POMODORO TECHNIQUE FOR IMPROVING STUDENTS' READING ABILITY DURING COVID-19 PANDEMIC

Oleh:
Kisno
Program Studi Manajemen, Sekolah Tinggi Akuntansi dan Manajemen Indonesia (STAMI) Pematangsiantar
email: d.shinoda85@gmail.com

Abstrak
Pandemi Covid-19 telah merubah pola dan proses belajar dan mengajar pada hampir semua lembaga pendidikan di Indonesia. Durasi proses pembelajaran telah menjadi salah satu faktor penting selama masa belajar dari rumah karena mahasiswa tidak lagi dibebani dengan masa belajar sepanjang hari seperti sediakala. Penelitian ini bertujuan untuk mengetahui bagaimana Teknik Pomodoro meningkatkan kemampuan membaca selama masa belajar dari rumah. Penelitian ini menerapkan rancangan kuasi-eksperimental yang melibatkan sebanyak enampuluh mahasiswa sebagai sampel. Setengah dari sampel tersebut mengalami pembelajaran dengan menggunakan Teknik Pomodoro dan sisanya belajar dengan menggunakan teknik durasi berkelanjutan sebagaimana yang telah ditetapkan di dalam jadwal perkuliahan. Pretes dan postes kemampuan membaca digunakan sebagai instrumen untuk mengumpulkan data dan skor hasil tes dianalisis dengan menggunakan Ms. Excel 2019. Hasil pengujian t sampel bebas menunjukkan hasil 0.0000 dengan artian bahwa nilai signifikansi berada di bawah 0.005 dan rataan nilai kemampuan membaca mahasiswa yang menggunakan teknik Pomodoro meningkat secara signifikan. Secara ringkas, Teknik Pomodoro direkomendasikan sebagai salah satu teknik manajemen waktu pembelajaran yang efisien dalam meningkatkan kemampuan membaca mahasiswa selama masa belajar dan mengajar di rumah.

Kata Kunci: Kemampuan membaca, Teknik Pomodoro, Belajar di/dari Rumah, Pandemi Covid-19

1. INTRODUCTION

Covid-19 has been a pandemic situation which influenced all aspects throughout the world. Education sector has been one of the aspects which experienced fundamental changes due to the pandemic. Face to face intraction that was normally performed in the classroom has now turned into another channel such as virtual meetings through many platforms suh as Zoom, Whatsapp, Google Meet, etc. Such situation indeed shifted the normal way of teaching and learning process in most all educational institution in Indonesia and the world. Online and offline method of learning have been performed in order to enable the learning process keep going during the pandemic situation.

The implementation of both online and offline learning need an innovative strategy in order to accomplish a meaningful learning. This could not be separated from the quality of teachers or lecturers and students in order to use and implement the benefit sides of information and technology. In other words, the quality of human is one of the most essential requirements in this rapid globalization era era (Zainuddin, 2014). Eventhough the teaching and learning process is carried out by teacher and students at a glance, the responsibilty of society becomes one of the supporting factors in order to improve education (Rohman & Safitri, 2018). Educators and all education participants have to do a change in solving the challenge in teaching and learning process (Rohmah, Saleh, Faridi, & Fitriati, 2019).

During online learning process, gadgets become a "must-have" item and during Covid-19 pandemic, the use of gadget probably rises up to 100%. There is no more limitation about the policy of bringing gadget whether it is primary, secondary and higher education level since the learning process have been converted into Study from Home (SFH). In university level for instance, students cannot be separated from mobile phone for many purposes whether to make a call, to send messages, even to use social media (Purnamasari & Safitri, 2016). Using gadget is permissible both in online and offline learning at Sekolah Tinggi Akuntansi dan Manajemen Indonesia (STAMI), Pematangsiantar, North Sumatera, but during online study due to the pandemic, students complained due to most all subjects they attend are delivered in the form of assigments or homework and sadly the assignments given are similar to the normal assignment when they were present in face to face learning process in classroom. That is to say, assignments burden the students and there is no innovative way to ease their burden. The duration of attending a subject varies from two to four credits and if they contract six to eight subjects in a semester, it means they will get six to eight assignments simultaneously every week.

English subject (two credits) has been one of an obligatory subject and the problem found during the online learning process was students lacked of motivation due to the "butterfly effect" of many assigments given by other subjects. This problem is similar to the study carried out in Bojonegoro

Regency about creativity and innovation in English Langauge Education (Purnama, Ningrum, & Prastiwi, 2019) however a different way of solving the problem is distinguished by using Pomodoro Technique. In order to avoid boredom, the students are asked to do "functional reading" using Pomodoro Technique. This study aims to investigate whether the implementation of Pomodoro Technique for time management is successful in improving the students' reading ability in English subject. The significance of this study is beneficial to readers especially educators and education participants to minimize distraction when using gadgets so as to improve their concentration during study period of time.

2. METHODS

This study implemented quasi-exprimental research design which employ Pomodoro Technique for time management to a control group to provide some control over additional variables (Ary, Jacobs, Irvine, & Walker, 2019). This design could be beneficial when random assignment of participants to groups or the use of a control group was not possible. This study implemented pretest-posttest nonquaivalent-group design (Abbuhl, Gass, & Mackey, 2013). The study was carried out during online learning in English subject due to Covid-19 pandemic from March to May 2020 in both Management and Accounting study programs of Sekolah Tinggi Akuntansi dan Manajemen Indonesia (STAMI), Pematangsiantar.

This study involved 60 students from both Management and Accounting Study Programs in 2019/2020 academic year. 30 students from Management Study Program was assigned as the experimental group (E) and the remaining from Accounting Study Program was as control group (C).

The students were given a 500-700-word passage in a meeting lasting for 100 minutes. The difference focused on the technique which in experimental group, the students were asked to perform reading the passage using Pomodoro Technique for time management. They were asked to block their time into four intervals. In the first interval, they did pre-reading activities for 10 minutes. After that, they set their reading time into 25 minutes using mobile phone timer and alarm. Then, they were allowed to take a break without touching their mobiles in order not to distract their break time. In this second interval, they were free to do anything they liked such as watching TV, listening to music, taking a short nap for 5 minutes. After the break, they had to go to the third interval by resuming reading for 25 minutes. In the fourth interval, they were given a chance to take a break for 5 minutes and completing the post-reading worksheet afterwards. The last 15 minutes were used to ask them to deliver closing statement.

In control group, the students joined the pre-reading activities for 10 minutes. Then, they read the passage continuously until one hour. The next 10 minutes were spent to complete the post-reading worksheet and upon completing the task, the discussion were commenced between the teacher and the students for 20 minutes. The intervals between experimental (E) and control (C) group can be seen in Table 1.

Table 1 Time Intervals between Experimental and Control Group

Interval (minutes)	E	Interval (minutes)	C
10	Pre-Reading Activities	10	Pre-reading Activities
25	Reading	60	Reading
5	Break	10	Reading Test
25	Reading	20	Discussion
5	Break		
10	Reading Test		
20	Closing statement		

The reading test worksheet was used as the instrument for collecting the data. This worksheet were designed and converted into Google Forms so that the students were able to access everywhere. The test consisted of 5 items covering 3 reading skills as can be seen in Table 2.

Table 2 Test Blueprint

| No	Reading Skills	Number of Items	Estimated finishing Time (minutes)
1	Finding the main idea in paragraphs	1	4
2	Defining vocabulary	3	3
3	Distinguishing between fact and opinion	1	3

Having obtained the pre and post test score of the students in Experimental Group and Control Group, the data was then analyzed using Ms. Excel 2019. A spreadsheet such as Ms. Excel can be used to construct powerful demonstrations of statistical ideas for teaching purposes and data analysis (Chaamwe & Shumba, 2016).

All students' scores obtained from the result of the test in Google Form and then they were compared by calculating the scores average between Experimental Group and Control Group using Ms. Excel. Then, the significance value was calculated using Ms. Excel formula of paired t-test paired two samples for means with following steps:
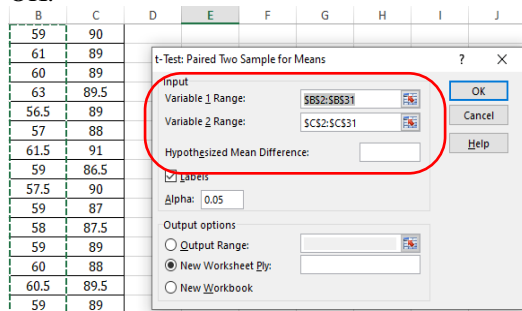1. Open Ms. Excel Spreadsheet, click Data Tab, then click Data Analysis
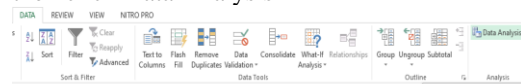
2. Select t-Test: Paired Two Samples for Means
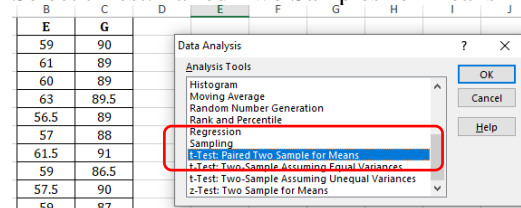
3. Input the students' score of Control Group into Variable 1 Range, and the Experimental Group into Variable 2 Range. Click Labels, the click OK.

3. RESULT AND DISCUSSION

Having used Ms. Excel for analyzing the data, the result of independent t-test on post-test score is 0.0000 which means that the significance value was lower than 0.05 (0.0000 > 0.05) or in other words this rejected the null hypothesis and the alternative hypothesis was accepted. This means that there was a significant difference between the score of the experimental group and the control group as is shown in Figure 1.

t-Test: Paired Two Sample for Means		
	C	E
Mean	59.633333	58.866667
Variance	2.8609195	1.7057471
Observations	30	30

Figure 1. Score Average between EG and CG

t-Test: Paired Two Sample for Means		
	C	E
Mean	60.6333	88.8667
Variance	2.8609	1.7057
Observations	30	30
Pearson Correlation	0.5703	
Hypothesized Mean Difference	0.0000	
df	29.0000	
t Stat	-108.0813	
P(T<=t) one-tail	0.0000	
t Critical one-tail	1.6991	
P(T<=t) two-tail	0.0000	
t Critical two-tail	2.0452	

Figure 2. Descriptive Statistics

In Figure 1, it is clear that the average score of pre-test of experimental group and control group was not very significant where the scores average of the Control Group was a bit higher than the Experimental Group.

The descriptive statistics result in Figure 2 shows that there was a sharp increase of the students' score in experimental group compared to the control group. Although both groups' score average increased, the students taught with Pomodoro Technique for time management obtained a considerable reading score increase while the other one did not.

Reading is a process of grasping idea from a text, whether it is visual or non-visual text. At a glance and common experience or understanding, reading is a behavioral activity which focus on texts or books, but reading nowadays in 4.0 era develops into other forms. Sitting in front of computers, laptops, gadgets, even watching YouTube or other kinds of visuals could be considered as reading. Reading is stated as a skill related to all aspects of knowledge social science, natural science, tradition etc. (Hasanudin & Puspita, 2017).

However, this "reading definition" is restricted in the way of behavior in which someone who reads a book. This restriction is purposely changed by the disruptive situation and condition. Reading in this millennial era is not limited to books or something that is read with hardcopy items but reading transforms into another form such as digital books or texts.

The notion of reading has now broadly changed. When someone watches videos, chats with friends, comments on other postings or statuses are the forms of reading in millennial and post-millennial era. It looks like a simple thing, but someone has to "read" before responding to a chat, a posting, or a status-update.

In the notion of visual or non-visual text, all texts at a glance are visuals. This does not prevail anymore, since the literacy has changed, the concept of visual or non-visual text are also changed. The visual text is the text which is supported with visual items (pictures, infographics, and videos) and non-visual text is the other form which is not supported with picture, infographics, and videos. Both forms could be static and dynamic, it depends on the way how the text is displayed.

Functional Reading is another type of reading in which a reader does not only grasp the idea, but also understands and totally comprehends the text read. This is a new issue in reading world, not only be able to read and answer the post-reading questions, but catch the idea of the author and convert it to other useful things such as sharing the review and crystalizing the idea after reading into meaningful and positive actions.

This is the issue of nowadays education, everybody reads or everybody literally reads, but the question is to what extent after reading, someone could share the positive vibes? This is also a challenge of the definition of reading nowadays. Reading takes time and time in reading should be managed in order to avoid distractors.

Pomodoro Technique was found by an Italian student Francesco Cirillo who faced difficulties such as unable to manage distraction during learning process (Ahmed, Chambers, Frontz, & Voida, 2014).

During Covid-19 pandemic, most of all activities are carried out via online interactions and

one of this activities is teaching and learning process whether it is at school or at higher educational institutions. Some may result in good and positive, but other may result in negative ways.

One of the positive way is learning by reading. As is stated in the previous section about reading and national literacy movement, reading is one of the solutions. Everybody reads other statuses or updates, everybody watches other updated or new postings, but the integration of functional reading and time management work in order to produce "good vibes". Pomodoro Technique for time management gives a "brand-new technique" for time management. Instead of doing something in durable work, Pomodoro Technique presents as the icebreaker of the continuous activities. Activities need "break" and Pomodoro Technique facilitates this chunks or break after a certain work-time. It includes the formation of self-discipline character: to survive from distraction. Distraction nowadays also transforms, the digital distraction such as digital advertisements or digital ads, digital online or offline games, and digital social medium. This technique serves as the part of teaching and learning method and learning resources, media, and methods must be adjusted to the aim of learning, learning characteristics, time allotment, and condition of an educational environment (Siregar, 2011).

The role of "break" in Pomodoro Technique for time management is the key success of the substantial students' performance in English subject. The continuous work session as was implemented in control group resulted in lack of dopamine release and finally decreased motivation and productivity (Browne, Raeside, & Gray, 2018). Dopamine is an essential chemical messenger in the brain that signifies various functions such as reward, motivation, memory, attention, and body-movements regulations (Julson, 2018). Related to the online learning during Covid-19 pandemic situation, students felt that they got more stressful feeling since every subject they attended assigned them to work on many tasks, homework, and written assignments. Their focus became screwd up and they had to battle with time or assignment deadlines. When the students are taught with continuous duration, they got bored and in this situation dopamine was produced in a small number. Therefore, their motivation and productivity was gradually decreased during attending online learning and this influenced their memory and attention in reading a 500-700-word passage. Break session during the intervals in Pomodoro Techniques helped them to relax at a certain time since they were allowed to do anything they wanted except playing with mobile phone.

Pomodoro Technique is a simple time management method which was created by Francisco Cirillo in 1992 and taught to others since 1998 (Cirillo, 2006). Not only does Pomodoro

improve work and learning efficiency, but it also helps people take the benefit of flexible and effective time usage. A primary Pomodoro is 25 minutes and do not exist a half Pomodoro (Feng, 2016). Pomodoro Technique for time management implemented during English subject in Sekolah Tinggi Akuntansi dan Manajemen Indonesia is shown in Figure 3.
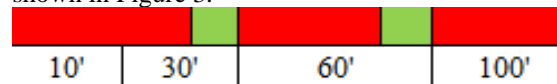

Figure 3. Pomodoro Technique in 100 Minutes (2 Credits)

Figure 3 illustrates how Pomodoro Technique for time management works. The first 10 minutes was spent by doing warming up that was completing pre-test activity. The Next 30 minutes was spent with "work" or reading activity with a 5-minute break. During the break, the students enjoyed their spare time by making coffee, taking a nap, listening to music, going to toilette and so on. The next interval was filled with the similar activity, continuing reading and break. The final interval was filled by post-rading activity or post test and discussion or reflection upon what the students had completed during the study. This intervals could also be named with One-Pomodoro Cycle.

Using Pomodoro could stimulate and and encourage a clear-mind thinking, concentration, and consciousness and it works best with 25-35 minutes, up to 40 minutes (Cirillo, 2006). It does not mean that Pomodoro Technique works only for a 25 to 40-minute task but the work could range from 25-40 minutes with 5 to 10 minutes chunks for break time. After performing One Pomodoro Cycle for 2 credits or 100 minutes, a performer could have the accumulation of the chunks that is 15 minutes as the reward of the total performance. Thus, if someone performs a Four Pomodoro Cycle, the perfomer worths 20 to 40-minute-break at the end of the cycle in order to (assuming that 25-minute work worths of 5-minute break and 40-minute work worths of 10-minute break). As a simulation, if someone completes a 120-minute work, he or she worths of 40-minute rest time before continuing the next activity goal or target.

This Pomodoro cycle for time management is appropriate to the activities during study from home or other activities impacted by the lockdown policy. Most of the cases of online learning during Covid-19 pandemic is "desk-activity" which means doing activity in front of gadgets or computers or laptop and this "desk-activity" leads to monotonous work or boredom. Working or studying in front of desk for long hours actually reduces productivity and regular breaks keeps the perfomers of Pomodoro Technique focused and energized (Giesbrecht, 2015).

Pomodoro Technique was practiced in English subject in Sekolah Tinggi Akuntansi dan Manajemen Indonesia (STAMI) through reading

activities in order to support National Literacy Movement (Gerakan Literasi Nasional) particularly in higher level education. The artifacts or tools for carrying out Pomodoro Techniques are not difficult to work or find, as illustrated in Figure 4.
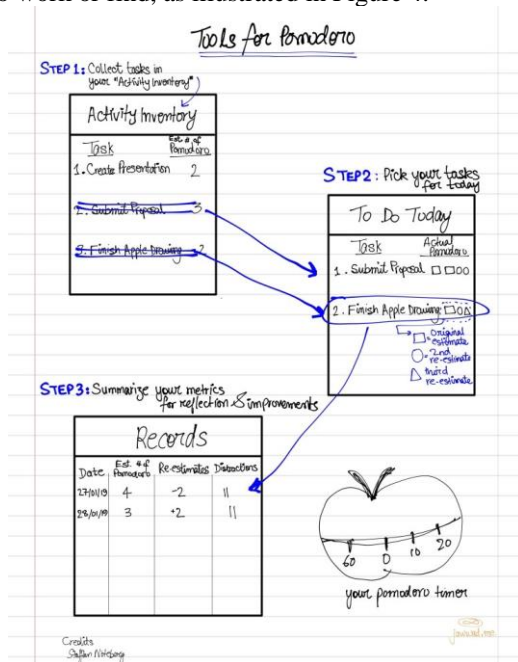

Figure 4. Pomodoro Tools or Artifacts (Noteberg, 2010)

The supporting tools are:
1. To-do-list
   The perfomers must have a list of tasks. The tasks are listed as the commitment for the day and acts as the goal for the day.
2. Log-book and plan activity
   The tasks as the goal for the day are then written in a book with the parameter of performance metrics such as completed, delayed, and the lists of the work to complete in the near future.
3. Timer
   In this 4.0 era (information society era), timer is available in gadgets such as smartphones. Set the timer based on the target or work with alarm for the chunks or breaks.

However, every best practice or best system has some drawbacks. Particularly, when carrying out online learning, some distractors may appear since the work or study is gadget-based. The temptation of online sources can distract the perfomers of Pomodoro Technique for time management. Sometimes, it is hard to deal with interruptions and distractors internally and externally. Internal distractors may occur from the self-demotivation, trying to do other things outside the goals while external distractors may come from families, friends, including some "free-attractive webinars" offering many solutions for other issues related to life-management during pandemic situations and future-anticipating activities could be done for preparing new-normal life after pandemic.

4. CONCLUSION

The implementation of Pomodoro Technique in improving the students' reading performance was successful during two-month-online learning at Sekolah Tinggi Akuntansi dan Manajemen Indonesia (STAMI) Pematangsiantar. Pomodoro Technique is suggested for solving the problem of self-motivation especially in online or offline learning in pandemic and non-pandemic situation.

In general, here is how to practice Pomodoro Technique for other kind of activities during pandemic and non-pandemic situation:
1. Planning
   Select the upcoming activities targets or goals.
2. Tracking
   Start the work listed in the plan and collect the metrics.
3. Recording
   At the end of the day, record the daily performance and observatios in the record sheet.
4. Processing
   Convert the data of recording including distractors and how to cope with the distractors.
5. Visualizing
   This stage is the improvement of what has been done using Pomodoro Technique including defending Pomodoro.

It is also suggested that during break time or chunks when performing Pomodoro, the perfomer not do activities spending more mental energy such as discussion with others, responding emails, reading news, etc. Instead, doing more physical activities such as doing light exercise, having coffee or tea break, walking around, listening to relaxing musics would be more helpful.

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