The Effect of a Visible Timer on Writing Speed

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ENGL 21003: Writing for the Sciences

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May 11, 2025

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Ⅰ. Introduction

Students, teachers, workers, etc. have long admitted to having dealt with some sort of procrastination, whether purposeful or not. It has been reported that 20 percent of all adults deal with chronic procrastination (Madiha-Hashmi, 2022). Procrastination, specifically regarding work or school deadlines, can bring major feelings of dread and anxiety, causing further delay in completing said task. However, procrastination is not something one can easily escape, but adjusting the speed at which one writes may help relieve feelings of anxiety when having a shorter time frame. Yet how can one make oneself write faster? This question has been tested previously, as timed writing tasks are a common challenge for students and civilians alike, especially during exams, standardized assessments, work deadlines, etc. Many researchers have explored how time pressure affects performance, but less is known about how the visibility of a timer specifically impacts writing speed. It is important to understand how the psychological effects of visible timing could help create better writing strategies for people. Students, especially as they may find a visible timer to be a new tool used to help them while under a strict deadline.

Previous studies show that time pressure can improve performance by inducing a sense of urgency. In *Timed Tests and Their Influence on Student Performance*, the author explains how time pressure affects the performance of students. Browning believes that though timed conditions may improve focus among some students, it also induces stress that degrades performance, particularly for pressure-stressed students (Browning, 2024). Although Browning's study is not specifically interested in writing speed, it predicts that time pressures will result in

quicker responses. Such results mean that although time pressures might force students to write more quickly, the quality of their writing could be compromised. Browning's study provides some indication of the overall effect of time pressure supporting the assumption that time constraints external to the individual might influence performance when speed is the concern. This study is a good demonstration of the more general time pressure effects that support the idea that external time limits can influence performance where speed is a concern. Which was similar shown by another study. In *The Impact of Clock Timing on VDT Visual Search Performance Under Time Constraint*, the authors analyze how a visible clock influences performance when performing visual search tasks under time constraint. Their research found that participants with aware moderate time pressure acted differently compared to participants not given a visible timer. While participants with time pressure exerted more attention and speed, they also made more errors during their visual search tasks (Hu et al., 2024). Their study finally determines that even though visible cues to time can produce faster responses, they can come with worse accuracy, too, supporting the presumption that time constraints might have a negative effect on the quality of work. Both experiments strive to support that while performance can be accelerated under the constraint of time, the quality of the result might take a hit.

Overall, prior research aids the understanding of how time limits might influence performance, further supporting the rationale for my hypothesis that the presence of a timer will positively impact writing speed. Combining prior research as well as conducting my own study to examine the effect of time pressure on writing speed rather than accuracy or quality, understanding how a timer may impact writing speed is ultimately a condition that may allow students to broaden/improve their writing strategies.

Research Question: Does having a visible timer result in a greater number of words written during a timed writing task compared to writing without a visible timer?

Hypothesis: Participants will have a higher word count when responding to a prompt while having a visible timer present than when given a similar prompt and there is no timer.

Ⅱ. Methodology

To examine how the presence of a visible timer affects writing speed, a test was conducted in which participants were timed as they completed writing tasks. The hypothesis is that as participants complete the experiment, they will have written more words on the second writing prompt, proving they increased their speed when seeing a visible countdown. To test this, the experiment will involve two conditions: one in which the timer is visible to the participant and one in which it is not.

There were a total of 23 participants for this experiment. All 23 writing samples were gathered during the Writing for The Sciences class held at the City College of New York. There were a variety of ages, but predominantly were undergraduate students aged 18-20.

Procedure:

Participants were asked to follow verbal as well as visible instructions on a slide show. They were tasked with completing a timed writing task under two different conditions: with a visible timer and without a visible timer. After sitting and being told to quietly take out a writing utensil, they were explained what was expected. A double-sided sheet labeled A on one side and B on the other held two prompts, both with the same difficulty and made personal to ensure students were able to write for the allotted time of an entire minute. Importantly, participants were told that their wiring was anonymous to ensure trust. After being given instructions,

students began to answer side A of the sheet first and were given a full minute to respond after. They were told to flip the page to side B, where they would once again answer the prompt given for an entire minute, with the visible countdown presented on the slideshow. The task was the same in both conditions, with the only variable being the visibility of the timer.

In the timer-visible condition, participants will be shown a timer on a screen throughout the entire writing task. In the timer-hidden condition, the timer will be hidden from view during the writing task, although the task duration will still be controlled.

After completing both sides, students were asked to pass their papers forward to be collected. During the data Collection, the primary measure of interest will be the word count of each participant's response. The quality of the writing will not be analyzed in this study, as the focus is specifically on speed.

III. Results

Table 1.

Raw Data Collection of 23 participants

SIDE	A-NO TIMER VISIBLE	B-TIMER VISIBLE
1	30	30
2	25	32
3	36	38
4	20	24
5	27	31
6	15	33
7	35	34
8	18	27
9	26	26
10	22	28
11	24	32
12	33	31
13	29	32
14	23	33
15	28	26
16	32	42
17	31	30
18	26	31
19	37	40
20	4	24
21	36	22
22	20	32
23	38	38

The first table shows the total data collected from all 23 participants, separated by the side A/B and whether a timer was present or not. On average, participants wrote 27 words per minute when responding to side A of the paper, and on side B averaged 31 words. Showing that, on average, participants wrote 4 more words when there was a visible timer present.

Figure 1.

Displays Writing Speed Differences Data on a Bar Graph
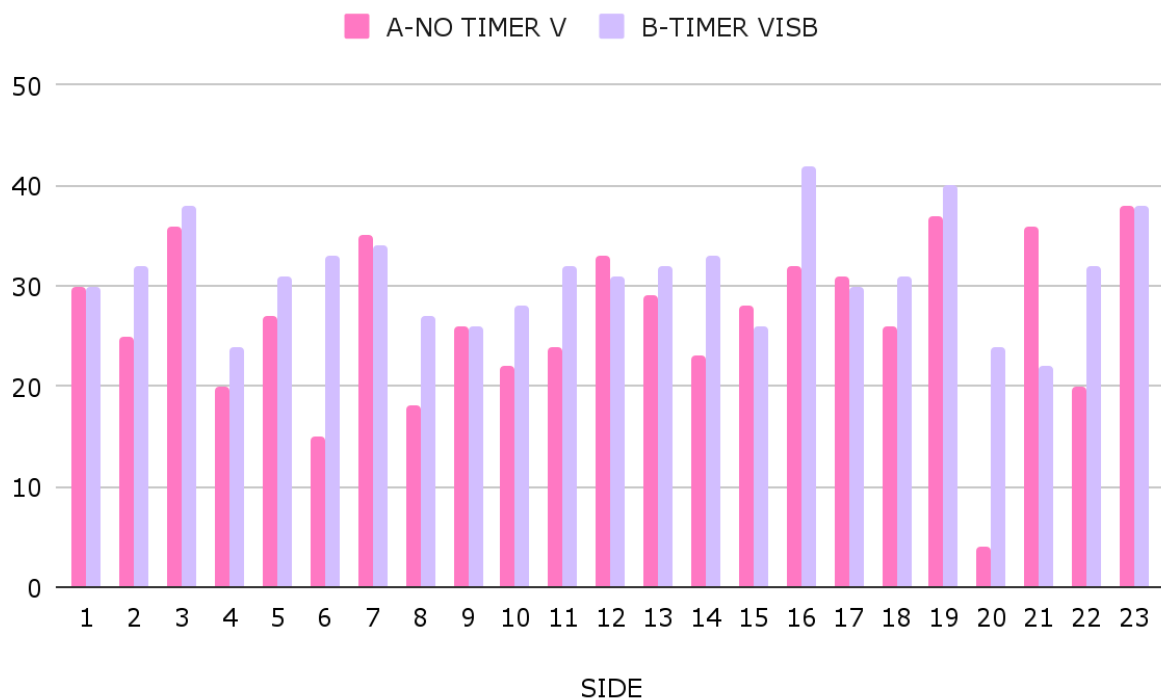
The results derived from the writing speed test revealed an evident contrast between the two states: visible timer and no timer. The rate of words obtained by the subjects under the condition of no-timer was 615, a mean of 27 words. Under the condition of the visible timer, the result of words achieved was 716, a larger mean of 31 words. This would imply that, in general, more words were written when a timer was visible. Second, the no-timer condition had a

standard deviation of 8.1, which means more variation in word count across participants, while the timer-visible condition had a standard deviation of 5.1, which implies more consistent performance. In general, these findings suggest that the visible timer resulted in faster writing and more consistent production.

IV. Discussion

The findings of the current study support the hypothesis that time pressure will enhance writing speed. The results, as displayed through graphs, imply that in general, more words were written when a timer was visible. To further analyze, the no-timer condition (Side A) had a standard deviation of 8.1, which means more variation in word count across participants, while the timer-visible condition (Side B) had a standard deviation of 5.1, which implies more consistent performance. In general, these findings suggest that the visible timer resulted in faster writing and more consistent production. These results are in agreement with prior studies mentioned.

This study and its results are significant because it has real-world resources for students and other individuals within educational settings. Timers may enable students to work more efficiently, which could result in better performance on timed assignments or tests. In addition, the measurable timer can, in certain instances, be an effective antidote for procrastination since it provides students with a direct and tangible need. As supported by the study conducted by Connelly et al. revealing that college students, due to slow writing speeds, may find a decline in grades. Therefore, by implementing a visible timer as done so in this experiment. Students could combat that by using a timer to boost speed and end procrastination.

Although the study was successful and aligned with my hypothesis. There are some limitations for this study. The small number of participants made the sample capable of

representing potential failure in a population generalization to a wider population. By collecting the results of students/staff only in the City College of New York campus, there may have been bias or a different result when having a wide variety of responses from students around the CUNY system. Also, this study merely measured the amount of writing produced, and not the quality, so it's unknown if time pressure affects the quality of work. Another limitation is that some of the participants did not seem to look at the timer regularly or even at all, which could lead to the data simply confirming the hypothesis due to answer engagement. Future research directions and further research on this study could eliminate some of these limitations by, as stated, increasing the sample size and incorporating measures of writing quality. It could also explore the long-term consequences of using timers and a survey to identify what participants think of the timer and whether they noticed the timer or not while being tested.

Ultimately, this research offers proof that a visible timer can enhance writing speed. The research implies that time pressure due to a visible timer can stimulate people to finish work quicker. This data might be helpful to learners and working professionals wanting to enhance their writing productivity, particularly when working under timelines. Later work can also further discover how visible timers can influence writing quality and how the nature of different kinds of time pressure influences performance.

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