
The Effect of the Study Session on Test Performance

A common practice in higher education is for instructors to help their classes prepare for tests by holding study sessions prior to exams. However, the effectiveness of study sessions vis-a-vis test performance has not been empirically demonstrated. Arguments in favor of their usefulness are that study sessions (a) allow the student a chance to ask questions and thus clear up points of confusion and fill in lecture note gaps, (b) provide a repetition of information, and (c) help provide additional framework for the student to organize the material to be covered on the test. This last argument is perhaps the most important in light of studies showing increased memory performance when material is organized (Mandler, Pearlstone, & Koopmans, 1969; D'Agostino, 1969). On the other hand, arguments can also be made in opposition to the usefulness of the study session. One argument is that all that the study session does is provide students with information that they would have obtained for themselves by studying harder. Thus, there should be no increase in test performance after attending a study session. Another argument is that the study session works only because the instructor leaks information to the students about the upcoming test items.

One final possibility is that the study session is useful, but only for some types of students. One potentially relevant dimension is that of academic ability. If study sessions are helpful, especially for organizational reasons, they should help the better students more than the poor students. That is, poorer students may either not have the intellectual capacity to organize or use the provided organization of the material.

Another issue is that poor students may have delayed preparing for the test until the night before, thus not allowing enough time to prepare, even with the help of the study session.

In order to examine these questions, students enrolled in a general psychology course were tested for academic ability. An optional study session was held and attendance was monitored. It was predicted that students who attended the session would score higher on exams than those who did not. Moreover, for those who attended, it was predicted that those who scored in the high and middle range of ability would show significantly greater test performance improvement than those in the low range.

Method. In order to estimate the students' academic abilities, the Wonderlic Personnel Inventory (Wonderlic, 1978) was administered during the eighth week of the semester to students enrolled in a large general psychology course at the University of Arkansas. The Wonderlic is used in personnel selection, and it measures abilities in math, vocabulary, and logic. The Wonderlic can be administered in 12 minutes and thus is compatible with a group testing situation. Students scoring above 26 (70th percentile) were designated as higher in academic ability, students scoring below 21 (48th percentile) were designated as being lower in academic ability, and those scoring in between were considered medium in academic ability. These cutting lines were used in order to both maximize the sample size in each condition and to maximize the ability differences between the groups.

An optional study session was held the night before the test. The session was conducted by a graduate assistant who was blind to the specific test item content. During the study session, students were allowed to ask questions about material covered in the text and in lecture, and the session leader attempted to outline the major points under each of the broad concept areas. Attendance was taken at the one-hour session.

The exam consisted of 50 multiple-choice items covering three chapters from the *Psychology: Understanding Behavior* text (Baron, Byrne, & Kantowitz, 1978) and were taken from the item pool supplied by the authors. The time allowed for the test was 50 minutes and each correct answer was worth one point.

The scores on the exam were examined in a 3(high, medium, and low Wonderlic score) by 2(attended, not attended) between subjects factorial design using an unweighted means analysis of variance correcting for unequal cell size. The dependent measure was the test score for each individual for the test.

Results. The data were analyzed in a 3 by 2 analysis of variance using the General Linear Model Procedure of the Statistical Analysis System (Barr, Goodnight, Sall, & Helwig, 1976). As predicted, students who attended the study session ($M = 43.86$) performed better on the tests than did those who did not attend ($M = 39.40$, $F(1,79) = 5.89$, $p < .05$) and overall, high ability students performed better than lower ability students, $F(2,79) = 4.24$, $p < .05$. The interaction between academic ability and study session attendance was not significant, $F(2,79) < 1$. Planned t -tests across the levels of intelligence showed that of the students scoring high on the

Wonderlic, those who attended the study session ($M = 46.53$) did better than those who did not attend ($M = 42.36$), $t(19) = 2.52$, $p < .02$. Likewise, of those students scoring in the middle range of the Wonderlic, the students who attended ($M = 44.40$) scored significantly higher than those who did not attend ($M = 38.76$), $t(38) = 2.52$, $p < .01$. The differences in the low range between those who attended ($M = 40.78$) and those who did not ($M = 37.00$) were not significantly different, $t(17) = .69$.

Table 1. Means, Standard Deviations, and n of Test Scores

Attendance		Academic Ability			
		High	Medium	Low	Total
Attended	<i>M</i>	46.54	44.40	40.78	43.86
	<i>SD</i>	3.36	4.31	5.31	4.92
	<i>N</i>	13	15	14	42
Not Attended	<i>M</i>	42.36	38.76	37.00	39.40
	<i>SD</i>	5.08	6.72	8.10	6.69
	<i>N</i>	11	25	7	43
Total	<i>M</i>	44.62	40.88	39.52	
	<i>SD</i>	4.65	6.49	6.43	
	<i>N</i>	24	40	21	

Discussion. The results supported the hypothesis that study sessions held prior to an exam do help students perform better on the exams. However, the reason for the effectiveness of the study session is still not clear. Because the teaching assistant conducting the study session was blind to the specific content of the test, it is unlikely that the effectiveness was due to test content leakage. Another possibility is that the students who attended were more motivated than those who did not. While this is possible, it is not likely because such an explanation would have difficulty accounting for the fact that the study session did not help the poorer students who attended.

It is likely that the effectiveness of the study session was due either to further clarification of the lecture material or to the provision of an organizational framework or perhaps a combination of the two. These possibilities can not be differentiated from the present data. Moreover, either could explain why the review session did not help the poorer students. It could be that those students who score poorly on the Wonderlic have poor organizational skills and are not able to utilize the organization provided by the teaching assistant. It could also be that the poorer students' comprehension of the material was not sufficient for them to obtain acceptable levels of mastery of the material. It might also be that poorer students may be helped by a different type of study session. Perhaps one that moves slower or concentrates on memory aids and/or drill would be more appropriate. These suggestions would of course need further empirical review. Until then, in terms of delivery of teaching services, the current study strongly suggests that pre-exam study sessions are a useful teaching tool in terms of improving test performance, and therefore can be justifiably incorporated into the teacher's armamentarium.

References

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Note

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