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LEARNED HELPLESSNESS: THE EFFECT OF FAILURE ON TEST-TAKING

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This study examined learned helplessness and its effect on test taking. Students were given one of two tests; the first began with extremely difficult questions and the other started with easy questions. We hypothesized that those who took the test beginning with difficult questions would become easily frustrated and possibly doubt their intellectual ability. This would result in the participants missing easy questions when compared to those who took the test which began with the easy questions. The result of the study confirmed our hypothesis. The results of this study could also be applied to other classroom tests and standardized tests where learned helplessness could negatively affect test scores.

Learned helplessness is a phenomenon containing three components: contingency, cognition, and behavior. Contingency addresses the uncontrollability of the situation. Cognition refers to the attributions that people make regarding their situation or surroundings of which they are a part. Behavior allows individuals to decide whether they will give up or proceed with the obstacle set before them (Peterson, Maier, & Seligman, 1993).

When people experience learned helplessness, they have a tendency to give up easily or fail more often at somewhat easier tasks. Learned helplessness is more likely to result from situations where failure is uncontrollable. For example, Gernigon, Fleurance, and Reine (2000) conducted a study on failure in controlled and uncontrolled circumstances. They found that failure was more likely to occur in uncontrollable circumstances.

Another study, conducted by Stiensmieier-Pelster and Schurmann (1989), addressed failure in terms of blaming the results on internal or external factors and how performance was affected by the response. They performed two tests on subjects and then rated their performances. The researchers found that the subjects who related the failure to internal causes, such as the task was intellectually too difficult for them personally, were more inclined to give up than those who attributed their failures to external causes, such as thinking that the test itself had impossible questions.

Many factors load into the construct of learned helplessness. For example, the type of situation may affect the way that people respond to difficult tasks. If a person is forced to perform in public, factors such as anxiety influence performance. In learned helpless situations, performance deficits often result from low motivation due to the beliefs that the person is not in control (Witkowski & Stiensmeier-Pelster, 1998).

Learned helplessness has an effect on a wide cross-section of people. Kashdan et al.(2000) applied the construct specifically to disruptive children. They compared mothers who experienced high-social anxiety with mothers who had low-social anxiety by placing them with an uncontrollable, deviant child in an experimental setting. The researchers had hypothesized that the mothers with high-social anxiety would be more distressed after the interaction with the child, and as a result, they would have many negative feelings. The measures of distress included self-ratings, observed mood ratings, heart rate, and blood pressure. In the end, the experiment and the experimenters hypotheses were supported; correct-mothers with high social anxiety showed a lower threshold for activated negative emotions such as anxiety, anger, and irritability and less positive interpersonal engagement.

Learned helplessness can affect one type of person more than another. A study conducted by Milich and Okazaki (1991) suggests that ADHD boys become frustrated more easily when confronted with failure than those without ADHD. Tasks were presented to 23 boys diagnosed with ADHD and 22 boys comprising a control group. The tasks involved solving word puzzles where in one condition the tasks were extremely hard and the others were relatively easy. The researchers found that the boys with ADHD showed an increase in how easily they quit after they solved one particular puzzle. In turn, the children diagnosed with ADHD exhibited responses similar to those of helpless children. They became frustrated more easily, and subsequently reported feeling increased boredom and anxiety.

Based on the reviewed studies, the present research applies the construct of learned helplessness to the domain of test-taking and one's perceived intelligence. We were interested in studying this phenomenon to assess the degree to which students would experience frustration during test failure, triggering learned helplessness, and to compare the results with a control group of students in the same situation.

Method

Participants

Students in two psychology classes from a private, mid-western comprehensive university participated in this study. The majority of these students were Caucasians, aged between 17 and 20. A freshmen-level child development class was used to run a pilot study, prior to collecting data from a freshman-level general psychology class for the actual study. Students from the child development course completed the test in its standard format. The students from the general psychology class were randomly assigned to the experimental and control conditions. The researchers assured all participants that responses provided would remain anonymous.

Materials

A research edition of the Shipley Cognitive Scales (Shipley, Martin, & Gruber, 1997) was utilized for this experiment. This test was in the norming process at the

time of data collection. The research edition of the instrument was comprised of a total of 88 questions in three sections: Vocabulary, Abstraction, and Block Patterns.

The vocabulary portion of the test consisted of 50 words in which the participant was instructed to identify the word with the same meaning as the original. Four options were provided for each question. The Abstraction portion of the test contained 24 items. Students were instructed to generate (no options provided) replies which completed the appropriate sequence of words, numbers, or letters. The Block Patterns portion of the test contained 14 items. Students were instructed to select the most appropriate design pattern that fit the missing block pattern. The test was designed by Shipley, Martin, and Gruber (1997) as a revision of The Shipley Institute of Living Scales (Shipley, 1986). The authors of the present article assisted WPS with collecting normative date in revising the Shipley instrument.

Design and Procedure

The standard form of the Shipley Cognitive Scales: Research Edition (referred to in this article as "The Shipley") first was administered to a freshman-level child development class. Students were told that they were participating in part of the norming process for the instrument. Students were given 25 minutes to complete the test.

The researchers obtained ACT/SAT scores for all participants in the child development class. After grading the test, the researchers divided the class into two groups by a median split: Group one was the higher ACT/SAT scores and Group two was the lower ACT/SAT scorers (relatively speaking to the other group members in this particular class).

We then generated a chart comparing the correct and incorrect answers for each Shipley question by each student ranked from highest to lowest ACT/SAT score. By this method we examined each individual question to decide relative rank order based on the number of participants answering the question correctly or incorrectly, and whether the participants were in the upper or lower ACT/SAT groups.

For example, if most of the students in both groups provided correct answers to various questions, then they were deemed to be easy. However, if most of the students provided incorrect answers, then the question was considered to be difficult. Ranking was also considered when most of the high ACT/SAT group provided correct answers, while the low ACT/SAT group provided incorrect answers. The final form of the test consisted of 48 "easy" questions and 40 "hard" questions.

Pursuant to this analysis, two tests were created for use with the general psychology class. Both tests contained all the Shipley items. Test A began with the most difficult questions and proceeded to the easiest questions. Test B was identical to Test A, except that the order of all the questions in each domain was reversed (i.e., least difficult to most difficult).

Students in the general psychology class were randomly assigned to two groups. Half (32 students) were given Test A and the other half (32 students) were given Test B. Students were told that the average per-

son was expected to do well on the test and they had 25 minutes to complete it. The class was debriefed immediately following the experiment.

Results

The data were analyzed at three levels: number of correct answers on easy items, number of correct answers on hard items, and total number of correct answers. After incomplete data and outliers had been eliminated, the final sample consisted of 31 participants in the Test A Group and 30 in the Test B Group. Differences on performance between Test A and Test B were analyzed through the independent-samples t-test at each level. Table 1 presents the descriptive and inferential statistics. The experimental group (those who took Test A) had fewer correct answers on the easy part than the control group (those who took Test B), but slightly more correct answers on both the hard portion and the entire test. Among the three sets of comparison, only the difference on the easy items had reached the statistical level of significance ($p < .01$).

Table 1
Number of Correct Answers between Students Who Took Hard Items First and Students Who Took Easy Items First

Level/Test[a]		Mean	Standard Deviation	t (59)
Easy				
	Test A	46.10	2.27	-2.85**
	Test B	47.33	0.80	
Hard				
	Test A	20.19	5.34	1.20
	Test B	18.47	5.86	
Total				
	Test A	66.30	6.08	0.31
	Test B	65.80	6.17	

[a]Test A – Hard Items before Easy Items
Test B – Easy Items before Hard Items

** $p < .01$

Discussion

The objective of the current study was to determine the extent to which the failure experienced in the early part of a test would elicit helplessness in the student, hence result in lowered performance on

the later part of the test. According to the helplessness hypothesis, students who had hard questions before the easy questions would tend to give up on the easy questions due to frustration, but their performance on the hard questions would not be affected. Our data supported the helplessness hypothesis. Compared with the performance of those students who took the easy questions first, students who had hard questions first scored lower on the easy items ($t = -2.85$, $df = 59$, $p<.01$), but did at least equally well, if not better, on the hard items.

To substantiate the helplessness hypothesis, we needed to rule out the alternative explanation that the students who took hard questions first had spent too much time on hard items and did not have time to finish the easy portion of the test. We have two reasons to believe that regardless of the item order, students in both group had enough time to attempt all the questions: 1) all students who took hard questions first had completed the last section (the easiest questions) of the test; and 2) performances on hard questions were similar in two groups.

Examination of the correlation between "easy" items missed by the students and "hard" items missed revealed further evidence of "helplessness" in the students who took Test A. Correlation between performance on the "easy" and "hard" questions ($r = .13$) for Test A Group was lower than the correlation in the Test B Group ($r = .33$), suggesting that "something else' has contributed to the performance in Test A. We believe that our manipulation of item difficulty order had created a negative impact on the student's ability to respond correctly.

For decades, teachers and test developers have been advised to arrange the test items in the ascending order of difficulty so that the test takers would be motivated by the early successful experience and continue the test. However, very few studies have investigated how difficult items appearing at the early part of a test negatively affect the performance on later questions. In fact, the item response theory on which the modern computerized adaptive testing (CAT) technique is based assumes independent responses among individual items (Lord & Novick, 1968). Our results suggested the opposite: responses on later items can be greatly affected by the experiences, especially negative experiences, from earlier items. In our study, this negative experience came from a sheer anticipation of failure in those who took hard items first because no feedback was given on their performances, and the test scores showed that they did not fail on hard items. We may conclude that the perceived failure alone was sufficient to make students feel helpless and give up on test.

The educational significance of our findings can be found in the construction of both standardized tests and classroom tests. When items are selected from an existing item bank, it is important that items not only meet the content objectives but are also arranged in proper order of difficulty. Factual questions are,in general, easier and can be placed before conceptual questions. To avoid leaned helplessness in respondents, test writers should generate questions which allow students to perform at their normal level and therefore insure the overall validity of the assessment.

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