

Title	片付けにおける先延ばし行動を軽減させるための妨害通知を用いたきっかけ作りシステム
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Trigger system using disturbance notifications to reduce tidying procrastination behaviors

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While tidying up has been the focus of much attention in recent years, some people actually suffer from an inability to put tidying into action. It has been pointed out that concentration and work efficiency decrease in a messy environment, and a tidy environment is desirable. We developed a "Trigger System with Interference Notification to Reduce Procrastination in Tidying Up" to improve the state of inability to take tidying-up action. The system uses a depth sensor to determine the state of the desk. When the desk is cluttered, the system sends a disturbance notification to the subject. Visual disturbance by flashing room lights was used as a disturbance notification, and was compared to auditory disturbance by noise. The system was tested on 20 graduate students who procrastinated in tidying up, and the results were evaluated based on questionnaires and the state of their desks.

The purpose of this system was to create a trigger for tidying up behavior by causing discomfort to procrastinators by notifying them of the disturbance by flashing the lights in the room. We evaluated whether the disturbance notice caused discomfort to the subjects based on the results of a questionnaire that the subjects answered after the experiment, and whether the disturbance notice triggered them to tidy up. Next, we evaluated whether the visual disturbance, the flashing room lights, or the auditory disturbance, the noise, was more effective as a disturbance notification. Based on these results, we also examined changes in the state of the subjects' desks during the experiment.

The results of the questionnaire survey indicated that all subjects found the disturbance notification by the flashing room light unpleasant and that it interfered with their work. The results of the questionnaire survey showed that the subjects found the notification of the disturbance caused by the flashing room lights to be unpleasant and interfered with their work. It was also suggested that the discomfort may trigger the subjects to clean up their rooms.

The results of the Wilcoxon signed rank sum test showed that there was no significant difference between the two types of disturbance notifications, i.e., those caused by flashing room lights and those caused by noise.

We also evaluated whether there was a significant difference in the effect on the awareness of tidying up between the notification by flashing room lights and the notification by noise disturbance. Using the Brunner-Munzel test, we found that there was a significant difference in the discomfort between the notification caused by flashing lights and the notification caused by noise. However, there was no significant difference between the two in terms of the

disturbance caused by the disturbance notice and the disturbance notice caused by noise. Furthermore, there was no significant difference between the disturbance notices caused by flashing lights and those caused by noise for the three items of "I think my desk is messy," "I felt the need to clean up," and "I am motivated to clean up."

However, based on the results of interviews and changes in desk conditions, it was found that the subjects who perceived that they were not good at tidying up performed better when they were notified of the disturbance by flashing room lights. On the other hand, the degree of discomfort of the noise notification varied from subject to subject, and subjects tended to ignore the notification when they could tolerate the discomfort or the disturbance to their work, which meant that they sometimes did not tidy up. Therefore, we consider that the disturbance notification by flashing room lights tends to be significant as a trigger to reduce procrastination in tidying up for subjects who perceive tidying up to be difficult.

Tidying up is a behavior that is generally associated with a tendency to procrastinate. However, most of the previous studies investigated the relationship between procrastination and schoolwork, and there has been little research on procrastination in tidying up. Therefore, it cannot be said that this system is able to notify the user of interruptions in consideration of competing activities that take priority when the user is putting off tidying up, and it is questionable whether notification by flashing room lights is appropriate. In the future, we would like to investigate the behavior of the target person when he/she is putting off tidying up, and to provide appropriate disturbance notifications that take this behavior into account.