

# Pacman Game

## Benefit Analysis on Decision Making Speed

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**Abstract**—Pacman game is able to train the child concentration and decision making speed. This Research use respondent children ages 6 up to 11 years as a player who will take the data. Every respondent must play Pacman game and then they can answer 10 questions. Resulting data are analyzed with a statistical method; it is "product moment" in correlation technique. The result turns out 8 of the 10 children get correlation values above 0.632. From the results of these research demonstrate that children who play the Pacman has the ability to quick in decision making and to have high concentrations. Because playing the game using the right brain or our imagination so that when applied in real life we are trained to improve concentration and have a strategy in solving the problem.

**Keyword:** decision making, respondent children, statistical method, product moment

### I. Introduction

Gaming applications is growing very rapidly with the concomitant development of increasingly sophisticated technology. Gaming applications are in great demand by all people from children to adults. The author sees the current gaming applications is not a thing that is familiar to the people in addition to the entertainment game can also train the brain to focus and think fast. This research takes the theme of Pacman games that able to train the brain to think fast. The author focuses on the technical discussion of pacman game in which the player to complete the game demands full concentration and should be fast in decision making and strategy to determine the velocity

of the hand to avoid the pursuit of the enemy. This game is simple in terms of its gameplay as well as in terms of graphics but this game can make people curious, especially to determine the strategy to spend food without getting caught by the enemy. From playing this game the player can learn to determine a strategy in a game play, concentrate, and think fast. We uses respondent children ages 6 up to 11 years as a player who will take the data. Every respondent must play Pacman game and then they can answer 10 questions. Resulting data are analyzed with a statistical method; it is "product moment" in correlation technique.

### II. Review of literature

Pacman game is a kind of computer game is a game medianya. Game RPG genre. According to Iwatani who created this game was only beginning to attract the interest of women. The name itself was named Pac Man nails nail Pakkuman which describes (the sound of) the mouth movement when widely opened and then closed in a row as well as the basic concept of eating. Making this game is an evolutionary step at the time because the study of an enemy element that has the ability to Artificial intellgent (AI). Pac Man is the original form of the four enemy ghosts each of them has different goals to beat the player. The first ghost who plays as a striker will be looking for the shortest path approaching the player, forcing the player to avoid it. The second ghost tasked to intercept the path of the road dodge nearest player. The third ghost is also in charge of the intercept in the middle of

the maze and try to prevent players using the tunnel in his side. Meanwhile the fourth ghost just around without direction around the end of the game, preventing the player wins. In making this game Iwatani helped by his friends on 9 February 1980 pacman game launched in Japan and got a good reception. Feeling got a good reception from the fans that one of his friends decided to bring the game Pacman to the United States by Bally division Midway and was named Pac Man. Not less than 5 months this game has been ranked top in the game that is often played by young children in the United States. The game is very simple pacman game from its display or play the game in terms of graphics.



Fig.1 Pacman Game

We will use this game to test the gamer if they can concentrate, think faster or make decisions in a short time and the right. The gamers had high concentrations of power and be able to make a quick decision making that enable them to accomplish several tasks.

### III. Results and discussion

In this research we use 10 respondent children years with 10 question. Every respondent must play Pacman game and then they can answer

10 questions. The answer of each question has a score from 2 to 0.

The distribution of each score for each question:

2 = for the most correct answers

1 = to approach the correct answer

0 = for wrong answers

Responden	1	2	3	4	5	6	7	8	9	10	Total
A	2	2	1	1	0	1	2	2	1	1	14
B	2	1	2	2	1	2	2	2	1	0	15
C	1	2	1	1	1	2	1	1	2	1	13
D	2	2	1	2	1	2	1	2	2	1	16
E	1	2	2	1	2	1	1	1	2	0	13
F	2	1	2	1	0	2	1	2	1	0	12
G	2	1	2	2	2	1	1	2	0	0	13
H	2	2	2	1	0	2	2	2	0	0	13
I	2	2	2	2	1	2	1	2	2	0	16
J	2	2	2	1	1	2	2	0	1	0	12

Fig.2 Resulting data

Example calculation of the number 3:

Correlation with the total score of 3 questions.

Description:

X = question number 3

Y = Total Score

XY = Total score number 3 multiplied by

the total score

Correlation technique used is correlation technique "product moment" that the formula as follows:

Responden	X	Y	X <sup>2</sup>	Y <sup>2</sup>	XY
A	1	14	1	196	14
B	2	15	4	225	30
C	1	13	1	169	13
D	2	16	4	256	32
E	1	13	1	169	13
F	1	12	1	144	12
G	2	13	4	169	26
H	2	16	4	256	32
I	1	12	1	144	12
J	2	14	4	196	28
Total	15	138	25	1924	212

Fig.3 Processing data

$$\frac{(10 \times 212) - (15 \times 138)}{\sqrt{(10 \times 25) - (15 \times 15)} \sqrt{(10 \times 1924) - (138 \times 138)}}$$

$$\frac{2120 - 2070}{\sqrt{25 \times 196}}$$

$$\frac{50}{\sqrt{4900}}$$

$$= 0,714$$

Having calculated the correlation between the total score of each question, obtained the following results:

1=0,286

2=0,470

3=0,714

4=0,714

5=0,555

6=0,720

7=2

8=0,690

9=0,710

10=0,660

To know the data is significant or not it is necessary to look at the data "product moment." For the number of respondents is 10, based on the table, which is in need of a significant level of 0.632. Then the data generated from the study proves that children who acquire the result is 0.632 or more children who are able to think quickly and concentrate.

After doing research, it turns out 8 of the 10 children get correlation values above 0.632. From the results of these studies demonstrate that children who play the Pacman has the ability to quick in decision making and to have high concentrations. It shows that a child who likes to play games does not mean stupid. Playing games is actually able to train children to concentration and faster in decision making. The game is able to improve the performance of the brain and stimulate the brain in receiving story. Playing games is not an exaggeration to improve brain performance even has much less saturated capacity compared to study or read a book. If applied in daily life we can learn about strategies to solve problems, able to take the right decision.

#### IV. Conclusions

Game can be described as the very big thing. The game have any levels and able to make his children always to play creatively and do not abusing the game. The children who play tpacman game can improve their

concentration and have a strategy in solving the problem.

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