

TABLE 1 Recommended Steps in Conducting a Work Sampling Study

1. **Define the objective(s) of study.** What is the problem to be studied? Why is work sampling the appropriate technique to study the problem? What is the desired information that will be realized from the study? Formal answers to these kinds of questions help to structure the study, reduce ambiguities, and define expectations.
2. **Define the subjects to be studied.** If the study involves the activities of workers, which specific workers are to be studied? If the study involves machines, which specific machines will be included?
3. **Define the output measure(s).** This applies to situations in which an average task time or time standard will be established by means of the work sampling study. In a factory, what are the parts or products that relate to the activities performed by the subjects in the study? In an office work situation, what are the bills, or claims, or other documents that are being processed by the subjects? If the objective of the work sampling study is to determine a time per unit of output, the output units will have to be counted. If the work sampling study has other objectives, then defining an output measure may not be necessary.
4. **Define the activity categories.** These are the defined states of the subjects that will be identified during the study. If the study includes output measures, the activity categories must correlate with these outputs. But additional categories will likely be included also, such as “idle,” “waiting for work,” and “downtime.” Some of the issues in defining the activity categories are discussed in Section 3.1.
5. **Design the study.** Design of the work sampling study includes the following steps and decisions: (a) Design the forms that will be used to record the observations (Section 3.2). (b) Determine how many observations will be required. This is likely to involve the types of decisions and calculations discussed in Section 2.2. (c) Decide on the number of days or shifts to be included in the study. It is important that the period covered by the study is representative of the usual activities engaged in by the subjects. (d) Schedule the observations. What are the randomized times when the observations will be made (Section 3.3), and what are the routes the observers will follow to make the observations? (e) Determine the number of observers needed.

6. **Identify the observers who will do the sampling.** The likely candidates include the industrial engineer in charge of the work sampling study, technicians who are assigned to this industrial engineer, and first-line supervisors in charge of the subject workers. An alternative approach is to use **self-observation** where the subjects themselves record the data, using a buzzer in the work area or beepers for workers located remotely. The problem with this technique is the risk that bias will be introduced into the results. Training will be required for whoever is assigned to be an observer. Typical training would include making sure the observers understand the objective(s), introduction to the principles of sampling and statistics, practice in identifying the activity categories, and understanding the importance of making the observations at the appointed times. If the study requires performance ratings to be made by the observer, then special training in this function must be provided.
7. **Announce the study.** All those who will be affected by the study should be informed about it. This includes obtaining the approval of the supervisor of the subject population. In particular, the subjects who will be observed are owed an explanation about the study and its objectives. This announcement step is of critical importance. Work sampling studies have failed because workers were not properly informed and their support was not obtained. Only novices and fools would be tempted to perform a secret work sampling study and expect the results to be taken seriously.
8. **Make the observations.** Make all observations according to the schedule. Record the data, and summarize the data each day. At the beginning, before collecting the data, it may be appropriate to conduct a trial study over a one- to three-day period. This will help to work out any “bugs” in the study, such as difficulties in classifying activity categories or recognizing and dealing with biases, or it may lead to a revision in the length of the full study or the number of observations required. Some or all of the data in this initial trial period may need to be discarded if problems exist.
9. **After completing the study, analyze and present the results.** Prepare a report that summarizes and analyzes all data. Make recommendations if appropriate.