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**SAMSUN UNIVERSITY**

**ENGINEERING FACULTY**

**INDUSTRIAL ENGINEERING DEPARTMENT**

ENDM204 WORK STUDY AND ERGONOMICS

EXPERIMENT REPORT

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**TIME STUDY EXPERIMENT REPORT**

# The Purpose of the Experiment

Time study is a technique used to determine the time required to perform a task or an activity. It involves breaking down the task into smaller steps, measuring the time taken for each step, and analysing the data to identify areas for improvement. Time study has a wide range of applications, from manufacturing and industrial settings to healthcare and education.

In manufacturing and industrial settings, time study is used to optimize production processes and improve efficiency. By analysing the time taken for each step of a production process, managers can identify bottlenecks and inefficiencies and make changes to improve productivity. This can lead to significant cost savings and increased output.

# Apparatus

Only a stopwatch device is required in this experiment.

# Experiment

Design an experiment that involves conducting a time study using a toy drill set:

The set includes plastic blocks with holes, and the goal is to create shapes by inserting screws into the blocks. The shapes will first be made using a screwdriver and then using the drill.

1. Prepare a toy drill set, a screwdriver, plastic blocks with holes, screws, a stopwatch, and a notebook.
2. The person conducting the experiment tries to create a shape on one of the blocks using a screwdriver.
3. The stopwatch is used to measure the time it takes to create the shape.
4. The same shape is then created using the drill. The stopwatch is used again to measure the time.
5. The times measured for each shape-creating operation are recorded in the notebook.
6. This process is repeated for other blocks.
7. The quality of the shapes created using the screwdriver and the drill can also be evaluated.
8. The results can be used to evaluate the performance and ease of use of the toy drill set.

Note: Safety rules should be observed during the experiment. A toy drill set can cause serious injuries when used improperly.

**Practice**:

Design a time study experiment related to the process of making a cake and suggest an improvement idea:

1. First, prepare the materials needed to make a cake: flour, sugar, eggs (etc.), a stopwatch, and a notebook.
2. The person conducting the experiment follows a recipe to make a cake, mixing the ingredients according to the recipe's measurements.
3. The mixture is poured into a cake pan and placed in a preheated oven.
4. The stopwatch is used to measure the baking time of the cake.
5. After the cake is baked, it is removed from the oven and allowed to cool.
6. Once cooled, the cake is removed from the pan and cut into slices. A stopwatch can be used to time the slicing process.
7. The time taken for each stage is recorded in the notebook.
8. The same process is repeated for different sizes of cake pans.
9. Another time study is conducted after implementing the improvement suggestion to compare the time taken before and after the improvement.

Improvement suggestion: To save time during the preparation stage, ready-made cake mixes can be used. This eliminates the need for measuring and mixing ingredients and saves time.

Note: Safety rules should be observed during the experiment. The oven is a hot and potentially dangerous tool.