice across more days leads to better learning than massing the sessions within a few numbers of days. In typewriting accuracy and speed (Braddely & Longman, 1978), word processing skills (Bouzid & Crawshaw, 1987), and putting in golf (Gail & Christina, 2004), all showed that distributive practice schedule was better than mass. The benefits of using distributive practice over mass practice are explained in terms of lower fatigue, more cognitive effort, and better long-term memory retention in the performer.

The controversy between mass and distributive practice exists in the length of intertrial interval. Two Meta analysis reviews have reported that the type of task being learned or performed determined which practice schedule was better. For continuous tasks distributed schedules lead to better learning than massed schedules. For discrete tasks, mass schedules were better for learning than distributed schedules.

The issues about mass versus distributive practice schedule results really are related to: 1) the length and frequency of practice sessions, and 2) the length of inter trial interval for a series of practice trials. These two issues are often overlooked as distinct even through research evidence supports the distinctions.

## ***Purpose***

The purpose of the lab is to examine the most researched issue in the history of motor behavior research: the effects of rest on motor behavior. We will examine the effects of massed and distributive practice on a discrete and continuous task.

## ***Tasks***

The discrete task is a mirror tracer. A trial equals to one complete tracing of the star. The trial starts with the stylus at the top of the star and moves toward the eastern point

and downward toward the bottom of the star and then toward the Western point, back to the beginning position. The subject looks through the mirror while tracing the star. The mirror tracer's control unit automatically records the number of errors- the number of times the subject goes outside the path of the star. An error is any mark on or out side the lines of the star. The continuous task is the pursuit rotor. Participant hold the stylist in the non-dominate hand and attempt to track the lighted disc as it moves in either the clockwise or counter clockwise direction.

### ***Procedure***

Subjects will use their non-dominant hand to complete both tasks. The number of errors during practice will not be recorded. Only the retention test scores will be used to determine which practice schedule, mass or distributed, was best in performing both tasks.

The students will be randomly assigned to either the distributive or mass practice schedule condition. The total amount of work is to be equal for both conditions. To achieve this purpose, one member assigned to the mass practice condition will be paired with a member assigned to the distributive condition.

The paired member assigned to the mass practice schedule will practice on the mirror tracer for a period of 3 minutes. During the practice schedule the number of times they completed the star need to be recorded. The mass practice schedule involves moving the stylist around the star as fast as possible with the least amount of errors. It is important to record the number of time the mass practiced schedule member went around the star within the 3-minute practice schedule.

After the mass practice schedule member has completed the practice, the distributed practice member will complete the same number of trials the mass practice schedule member went around the star during practice. If the mass practice member completed 10 continuous trials within the 3-minute period then the distributive practice member will complete 10 trials. The major difference is that the distributive practice member will be given a rest period of 15 seconds between each trial.

For the continuous task, the subject assigned to the mass practice conditions will practice for 3 minutes continuously on the pursuit rotor. But the subjects in the distributed condition will practice the pursuit rotor for 12 – 15 second periods (equals 3 minutes of work) with a 15 second rest between trials.

After practice has been completed, one transfer trial for each subject will be completed using his or her non-dominate hand moving in the ***same direction*** practiced. The retention trial consisted of one complete circles around the mirror tracer from the beginning to end (top) of the star. Retention test for the pursuit rotor will be one 15 second tracking with the his or her non-dominate hand moving in the same direction. Record the total sum time for the each task in table 1. The subject total score for the discrete task is the sum total number of errors committed plus the time it took to trace the star to nearest second (e.g., 15 sec to trace the star plus 5 errors = 20 seconds). The

subject's total score for the continuous task is the total time the stylist was tracking the lighted disc.

Subjects	Star Tracer (Discrete Task)		Pursuit Rotor (Continuous Task)	
	Mass	Distributive	Mass	Distributive
1				
2				
3				
4				
5				
6				
Mean				

### Results

The effect of mass versus distributive practice in learning the star tracer and pursuit rotor tasks were determined in the transfer test. The group that overall had the lowest overall mean score was considered to be the best *practice* schedule for that task.