

A Relative Analysis Regarding Visual Processing Intervening Males and Females

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Abstract

Visual Processing is a type of research study designed, to investigate how human brain processes visual information. Visual processing involves a series of complex cognitive processes that occur when we perceive and interpret visual stimuli, such as shapes, colours and patterns. This process involves perception, memory, attention and decision making. This experiment aims to investigate the relationship between attentional focus and visual processing: The study will be conducted on a sample of thirty participants, who will be asked to complete a visual search task while their response time is recorded using stop watch. Participants will be divided into two groups, with one group is of girls and other group will be of boys. The dependent variable will be response times and accuracy in identifying the 'POSITIVE, NEGATIVE & NAME MATCHES'. It is hypothesized that the participants take more time to identify the 'NAME MATCH' than the other matches. The independent variables matching type like 'NAME, NEGATIVE & POSITIVE MATCHES'. The Precautions are care should be taken to show the card for a brief period of time and the participant should not be exposed to cards before experiment. The Results of this experiment will contribute to our understanding of how attentional focus affects visual processing and may have implications for designing effective training programs for individuals who need to improve their visual processing skills.

Keywords: Visual Processing, Cognitive Process, Remembering

Introduction

Remembering plays an important role in our daily life, the effects of learning experiences have been retained for a period of time and made available for subsequent behaviour. It has been pointed out by many cognitive theorists that human memory consists of minor storage systems, namely the short-term memory (STM) and the long-term memory (LTM). In General, there are two characteristics which are attributed to STM: firstly, extremely limited capacity and secondly, Fragility of storage. Since the slightest distraction usually leads to forgetting of information when information is attended to, it gets encoded into STM.

Encoding here, not only means that information is deposited but that it is deposited in a certain form of a code. Studies indicate that STM tends to favour an acoustic code for verbal information like digits, letters or words. The visual code plays an important role in the storage of non - verbal items like pictures that are difficult to describe. The most striking feature about STM is that it has a very limited capacity 7 - + 2 on the average. Paivio (1970) and Braddley (1972) found that the important difference between

STM and LTM is that information processing is primarily phonetic in STM and predominantly semantic in LTM.

Pattern recognition is the process by which we categorize incoming information by matching it up with that in our LTM. There is a process of assigning meaning to the world around us. We recognize particular letters or even entire words by matching those local and global features with features we have learnt previously. This type of processing is crucial for visual processing at a sensory level as both the global and local processing can influence the incoming stimuli.

Related Research Work

Haugtvedt & Wegener (1994), the literature on persuasion has investigated positive effect for decades, first showing primacy effects and then showing recency effects. Similar research across discipline and media has demonstrated the importance of an item's position in an ordered list - its serial position -in dependent measures of memory, attitude formation and choice. This research shows both recency and primacy effects across many media, often mediated by the individual's involvement or motivation to think about the object or activity.

Chung Won Lee, JinHoKim, and In KeukHwang (2019) were conducted a study on "A Study on the Serial Position Effect of Memory according to Illumination of LED Light" to verify the forms of the effect of serial position effects of memory according to the illuminance of light. Results of this study showed that the difference between primacy and middle items was statistically significant in relatively dim conditions. These results show that the primacy effect is strong in the dim condition, and the retrieval is low in the middle item. The recency effect was also good in the dim condition, but it was low in the relatively bright condition.

Devanshi Desai (2016) was conducted a study on "The significance of mode of presentation on the serial position effect: an exploratory study". This experiment aimed to look at the significance of mode of presentation (auditory, visual printed and visual pictures) on serial position effects. Participants in this experiment were tested with different treatment conditions. With the auditory group, participants were asked to recall the words by writing them down after the experimenter read out the list of twenty one common-concrete nouns at the rate of one second per word. With the visual printed and visual pictures group, the participants were asked to recall the words by writing them down after the experimenter presented the stimuli on a PowerPoint presentation. The results indicated that there was a significant main effect of serial position. However, a significant main effect of mode of presentation and the interaction between the mode of presentation and serial position wasn't found.

Research Methods

Problem

To estimate differences in processing different kinds of visually presented stimuli (Global or local)

Hypothesis

The time taken for NAME MATCH will be more than the time taken for NEGATIVE MATCH and IDENTICAL MATCH.

Variables

Independent variable: Matching type (like name match)

Dependent variable: Processing time (response or reaction time).

Material Required

a. Set of 12 cards b. Stop watch c. Screen DESCRIPTION OF THE Material

• Set of 12 cards: • Card no's 1, 4, 7, and 10 are prepared using Identical Match. These are used to enable global processing. • Card no's 2, 5, 8, and 11 are prepared using Negative Match. These are used to enable global processing. 11 • Card no's 3, 6, 9, and 12 are prepared using Name Match. These are used to enable local processing.

Sample

The sample consists of total thirty subject's fifteen boys and fifteen girls. The subjects are graduate students under the age group of [sixteen - thirty] located in Hyderabad. In this study simple random sampling is used.

Purpose of Study

Visual processing experiments are conducted to understand how the brain interprets and responds to visual stimuli. Researchers use these experiments to explore various aspects of visual perception, such as colour perception, depth perception, object recognition, and motion detection. By studying how individuals process visual information, scientists can gain insights into the workings of the visual system and how it influences behaviour and cognition. These experiments can also be used in fields such as psychology, neuroscience, and computer vision to develop theories, models, and technologies related to visual perception.

Procedure

The subjects were made to seated comfortably. The following instructions were given to the subjects, "you will be shown some cards/ some information. You will see each card for a very brief period of time.

Observe the card carefully and report whether the two items presented are "same" or "different". Start when the ready signal is given to you". The experimenter gives a ready signal before presenting each card. He/she notes down the time taken for the subject to respond using the stop watch. After presenting the twelve cards the experimenter calculates the results.

Precautions

- Care was taken to ensure the cards were not exposed to the subject prior to the experiment.
- Care should be taken to show the cards for a brief period of time.
- Care should be taken to present them in an order i.e., IDENTICAL MATCH, NEGATIVE MATCH & THE NAME MATCH.

Results

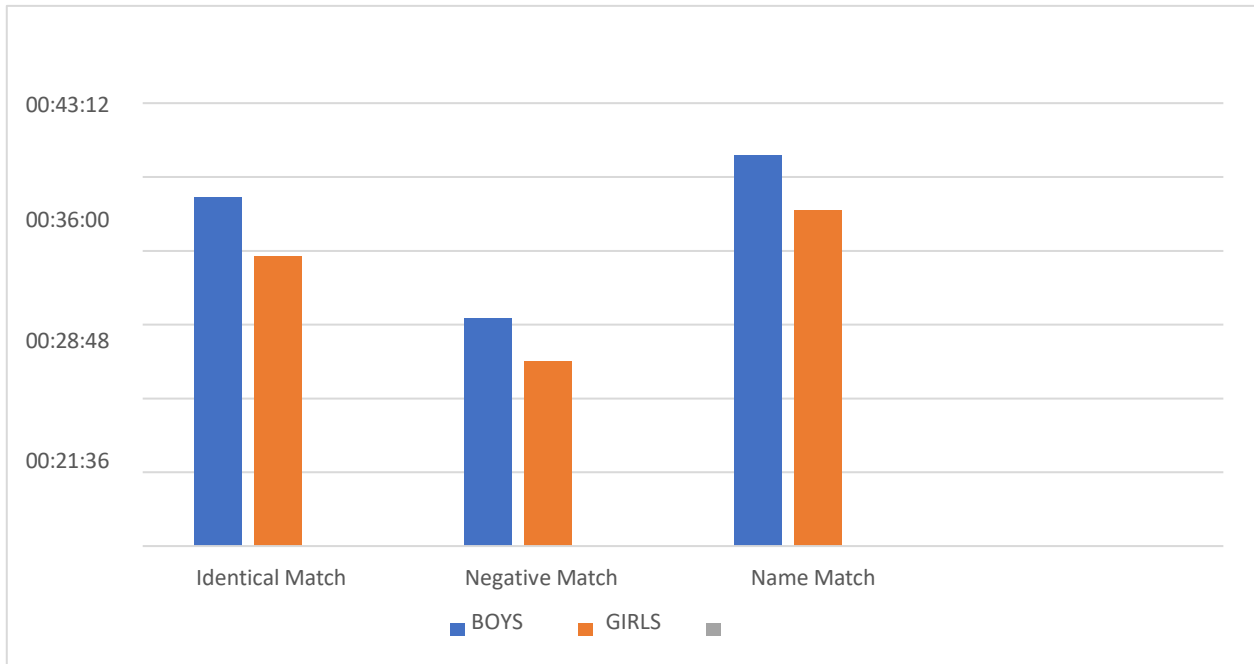
Table-1: Showing the Mean of Boys and Girls

Responses	Boys	Girls
Identical match (time taken)	00:34:02	00:28:14
Negative match (time taken)	00:22:13	00:18:02
Name match (time taken)	00:38:09	00:32:4

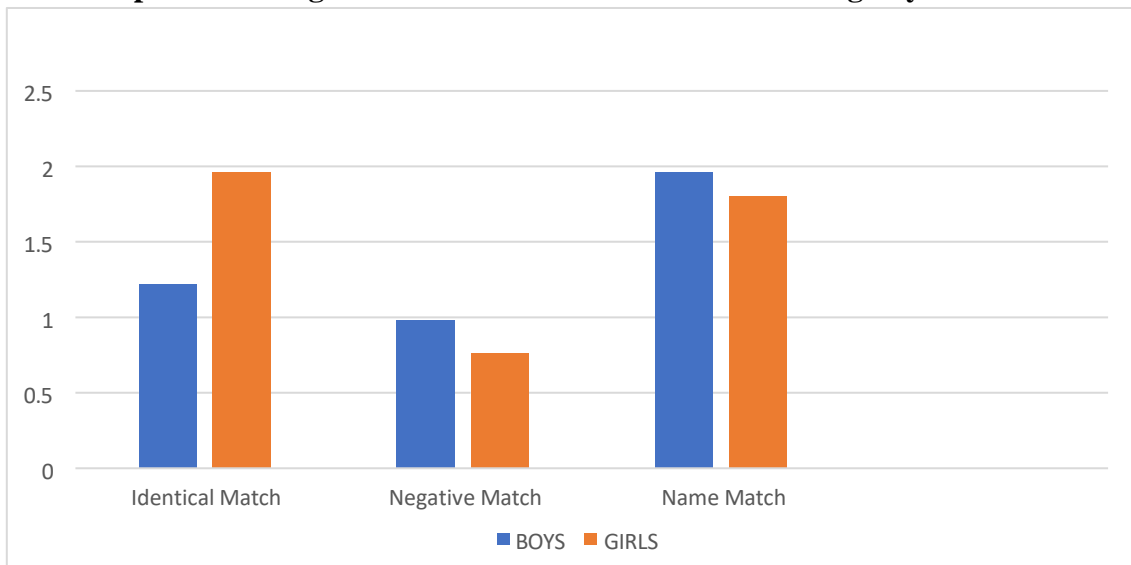
Table-2: Showing the Standard Deviation of Recall among Boys and Girls.

Responses	Boys	Girls
Identical match (time taken)	1.22	1.96
Negative match (time taken)	0.98	0.76
Name match (time taken)	1.96	1.8

Graph 1: Showing the Mean of Boys and Girls



Graph 2: Showing the Standard Deviation of Recall among Boys and Girls



Discussion

The results from the table 1 data shows that the time taken to respond to NAME match was more i.e., 38:09 seconds by boys and 32:44 seconds by girls than IDENTICAL match i.e. 34:02 seconds by boys

and 28:14 seconds by girls, and for NEGATIVE match the time taken by boys is 22:13 seconds and 18:02 seconds by girls. Table 2 is showing the standard deviation of the time taken to respond of the three matches by boys and girls.

Conclusion

The hypothesis that time taken for the name match will be more than that of negative & identical matches is rejected.

Practical Application

This Phenomenon of "VISUAL PROCESSING" Has the potential to impact a wide range of fields, from neuroscience to human-computer interactions.

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