
Effectiveness of Pomodoro Technique on Memory Retention among Psychology Students in a University in Quezon City, Philippines

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Abstract. The Pomodoro Technique involves allocating 25 minutes to a task followed by a 5-minute break, aiming to enhance productivity. These short breaks, beneficial for memory, aid students in better-recalling information. According to Ritter (2007), the average person's mind tends to wander 15-20% of the time. Among various time management techniques, this experiment aims to determine the Pomodoro Technique's efficacy specifically for memory retention. Understanding memory's crucial role in academic performance, this study aims to address the technique's relevance to students' learning outcomes. The research experiment involves 75 participants from 1st year and 2nd year students at a university in Quezon City, Philippines; the participants were divided into experimental and control groups. The study aimed to assess the effectiveness of the Pomodoro Technique in enhancing memory retention. Time management is pivotal for students, yet procrastination persists as a challenge affecting various aspects of life. The results indicated that the technique did not yield a statistically significant effect on memory retention. It is essential to note that these findings may be influenced by factors such as time restrictions and other variables faced by both researchers and participants, warranting further exploration into the different aspects of the Pomodoro Technique's application in academic settings.

Keywords: Pomodoro Technique, Memory Retention, Psychology Students, Philippines

Introduction

One of the most crucial abilities that a student should have is time management. Given all of the problems that students face in terms of completing schoolwork, house chores, work, and personal priorities, where time management is critical, most people fail, which can be a severe concern in the fast-paced world we humans live in as it can affect multiple facets of one's life. Most people wonder if it is beneficial for them to overcome procrastination and lack of time management. Many time management techniques can help with such a problem, such as Pareto Analysis, Parkinson's Law, and Eisenhower Matrix, among others. Given the many ways procrastination can be kept in check, the researchers have decided to narrow down on the Pomodoro Technique as it is what the researchers found to be most useful for their experiment given the time restrictions. The Pomodoro Technique is a time management method wherein there are 25 minutes given per task followed by 5-minute breaks. Since breaks improve overall memory, it allows students in particular to recall more information when necessary. According to Ritter (2007), the average person's mind wanders 15-20% of the time.

According to a study published in the journal *Cognition*, small breaks can keep your attention span on track. Alejandro Lleras, the study's lead and a psychology professor at the University of Illinois, noted that the mind tunes out after focusing constantly on a single topic. "When faced with long tasks (such as studying for a final exam or filing taxes), it is best to impose brief breaks on yourself," he said. Brief mental pauses will actually assist you

in remaining concentrated on your activity!" (Lleras, 2011) The Pomodoro Technique works to improve memory due to the fact that it helps the brain receive and retain information better by taking brief breaks, resulting in improved retention of the subject. Memory is the location where information is kept, as in a storehouse of memory store. In addition, he also referred to memory as the mental processes used to acquire (learn), store, or retrieve (remember) information (Radvansky, 2007).

For many individuals, time poses as an adversary. Deadlines induce anxiety, resulting in diminished productivity and a tendency to delay tasks, which led the developer and entrepreneur, Francesco Cirillo to develop the Pomodoro Technique in the late 1980s as a time management instrument. It is an organized method of processes, tools, concepts, and ideals for learning how to manage time and transform it from a cruel predator to an ally in order to increase productivity. It is founded on a set of concepts that are based on self-observation and awareness. Hence, the Pomodoro Technique allows people to divide larger jobs into manageable elements and allows people to consider their day as a series of sessions. The Pomodoro Technique also encourages people to take a break while doing tasks, but that won't guarantee people to finish the task on hand.

The Pomodoro Technique may or may not work for everyone, however, this technique is a great tool to help students focus when studying, because this technique is a structured series of shorter periods of focus that builds in time for your brain to take a break (Pittsburgh, 2016). As such, this experiment aims to answer this question, specifically if said technique has any significant effect on memory retention of the 1st-year and 2nd-year Psychology Students at a university in Quezon City, Philippines. In this experiment, the researchers expect this experiment to result in either the Pomodoro Technique having a significant effect on memory retention or not. Through the results of this study, the researchers can benefit from understanding the benefits and effectiveness of the Pomodoro Technique on memory retention among 1st-year and 2nd-year Psychology Students.

Methods

This research utilized an experimental design or approach where one independent variable is manipulated and applied to one dependent variable to measure its effect on the latter (Longe, 2020). The independent variable in this study is the Pomodoro Technique and the dependent variable is Memory Retention. Additionally, the type of research design that the researchers used was True Experimental Research Design. This type of research design relies on statistical analysis to approve or disprove a hypothesis (Longe, 2020). Furthermore, the researchers used the Between-Group Design, wherein the researchers divided the one hundred (100) participants into two (2) groups; the participants were randomly assigned to the control and experimental groups. Both groups received the same review material, however, the control group used their usual study habit or method, while the experimental group utilized the Pomodoro Technique, wherein the researchers set the timer for 25 minutes to study and 5 minutes to rest, in a total of 30 minutes. After this, the participants took the guided response test, a multiple choice about a specific topic.

Data Analysis

The researchers utilized the T-test as the statistical treatment for this study. Using a T-test, the researchers were able to test the hypothesis and whether the treatment given to the experimental group had an effect on them or not (Bevans, 2020). According to Kirkwood, when comparing two populations, it is important to pay attention to whether the data samples from the populations are two independent samples or are, in fact, one sample of related pairs (paired samples). In assessing the effectiveness of the Pomodoro Technique on Memory Retention, the type of t-test that was used is the Independent-sample t-test, also known as the

two-sample t-test. The two-sample t-test investigated whether there was a difference between the control group and the experimental group.

Results

Table 1. Demographic profile of the participants according to Age

Age	Frequency	Percentage
18	14	19%
19	28	37%
20	17	23%
21	8	11%
22	2	3%
23	4	5%
24	2	3%
TOTAL	75	100%

Table 1 shows the demographic profile of the participants according to their age. There were 75 participants gathered from the 1st-year and 2nd-year Psychology students. The majority of the students were 19-year-olds with a percentage of 37%. There were 17 participants (23%) aged 20-years-old, 14 participants (19%) aged 18-years-old, 8 participants (11%) aged 21, 4 participants (5%) aged 23, and 2 participants (3%) each for ages 22 and 24.

Table 2. Demographic profile of the participants according to Year Level

Year Level	Frequency	Percentage
1st-Year	37	49%
2nd-Year	38	51%
TOTAL	75	100%

Table 2 shows the demographic profile of participants according to year level. There were 75 participants in total from the 1st-year and 2nd-year Psychology students. The 2nd-year Psychology students consisted of 38 participants (51%), and the 1st-year Psychology students consisted of 37 participants (49%).

Table 3. Statistical summary of the effectiveness of the Pomodoro Technique on the students' memory retention

	Standard Deviation		df	CV	P-Value	Value (t)
	Control	Experimental				
Pomodoro Technique to Memory Retention	6.02	5.79	74	0.6778	0.5	0.4514

Table 3 presents the statistical summary of the effectiveness of the Pomodoro Technique on the students' memory retention. With the use of a t-test with a P-value of 0.5 to determine the difference between the two groups. If the sample's t-value is higher than the critical value, then the null hypothesis will be rejected. Based on the tabulated data, the critical value (CV=0.6778) is higher than the T-value (t-value=0.4514), meaning that the null hypothesis is accepted.

Discussion

The purpose of this study was to determine the significance of the Pomodoro Technique on Memory Retention among 1st-year and 2nd-year Psychology students. The control group used their usual study method, may it be group discussion or self-study within 30 minutes, while the experimental group utilized the Pomodoro technique, which was timed for 25 minutes (review), and 5 minutes (rest). After reviewing the materials, the participants were given the multiple-choice questionnaire to determine the significance of the Pomodoro technique. Based on the results from the tabulated data, the study hypothesizes that the Pomodoro technique had no significant effect on the Memory Retention of 1st-year and 2nd-year Psychology Students.

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