**Mental Set Problem Solving**

**Abstract:**

The experiment was to examine the effect of mental set in problem solving. The subject was selected randomly and subject did not know about the experiment. This experiment studied the effect of mental set and reaction time in problem solving. In this experiment there are two lists, one consisted of random words and the other consisted of reverse words. The experimental hypothesis of the experiment is that the reaction time of reverse word is less than the random words.

**Introduction:**

A mental set is an unconscious tendency to approach a problem in a particular way. Our mental sets are shaped by our past experiences. For example, if the last time your mobile hang and not working you restarted and it starts working that might be the only solution you think next time it hang. Human intelligence is composed of a series of subcomponent or is a general factor which contributes to success in a large number of cognitive tests, has been contested.

**Charles Spearman:**

Charles Spearman was an English psychologist known for his work in statistics and for spearman rank correlation coefficient. He also did seminal work on human intelligence, including the discovery of g factor. Charles Spearman developed his two factors theory of intelligence, using factors analysis.

**Intelligence:**

Encompassing the number mental abilities such as reasoning, planning and problem solving.

**Components of Intelligence:**

* Concept formation; reasoning, language.
* Perception; learning, problem.
* Solving; six senses.

**Human and artificial intelligence:**

Human intelligence is the ability to understand a common language, to follow instructions, to convert verbal description into actions and to behave according to values of their culture. It is necessary to attributes the human thoughts. The specialty with computer science is called artificial intelligence. Artificial intelligence is not bias. Human intelligence is bias. They have mental qualities.

**Method:**

**Type of Practical:** Experimental.

**Design of Practical:** Repeated measures.

**Dependent variable:** Reaction Time.

**Independent variable:** Nature of words.

**Experimental Hypothesis:**

Reaction time of random words is greater than reverse words.

**Null Hypothesis:**

Reaction time of reverse words is greater than random words.

**Subject:**

* Name: S.F.
* Age: 20.
* Gender: Female.
* Education: BA.

**Apparatus:**

* Paper.
* Pencil.
* Calculator.
* Stop watch.
* Reverse and random lists.

**Procedure:**

1. First of all the experimenter gave the instructions to the subject about his experiment.
2. Then, experimenter gave the first list of reverse words to the subject and asked the subject to write the words reversely.
3. When the subject solved the list, experimenter noted the time.
4. Then, he gave the list of random words to the subject and asked to make words.
5. After this, the experimenter also solved the time.
6. At the end, after the results, the experimenter check the hypothesis whether it is true or not.

**Results:**

The hypothesis is proved that the reaction time of reverse order is less than the random order words.

**Table no.1**

In the table 1 the experimenter put the response of subject on reverse order of words.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Serial # | Reverse words | Anagram | Response | Time(sec) |
| 1 | yroeht | theory | Done | 3.11 sec |
| 2 | melborp | problem | Done | 3.77 sec |
| 3 | namuh | human | Done | 3.84 sec |
| 4 | naeco | ocean | Done | 3.16 sec |
| 5 | lamina | animal | Done | 2.77 sec |
| 6 | ymra | army | Done | 3.23 sec |
| 7 | htam | math | Done | 3.11 sec |

Mean= ∑x/n

Reverse Order= 22.99/7

= 3.28 sec.

**Table no.2**

In table 2 the experimenter put the response of subject on random order words.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Serial # | Random words | Anagram | Response | Time  (sec) |
| 1 | drca | card | Done | 4.12 sec |
| 2 | ionon | onion | Done | 8.12 sec |
| 3 | oodg | good | Done | 6.44 sec |
| 4 | erenv | never | Done | 5.54 sec |
| 5 | oldme | model | Done | 7.66 sec |
| 6 | duse | used | Done | 5.55 sec |
| 7 | meorym | memory | Done | 6.42 sec |

Mean= ∑x/n

Random Order= 43.85/7

= 6.26 sec

**Conclusion:**

The result is that the reaction time of reverse order is less than the random order words. The reverse order list is more easily recalled than the random order word list.

From the theory of Spearman and many other works it is proved that the experimental hypothesis is true and proved. Many researches are currently using Spearman's form of intelligence testing in their current studies. Although not all of the studies is currently using Spearman's exact model for intelligence testing, they are adding some modern concepts to that study. Spearman described that there was a functional relationship between intelligence and Sensory Discriminatory Abilities. Recent research has determined that there is an overlap between Working Memory, General Discriminatory Abilities, and Fluid Intelligence. His work has been built on, expanded, and linked to many other factors related to intelligence. Intelligence testing measuring the g factor has been studied recently to re-explore Spearman's law of diminishing returns. This study investigates how g test scores will most likely decrease as g increases. Research has been done to investigate if g scores are made up of scores from Differential Ability Scales, s factors, and how the law of diminishing returns compares to Spearman's Law of diminishing returns. With the use of linear and nonlinear Confirmatory Factor Analysis, it is showing that the nonlinear model best described the data. The nonlinear model suggests that as g increases, the s factor lowers the overall score and inaccurately represents general intelligence.

**Reference:**

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