Effect of Reward on Need for Achievement

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Reward and need for achievement

Abstract

The effects of a reward on the need for achievement were examined using a 2x2 (no reward versus reward x difficult versus easy) ANOVA. The participants were 28 university and college students from London, Ontario. The participants did their best to complete a set of anagrams (difficult or easy) and then answered A Quick Measure of Achievement Motivation questionnaire to get an accurate reading of their nAch. The results showed that there was no difference in nAch between the reward $F(1,12) = 0.06, p > 0.05$ and no reward $F(2, 12) = 0.00, p > 0.05$ group.

Introduction

David C. McClelland was a famous American psychological theorist who looked at the idea of need for achievement (nAch) through what are called Thematic Apperception Tests (TAT). These tests would provide the participants with pictures and ask them to write a story about based on achievement. The stories would look at implicit motives such as nAch. These motives are implicit because they are thought to reveal an unconscious level of reflection within the author (Spangler, 1992). The TAT is useful for clinical assessment of personality especially in cases of paranoid schizophrenia. The scoring system is simple enough. It analyzes the story for certain characteristics of achievement or a lack of. For example, it poses the question of whether or not success is actually mentioned in the story, and a mark is offered if success is mentioned and no mark is given if success is not mentioned (Winter, 1998). The participants are given somewhere around 4 minutes to come up with a story that encompasses these themes of success/achievement (Smith, 1973). The problem with these TATs is that they take too long to administer unless targeting many people at once. Even when asking
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many people to perform the task they still have to repeat it three more times with three other photographs.

Another test was needed in this study instead. Since the TATs would take too long anagrams were used instead. Anagrams are a set of letters arranged in an incomprehensible order until unscrambled to reveal a word. While they do not reveal implicit motives such as nAch they are more concise than TATs when coupled with a different method of measuring nAch. Smith (1973) developed a 16 TRUE/FALSE questions questionnaire used to measure nAch. He called it a quick measure of achievement motivation. The questions were derived from a pool of 103 items. The 10 items with the highest correlations were chosen for the final test. Six of the items on the test measure ‘carelessness’. In other words, it measures how close the participant was paying attention to what was being asked of them. It includes questions that are worded in a specific way to ensure the reader is following closely. The basis for including these ‘carelessness’ items was to get an understanding of how suspect the participant’s answers were to the questions. The quick measure of achievement motivation test measures nAch by directly asking participants how ambitious they see themselves to be and at the same time evaluating how careless they might be.

This questionnaire will make it easy to record nAch in certain types of conditions. In this study in particular, there will be a ‘difficult’ group and an ‘easy’ group. These two groups will be further divided into ‘reward’ and ‘no reward’. The questionnaire will allow the researcher to see any differences in nAch between the four categories. This paper suggests that groups who are being rewarded,
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regardless of difficulty, will have a higher nAch as they are being rewarded for succeeding.

Method

Participants

Students from Fanshawe College, Huron University College and the University of Western Ontario were asked to participate in this study. Twenty-eight students were asked to participate in total. The average age for the participants was 20 years old. Most of the participants were male just by chance.

Materials

A quick measure of achievement motivation questionnaire was used. It was taken from Smith (1973), the same test he used in his study. It is a test comprised of 16 TRUE/FALSE questions, 10 of which measure actual nAch and six that measure 'carelessness'. This test has a very high validity as it has a high split-half correlation, a correlation coefficient that is calculated using two halves of a test, of 0.58 with McClelland's projective test (Smith, 1973). The test also has a rather high reliability at 0.56 (Smith, 1973).

Two pads of 22.2 mm by 73mm 'post-it' page markers were used to act as raffle tickets. Two different sets of anagrams were used made by the researcher. One set was the 'difficult' set and one set was the 'easy' set. Each set of anagrams contained six and a scale at the bottom of the page for the participant to rate how difficult he or she thought the test was.

Procedure
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Initially, participants were given the difficult or easy condition based on a coin toss with heads meaning difficult and tails meaning easy. Then they were put in a reward or no reward condition was based on a coin toss, heads meaning reward and tails meaning no reward. In the interest of keeping all of the groups equal, as the study progressed the participants were given a test that came off the top of the pile and were told which reward/no reward condition they were put in to level out numbers in each category. The participants in the reward condition were told before they began that each anagram successfully unscrambled would merit one ticket in the draw for the prize. The participants given no reward were just asked to unscramble the anagrams. The participants were given 5 minutes to finish the anagrams and as much time as they needed to fill out the quick measure of achievement motivation test. Tickets were filled out with the participants name and contact information was given to the researcher. Once the participants were finished with their tests, they were marked with a ‘R’ meaning reward or an ‘NR’ meaning no reward. This allowed the tests to be distinguished for the data analysis and sorting.

Results

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>A(difficulty)</td>
<td>0.3136</td>
<td>1</td>
<td>0.3136</td>
<td>0.0551</td>
</tr>
<tr>
<td>B(reward)</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AxB</td>
<td>2.9584</td>
<td>1</td>
<td>2.9584</td>
<td>0.3442</td>
</tr>
<tr>
<td>Error</td>
<td>68.2860</td>
<td>12</td>
<td>5.6905</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>74</td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Analysis of variance between test difficulty and reward situation.
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A 2x2 analysis of variance (N=28) was revealed that there was not a significant main effect of rewards on need for achievement, $F(1,12)= 0.06, p> 0.05$. Participants in the reward condition ($M= 6.14$) did just as well as those in the no reward condition ($M= 5.86$). As well, there was no significant main effect between test difficulty, $F(2, 12)= 0.00, p> 0.05$. There was also no interaction between rewards and test difficulty, $F(2, 12)= 0.33, p> 0.05$.

The results of the Quick Measure of Achievement Motivation show that almost everyone had the same answers regardless of their reward and difficulty condition. The overall ratings between the ‘easy’ and ‘difficult’ tests averaged to be 5.14 and 5.21 respectively. Figure 1 shows that the average results of the quick measure of achievement motivation were very similar in all four cases.
Figure 1: This graph shows Difficulty versus Reward condition.
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Discussion

The study requires further development seeing as there is an enormous amount of error in the results. The test itself is very limited in being able to measure nAch especially when participants are very confused about the questions. More often than not participants were not being careless towards questions, they simply did not understand what the question asked. One question in particular “I dislike red tape” encountered the most confusion. Every single participant asked about that question and required clarification of which the researcher could not give.

While the current test used is a good tool to measure nAch quickly, it does not do well to differentiate between the two types of achievement motivation-avoidance of failure and hope of success (Smith, 1973). Since McClelland’s method of measurement takes more time, has its own method of evaluation and takes into account avoiding failure and wanting success it should be used more often in future studies. The McClelland TAT also has an accurate test-retest reliability (Spangler, 1992).

A problem with using anagrams instead of the TAT is the anagrams do a terrible job of standardizing skills. Anagrams require the participant to have a good vocabulary and be good at puzzle solving whereas a simple TAT such as the ones used in McClelland’s test just require a basic command on English. The problem with the anagrams is it left a lot of the participants discouraged and when asked later how they felt about their test, most said they felt as though they did not feel as though they succeeded. Another problem with the anagrams was the difficulty
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between the two sets. For future tests, if anagrams are to be used they should be far more obscure in the 'difficult' test using words such as 'justice' and 'foreigner', they should not be words that are heard almost on a daily basis. Common words such as 'loved' and 'paper' should be used in the 'easy' test.

What seemed to be going on in the study was participants were internalizing success by wanting to be able to finish the tests based on a want to succeed, not based on a want for a reward. It is very difficult to control for that and the next step is to make the reward more salient, perhaps with a monetary reward instead of a raffle ticket. When later asked how they felt about the test, most participants said they wanted to get the anagrams finished rather than care about a prize.
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References


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Appendices

Appendix 1: Results table from a quick measure of achievement motivation scale.

<table>
<thead>
<tr>
<th>Difficult</th>
<th>Easy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reward</td>
<td>No Reward</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
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<td>7</td>
<td>6</td>
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<tr>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>5</td>
</tr>
</tbody>
</table>

Appendix 2: Anagrams for difficult test

Anagrams

Liluions
Noiuns
Epnohecll
Esachr
Aryawaf
Mgetnleanm
Pngeuin

How difficult did you find this task?

Very Easy 1 2 3 4 5 6 7 Very Difficult.
Appendix 3: Anagrams for easy test

Anagrams

Yllsi
Eugav
Yecwh
Ergonl
Yfitur
Sthkna

How difficult did you find this task?

Very Easy 1  2  3  4  5  6  7 Very Difficult.