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Maia M. Busi
Lindenwood University

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The Effect of Mood on Task Completion Time

Maia M. Busi

Department of Psychology, Sociology, and Public Health, Lindenwood University

Author Note

Maia M. Busi https://orcid.org/0000-0003-0859-5734

Correspondence concerning this article should be addressed to Maia M. Busi, Lindenwood University, 209 S Kingshighway, St. Charles MO 63301. Email: mb281@lindenwood.edu or mmbusi01@gmail.com

Abstract

Studies on mood and task completion tend to focus on task outcomes and task performance. It is typically found that positive mood states result in better test scores and better task outcomes (Martinez & Bartosek, 2015). This study examines the effect mood states have on task completion time through an anonymous online survey involving a mood manipulation and a timed visual search task. I hypothesized that that participants who were exposed to a positive stimulus will complete a visual search task quicker on average than participants who were exposed to a neutral stimulus. A total of 34 participants completed the survey. Participants were randomly assigned to either a positive stimulus group or a neutral stimulus group where they were asked to view a short video of either positive content (Boscoandhisbigstick, 2020) or neutral content (Weratedogs 2022). A manipulation check was provided to determine if the mood manipulation was effective. Participants then completed a timed visual search activity. An independent samples *t*-test was calculated to compare the mean task completion time between the positive video group and the neutral video group and found there was no significant difference between the groups. In addition, it was found that the mood manipulation had little effect on participants' overall mood states.

Keywords: mood, task completion time, visual search, mood scale, positive mood, neutral mood

The Effect of Mood on Task Completion Time

Previous research on task performance outcomes typically supports the hypothesis that negative mood states result in negative task outcomes. A study by Martinez and Bartosek (2015) found that the level of negative task-irrelevant emotion experienced by an individual has a negative correlation with performance on a multiple-choice exam. In addition, it was found that any level of positive task-irrelevant emotion results in higher exam results than any level of negative task-irrelevant emotion (Martinez & Bartosek, 2015). This suggests that positive emotional states yield higher task performance scores relative to negative emotional states. Chi et al. (2015) support this conclusion, stating that negative mood states result in negative task outcomes in terms of higher number of errors and higher self-sabotage levels. They also found that positive mood states act as a buffer against negative mood states and result in lower levels of self-sabotage and less errors (Chi et al. 2015). Livi et al. (2015) (as cited in Geue, 2018) also note that positivity within work teams results in better personal performance in terms of task outcomes and can uplift personal team member's individual positivity.

Although these studies describe the effects of mood on performance outcomes, there is little research on the effects of mood on task completion time and efficiency. The present study aims to investigate the relationship between mood and task completion time by manipulating participant's moods before they complete a time-recorded visual search task (see Appendix A). I hypothesized that participants who were exposed to the positive stimulus will complete a visual search task quicker on average than participants who were exposed to the neutral stimulus.

Method

Participants

Participants for this study were limited to individuals over the age of 18 who had no impairment to their vision or hearing. An exception was made for participants under the age of 18 who were members of the Lindenwood Participant Pool (LPP). Participants were recruited through social media and the LPP. A study link accompanied by a short description of the study was posted to Instagram, Facebook, and Snapchat. By clicking on the link, participants were anonymously taken to the study Qualtrics page where they could decide whether or not to participate in the survey. Recruitment through the LPP was regulated through a signup link posted to Sona Systems which included a brief description of the study including the estimated time the study would take to complete as well as how many LPP credits participants would receive, which for this study was two. This study met the ethical standards of the Lindenwood Institutional Review Board (IRB) and the Psychology Program Scientific Review Committee (PPSRC).

A total of 34 participants completed this study. Of these participants, 82% (n=28) identified as women, 5% (n=2) as men, and six participants did not specify. Participant age ranged from 18 to 23 years of age (M=20.37, SD=1.63).

Materials and Procedures

Participants were asked to complete an anonymous online study distributed through Qualtrics. The study began with an informed consent document followed by two screening questions concerning the participants' sight and hearing to determine exclusion criteria. Participants were then asked to watch a short video sourced from TikTok that was either positive (Boscoandhisbigstick, 2020) or neutral (Weratedogs 2022). Participants were randomly assigned

to watch one of the two videos. Both videos included a dog as the main focal point and were between 10 s and 15 s in length to ensure the only variable being manipulated was mood. After viewing the short video, participants completed an 8-item mood scale (Fairbairn & Sayette, 2013) measured on a six-point Likert scale (see Appendix B). They were then asked to complete a timed I Spy activity (see Appendix A). The study ended with four demographic questions (see Appendix C) followed by a thank you statement which explained the method and justification of the mood manipulation.

Measures

Mood Measure. The mood measure was derived from Fairbairn & Sayette (2013). The measure included eight statements concerning the participant's current mood that can be categorized as negative mood states (annoyed, sad, irritated, bored), and positive mood states (cheerful, upbeat, happy content). Participants rated the level to which they agreed with each statement based on a six-point Likert scale, with 0 being *completely disagree* and 5 being *completely agree*. Negative and positive moods were scored separately, with scores between 0 and 7 being considered low, scores between 8 and 13 being considered neutral, and scores between 14 and 20 being considered high for both types of moods. This measure was taken as a manipulation check to determine if the TikTok video had its intended effect on the mood of participants.

Task Completion Time. Task completion time was measured by the time it took participants to complete the visual search activity. The time taken to find the 10 hidden items in the I Spy image was recorded in seconds. Qualtrics is unable to determine how many of the 10 items were found by each participant, so the task completion time was defined as the amount of time spent on the I Spy question in the survey. The completion times of participants were used to find the mean completion time of each group.

Results

The research hypothesis stated that the positive video group would complete the I Spy task faster than the neutral video group. Data was labeled as unusable if the participant did not complete either the mood scale or the I Spy activity and unusable data was discarded. After calculating the mean mood scale scores for each group, it was found that both the neutral video group (n=20) and the positive video group (n=14) displayed neutral scores for positive mood and low scores for negative mood. The neutral video group showed overall lower scores on the mood scale with a mean positive mood score of 12.10 (SD= 5.23), and a mean negative mood score of 3.70 (SD=3.80). The positive video group had a mean positive mood score of 13.54 (SD=5.70) and a mean negative mood score of 2.62 (SD=3.76). These results show that the mood manipulation did not have a significant effect on the overall moods of participants.

An independent samples t-test was run to compare the mean completion times between the neutral video group and positive video group on the I Spy activity. There was no significant difference between completion time of the neutral video group (M = 81.14, SD = 62.27) and completion time of the positive video group (M = 89.50, SD = 50.02), $t_{(32)} = .416$, $p = .680$. These findings do not support my hypothesis that the positive video group would outperform the neutral video group in task completion time.

Discussion

The results of this study did not support the hypothesis that the positive video group would complete the I Spy task faster than the neutral video group. In addition, the manipulation check showed that the video shown had very little effect on the participants' overall mood. Previous research mainly focused on the effects of negative emotions or negative mood states on

task performance. The results of this study provided insight into the very small effect that positive mood states have on task efficiency.

This study was limited by the small sample size and the missing demographic information from some responses. A larger sample size would provide more accurate results and would likely decrease the large standard deviations found in the task completion time results of this study. Additional limitations occurred in the format of the I Spy activity. Since the measure was focused on task completion time, there was no measurement of task accuracy which would allow for confirmation that the task was successfully completed. Participants were able to continue past the I Spy activity at any time, meaning it is possible some participants did not complete the entire activity before continuing. Future research in this topic should control the task to ensure all participants successfully complete the task. It would also be beneficial to incorporate different variables such as stress level to determine what factors most strongly affect task completion time.

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Appendix A

I Spy Activity

Participants were asked to find: a red apple, a pane, 3 “BEEP”, a birdhouse, a duck, 2 fish in a truck, and a zebra Jeep.

Appendix B

Mood Scale

Negative Mood states

Please indicate to what degree you agree or disagree with each statement **based on your current mood,** with 0 being "completely disagree" and 5 being "completely agree".

Annoyed

Sad

Irritated

Bored

Positive Mood States

Please indicate to what degree you agree or disagree with each statement **based on your current mood,** with 0 being "completely disagree" and 5 being "completely agree".

Cheerful

Upbeat

Happy

Content

Appendix C

Demographic Questions

Q10 What best describes you?

- ○ Man (1)
- ○ Woman (2)
- ○ Other/ non-binary, please specify (3) _____
- ○ Prefer not to say (4)

Q11 What best describes you? Select all that apply.

- ☐ White (German, Irish, English, Italian, Polish, French, etc.) (1)
- ☐ Hispanic, Latino, or Spanish Origin (Mexican or Mexican American, Puerto Rican,Cuban, Salvadoran, Dominican, Colombian, etc.) (2)
- ☐ Black or African American (Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.) (3)
- ☐ Native Hawaiian or Other Pacific Islander (Native Hawaiian, Samoan, Chamorro, Tongan, Fijian, Marshallese, etc.) (4)
- ☐ Asian (Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, etc.) (5)
- ☐ American Indian or Alaska Native (Navajo Nation, Blackfeet tribe, Mayan, Aztec,Native Village of Barrow Inupiat Traditional Government, Nome Eskimo CommunityAsian - For example, Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, etc.) (6)
- ☐ Middle Eastern or North African (Lebanese, Iranian, Egyptian, Syrian, Moroccan, Algerian, etc.) (7)
- ☐ Some other race, ethnicity, or origin, please specify: (8) _____

Q12 What is your age in years?

_____

Q17 Are you a member of the Lindenwood Participant Pool?

- No (1)
- Yes (2)

End of Block: Demographics