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ABSTRACT

This handbook is intended to guide cooperative education coordinators, teachers, inservice coordinators, and teacher educators in conducting time-use analyses. Chapter 1, an introduction to the guide, discusses the issue of evaluation in cooperative education, the benefits of time-use analyses, and common objections to time-use assessment. Examined in the second chapter are various applications of time-use analyses, including developing and modifying training plans, building time consciousness, targeting priorities, fostering detachment, increasing efficiency of placement at training stations, solving problems, forming and substantiating useful evaluations, and freeing up time. Chapter 3 deals with the phases in conducting a time-use study. Various aspects of using the results of time-use studies are discussed in chapter 4, including gathering additional information, evaluating the learning experience, identifying problem areas, modifying the training plan, and talking over the results. Two observation forms and five worksheets for use in conducting time-use analyses are appended, and numerous sample forms and checklists are included throughout the text of the handbook. (MN)

Special Publication Series No. 50

ASSESSING LEARNING TIME AT THE CO-OP TRAINING STATION

Jeanne Desy
Lee Norton
Stephen J. Franchak

The National Center for Research in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210-1090

1985

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For further information contact:

Program Information Office
National Center for Research
in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210-1090

Telephone: (614) 486-3655 or (800) 848-4815
Cable: CTVOCEDOSU/Columbus, Ohio
Telex: 8104821894

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Columbus, Ohio 43210-1090

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FOREWORD

Cooperative vocational education is a method for blending employment and education in order to strengthen the preparation of youth for entry into the labor market. Specific information on students' training station experience has not always been available to cooperative education coordinators. For example, data are often lacking on the amount of time cooperative education students spend in training station activities that are defined in the training plan and that contribute to the acquisition of work skills and knowledge. Such information is vital for those individuals who are interested in evaluating and improving cooperative vocational education programs.

This handbook is intended to guide cooperative education coordinators, teachers, inservice coordinators, and teacher educators in conducting time-use analyses. It can be used in both secondary and postsecondary training station settings for various purposes, such as process evaluation for program improvement, research for explanatory investigations, and inservice programs for cooperative education coordinators or teachers.

Detailed step-by-step procedures involved in planning and conducting time-use observation and analyzing and interpreting data are presented in this handbook. Emphasis is placed on using the results to work toward quality cooperative vocational education programs.

This handbook was developed in the Evaluation and Policy Division of the National Center for Research in Vocational Education under a contract with the Office of Vocational and Adult Education, U.S. Department of Education. We wish to thank N. L. McCaslin, Associate Director, and Stephen J. Franchak, Project Director. The major responsibility for the writing of this document was undertaken by Jeanne Desy, Program Associate. Appreciation is also extended to Lee Norton, Graduate Research Associate, and Stephen J. Franchak for major assistance in the preparation of the handbook.

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Robert E. Taylor
Executive Director
National Center for Research
in Vocational Education

EXECUTIVE SUMMARY

One of the recommendations in the report *A Nation at Risk* (National Commission on Excellence in Education 1983) was to increase student time for learning. The assumption that more efficient time use can increase students' achievement has been verified in a number of research studies. Furthermore, time use is one variable that employers, training sponsors, and cooperative education coordinators can control to increase the quality of the student's learning experience. Better use of time at the training station can be expected to lead to an increase in the vocational student's learning productivity. The cooperative education coordinator and training sponsor can "teach smarter" and the student can "work smarter" by changing the ways time is managed at the training station.

The procedures presented in this handbook are based primarily on a study of secondary cooperative education students at selected training stations (Franchak, Norton, and Desy 1985). Additional information was obtained from studies of time use in secondary and postsecondary vocational education classes (Halasz and Behm 1983; Halasz, Behm, and Fisch 1984).

This handbook is a companion volume to the publication *Managing Learning Time: A Vocational Educator's Handbook* (Halasz and Desy 1984). That handbook is a guide for teachers, administrators, supervisors, inservice coordinators, and teacher educators in conducting time-use analysis in the vocational education classroom. Time-use analysis at the training station is similar in a number of ways; however, the differences between the classroom setting and the work site dictate the use of alternative procedures. This handbook addresses time-use assessment at the training station. It provides the cooperative education coordinator with procedures designed specifically to be used in conducting time-use analyses of cooperative education students at the training station. The three stages of cooperative education time-use analysis are as follows:

1. Examining the benefits of time-use analysis

2. Conducting a time-use study

3. Working with the results

The handbook is divided into four chapters. Chapter 1 serves as an introduction to the handbook. Chapter 2 discusses the applications of time-use analysis. Chapter 3 comprises the steps required in designing, planning, and conducting time-use analyses at the training station. Chapter 4 presents specific strategies to increase time on task at the training station. Moreover, this chapter explains how to apply time-use assessment results to improve the learning experience of individual students and to effect overall program improvement. These chapters are arranged in the typical chronology of completing a time-use study. However, a number of steps are interrelated, and, in actual practice, concepts from several chapters may be used simultaneously.

Each chapter in the handbook is self-contained. The reader can expect to become familiar with major concepts, alternative approaches (where applicable), and specific techniques associated with the topic of each chapter. Within each chapter are references for further information. Examples are given throughout to illustrate the use of worksheets, observation forms, and checklists.

Overall, this handbook is designed to help cooperative education coordinators manage their programs more effectively. Time-use assessment is presented as a valuable means of obtaining information for the evaluation and improvement of cooperative education programs.

CHAPTER 1

INTRODUCTION

Evaluation in Cooperative Education

There are many purposes of educational program evaluation. Often, one central purpose is to determine how well program objectives are being met. This purpose is not always obvious in the informal evaluations of cooperative education programs that are shared when administrators gather at conferences and workshops. Programs are discussed in terms of how many students are placed at training stations, how satisfied employers are, how many students are hired permanently after graduation, and so on. Although there is sometimes pressure to meet these objectives, they are seldom the major objectives of the cooperative education program. Cooperative education is intended to be, as the term implies, educational. The training station is meant to help individuals prepare for employment by providing training. Therefore, the amount of learning relating to technical skills, basic skills, and employability skills at the training stations is the appropriate subject of evaluation.

Because other concerns intrude, the learning objective sometimes assumes a secondary role. Moreover, it is not easy to measure learning at a training station. The two obvious sources of information, the student and the employer, may be vague and general in their statements. They may overstate or understate the learning that is taking place. The employers may be very pleased with the students' proficiency and uniformly positive in their evaluations, but not have time to observe that the student's learning (relating to technical skills practice, basic skills, and employability skills) could be enhanced through more effective use of time or better supervision methods.

An evaluation is no better than the information upon which it is based. One effective way to gather information about a cooperative education program is through systematic observation of training stations. The information gathered should be as objective as possible, taking note of the specific tasks in which the student is engaged. Time-use analysis, coupled with other information gained through direct observation, is a procedure for gathering this kind of information for the evaluation of individual training stations and educational programs.

Time-Use Assessment

Fundamentally, time-use assessment involves recording what a student does and then calculating the percentage of time spent on task and off task. At this point, the time-use analysis has produced data that can assist in making informed decisions about the learning experience. This is the purpose of time-use assessment: to facilitate effective decision making. It can do so by providing a useful, objective base of information.

On-task activities are those related, directly or indirectly, to the learning activities (tasks) in which the student will engage, as defined by the training plan between the training sponsor and the cooperative education supervisor. *Time on task* is the amount of time spent on those learning activities.

Time-use assessment usually measures more than overall time spent on learning activities. This method also makes it possible to look carefully at the *kinds* of skills a student uses at the training station, including basic, technical, and human interaction skills. It can also be used to measure what is happening when the student is *off task*, either waiting for directions, socializing, or taking a scheduled break. Figure 1 presents a breakout of factors or how students may use time at the training station.

Time Use and Learning

The idea that time spent on learning tasks is directly related to achievement in the task area was proposed by John Carroll in 1963. Since then, the relationship of time on task to learning has been the subject of numerous studies. Bloom (1974), Fisher et al. (1978), and Wiley and Harnischfeger (1974) all found that students learned more when they spent more time on task.

Time-on-task research also indicates that learning time must be not only used, but used well (Halasz, Behm, and Fisch 1984; Siedentop 1983). Stallings (1980) found that merely increasing engaged time does not necessarily produce more learning; achievement depends on how time is used. Schneider (1980) pointed out that it is important to consider only the *actual* amount of time spent performing a task, since the total time taken can include nontask activities, such as waiting for materials or instructions. These relate directly to the cooperative education coordinator's findings about student time on task at the work site.

Ideally, students will be on task most of the time, performing tasks that increase their skills and knowledge. Hilgard and Bower (1975) state that "to learn means to gain knowledge through experience" (p. 2). Learning can be defined as the relatively permanent change in a student's knowledge or behavior due to experience (Mayer 1982, p. 1,052). Simply working, however, does not guarantee learning. Moreover, the optimum times needed for learning specific skills is not known, and how long a student needs to work at a skill in order to master it is still a matter for individual decision.

Time Use at the Training Station

The concept of measuring students' time use is familiar to most educators today—although the process itself is less well understood, and may seem ambiguous and complex. The method presented here is new to cooperative vocational education, having been developed through a recent National Center study on assessing cooperative education students' time use at the training station (Franchak, Norton, and Desy 1985). Cooperative education supervisors will find such assessment familiar, having made unstructured assessments while visiting training stations, watching students at work, and noting how much students seem to be working and learning. Such visits are commonly used to evaluate the quality of the cooperative education learning experience. Experienced supervisors can rightly claim that these assessments of the training station and the student are very useful.

Systematic observation of time use has the same purpose as informal observation but differs in several ways. The most important is that time-use observation results in *quantified* information. Time-use analysis is a procedure for observing students' activities at the training station as objectively as possible and recording these activities.

The results of the systematic method are sometimes very surprising. Retail students placed at a cash register in the hosiery department of a large department store may complain that they

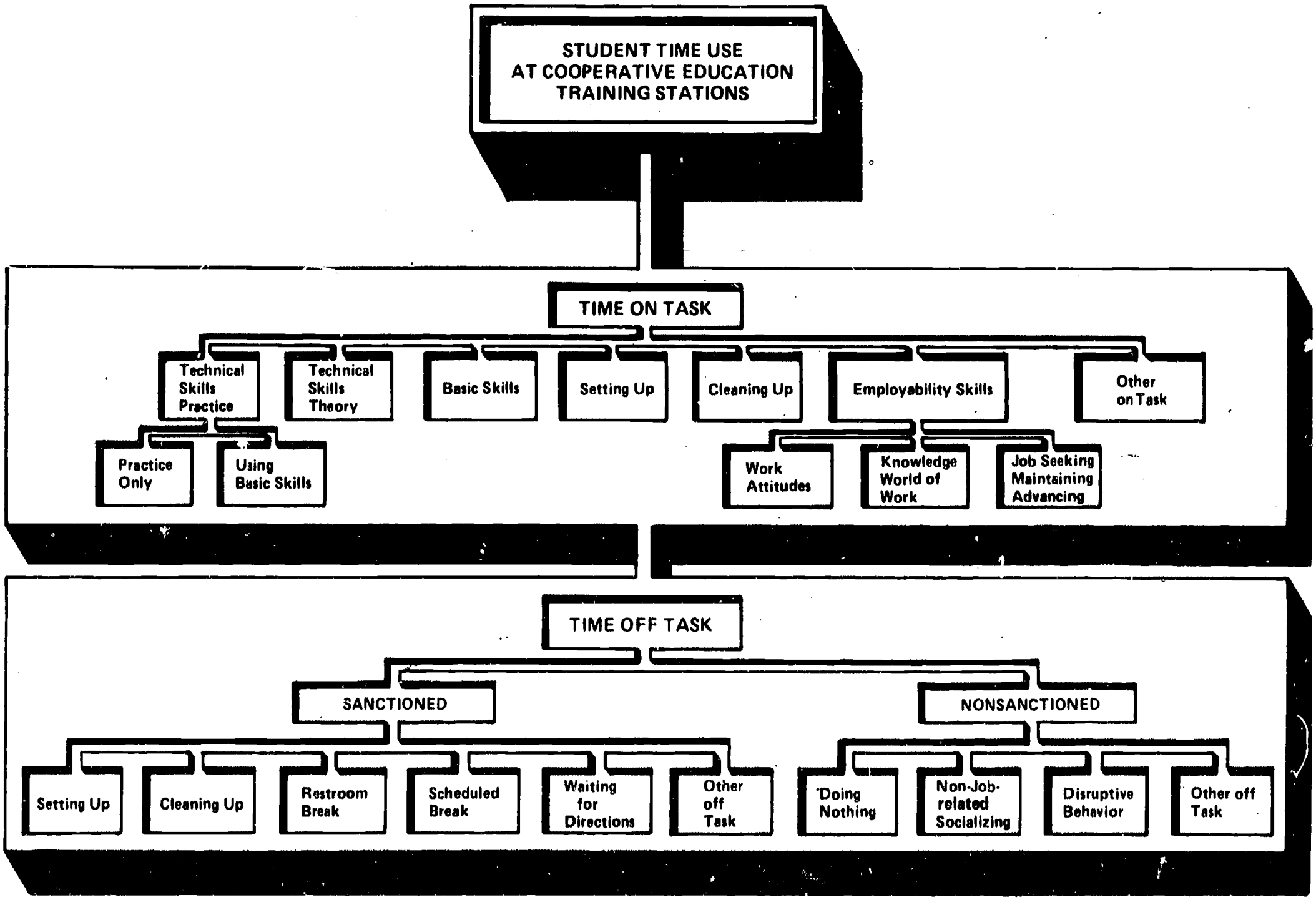


Figure 1. Factors of student time use at cooperative education training stations

spend a lot of time "doing nothing." But a time-use analysis may show that only 20 percent of the students' time is "down" time or, alternatively, that 80 percent of the time the students are idle, waiting for customers. The results will determine how the cooperative education supervisor and training sponsor approach the problem of the students' boredom. The precision of these data is the key difference between time-use evaluation and less formal evaluation.

Until recently, time-use assessment was focused on the classroom, where *on-task activities* were defined as those related, directly or indirectly, to the purpose of the class. Directly related tasks were defined as those in which the student was actually engaged in learning, such as working on a word processor or listening to a lecture on safety practices. Indirectly related tasks, such as sweeping the work area before leaving class, might not have added to learning, but were considered a necessary part of the learning task.

At the training station, time-use analysis may at first seem radically different from classroom time-use analysis, but it is not. The student is now being paid to do a job, but the cooperative education job is designed to be more than a job; it is a learning experience. Time-use analysis is designed to measure that learning experience.

Common Objections to Time-Use Assessment

Like all new ideas, the concept of measuring time use has met with some opposition. The method can seem formidably statistical, and the rewards may not be obvious at first glance. In the course of developing the procedures given here, the staff at the National Center for Research in Vocational Education met with many cooperative education coordinators. During these meetings, certain objections were brought up time and again. These objections are natural responses to this new method of gathering information. Our replies, in turn, are based on our experience with time-use analysis and reflect our belief in the usefulness of this method. Following are the concerns we heard expressed and our replies.

"I don't have time."

Very few cooperative education coordinators have time to spare. However, although time on task is primarily designed to lead to better informed, more consistent evaluations, it can save time as well. More information about training stations should lead to better decisions in placing students in cooperative education jobs. Knowledge about the student's interactions at the work site helps in finding solutions to any problems that may arise. In general, good information is necessary for good management, and good management saves time.

"My employers wouldn't like it."

That's always possible, but the key is to give the employer or training sponsor the chance to say "Yes" or "No." Setting up the observation in advance is helpful; chapter 2 talks about how to explain what you will be doing.

The employer stands to benefit from your increased knowledge. For example, you might see that employers in one program area are asking students to perform tasks for which they really are not prepared. If so, the necessary skills can be worked into the curriculum, so that future students—and job applicants from the vocational education program—are more productive.

In working with time-use analysis of cooperative education students, we have asked many employers for the right to observe on site. Few have refused.

"It's too complicated. I don't like working with numbers."

Probably because the observation form is detailed, many people do see this method as complex. Our observers have found, however, that once they completed their first observation the procedure was easy to follow. This handbook is devoted to making time-use analysis as simple and straightforward as possible.

"I can't spend that much time on one student."

Ideally, a time-use analysis involves more than one visit to a training station. Perhaps several observations at monthly intervals can be made. Most cooperative education coordinators do visit their training stations periodically, although they may not observe formally. It is worth noting that observation gives information on more than the student's learning experience. It provides data about the exact skills needed in this position and about the nature of this workplace, information that will be useful in program management long after the student has graduated.

"I really can't do this for all my students."

That may be true, but it is still worthwhile to do it for some. An alternative is to limit observation of each student; even 1 hour at a training station can yield useful information.

"You can't learn much in one visit."

It's true that information from one short session may not provide a complete database. It's better to return at different times of the workday and different days of the week. But the truth is that extended observation is impractical for many coordinators, even when the help of vocational teachers is enlisted. Nonetheless, some information is better than none. The important thing to remember when evaluating the results of a single visit is that your information is incomplete and should not be taken as the last word on that student's learning experience at that training station.

"People act differently when you're watching."

Observers should be unobtrusive and as far from the student as possible. Even so, the presence of an observer is naturally felt. More often than not, students and others at the work site are on their best behavior at first, like anyone who is conscious of being watched. Especially during the first observation of a site, results may err on the positive side, and evaluation should be tempered by that knowledge.

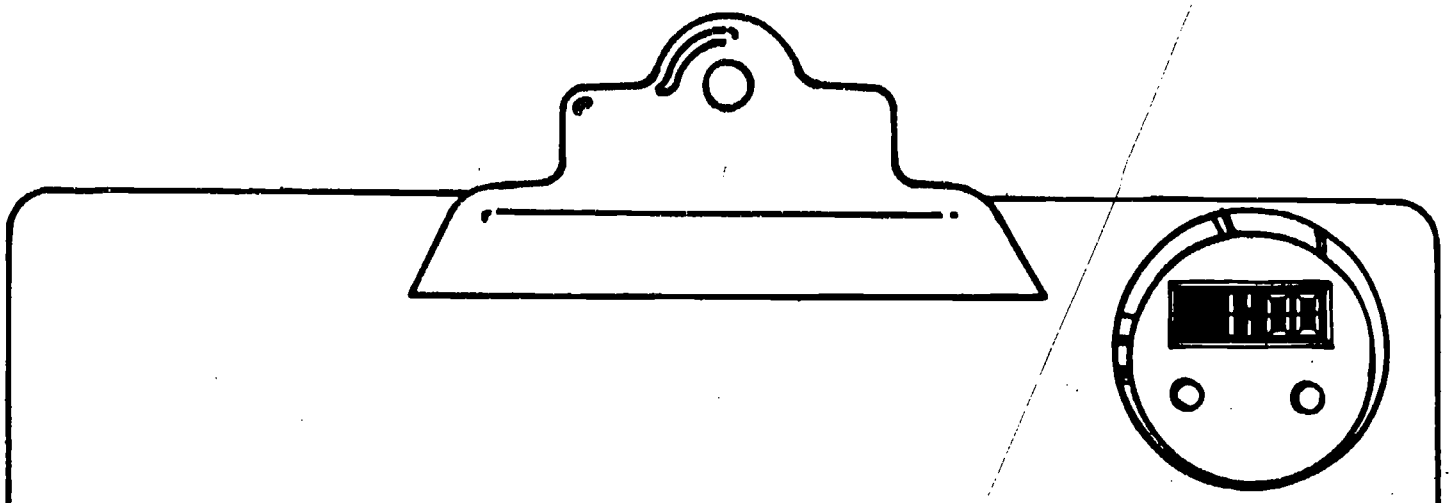
However, the processes at that training station should remain essentially the same, in terms of the tasks the student performs. The student can work more diligently or carefully than usual, but probably cannot do other than the usual work. As a result, evaluation of the learning experience, the purpose of the observation, is seldom significantly impeded by the fact that students know they are being observed.

"I don't need this—I have my own ways of evaluating."

Time-use analysis is not presented here as the one-and-only way of gathering information and evaluating the quality of a student's education at a training station. It does have a notable advantage over other methods, however: it is relatively objective. Time-use analysis can be used to enrich the information base for any method of evaluation.

Summary

Figure 2 on the following page gives some of the central statements from chapter 1. As these statements emphasize, time-use assessment can provide information for program evaluation and improvement. In addition, this method supplies information that can be used for more efficient and effective program management.



- The amount of learning at the training stations in the program is an appropriate subject of evaluation.
- Learning time must be not only used, but used well.
- Good information is necessary for good management, and good management saves time.
- The purpose of time-use assessment is to facilitate effective decision making.
- Time-use analysis can be used to enrich the information base for any method of evaluation.

Figure 2. Introduction—key concepts

CHAPTER 2

EXAMINING THE BENEFITS OF TIME-USE ANALYSIS

Since time-use analysis requires learning a new procedure clearly, the benefits must make the effort worthwhile. This chapter, therefore, presents beneficial uses for time-use assessment in a cooperative education program.

Developing and Modifying Training Plans

In formulating training plans, it is best to specify not only the tasks the student will perform but also the percentage of time the student will spend on various tasks. Observations of students' time use at training stations provide a standard that can be applied to other students in the same vocational service area.

As individual students are observed, the information from the observation can be used to modify their training plans. You may find, for example, that a student spent 70 percent of the observation time performing a routine task, such as taking phone messages. This information may lead you to discuss modifying the training plan with the employer, so that the student will spend 50 percent of the training station time learning new skills by working on a word processor.

Building Time Consciousness

When students' time is logged, they become more conscious of how they spend their time. Often, they begin to notice how much time they spend off task and how much of their on-task time represents learning. Your evaluation sessions with individual students will tend to reinforce the premise that the training station is to be a learning experience and that students should do what they can to maximize their own proficiency.

Employers can also learn from the observation. Beyond seeing how the student spends time at the training station, the employer can gain a better understanding of the relationship between the way the student's time is allocated and the quality of the student's experience.

Targeting Priorities

At a typical work site, hundreds of details vie for attention. It is impossible to note everything and all too easy to notice just one or two events of a certain kind. Designing or choosing an observation form forces you to decide what matters enough to be recorded. For instance, the forms used in the study conducted by Franchak and Norton (1985) includes employability skills. The student learning an appropriate attitude toward work; gaining knowledge of the world of work; or making efforts toward seeking, maintaining, or advancing in a job. These items were targeted on the form. because we believe learning employability skills is an important part of the cooperative education experience.

Fostering Detachment

One of the greatest challenges in evaluation is establishing the detachment necessary to fair judgment. Detachment is especially difficult when emotions are involved; educators who care deeply about their students must take pains to evaluate objectively. Systematic observation employing time-use assessment deals with facts, not feelings or impressions.

Increasing Efficiency of Placement at Training Stations

Although gathering information about the student's learning experience is the primary goal of observation, the observer also learns a great deal about the training station and the demands and opportunities of the job. This knowledge can be used in making decisions about placing students at sites for which they must have the necessary range of skills to work successfully and where they can learn from the experience. It can also forestall some problems of human interaction and personality conflicts. Additionally, observation data can suggest good placements; for instance, a hard-working student who demands step-by-step supervision might learn from working at a site where the supervisor is helpful but encourages the student to work independently. Knowledge about a situation confers the power to make more effective decisions.

Solving Problems

Some of the problems cooperative education coordinators encounter are unique and unforeseeable, although many problems can be prevented by better informed cooperative education placements. All problems are more easily dealt with when a good information base is available. The data gathered during observation can shed light on a student's complaint about obsolete or malfunctioning equipment. Observation of an inefficient work process at a training station may suggest that the employer is correct in saying the student spends too much time standing idle—but that this is not the student's fault. Even personality problems, among the most difficult problems to resolve, can be handled more easily when the interactions at the site have been observed.

Forming Useful Evaluations

The most productive evaluations are those that assess performance in realistic terms, offering positive reinforcement for work done well and specific suggestions for improvement. Time-use analysis makes possible the evaluation of specific aspects of the student's work and of the learning experience at the training station.

Substantiating Evaluations

Students and training sponsors see their own behavior subjectively. In communicating your evaluation to them, it is very helpful to have data on hand. For example, rather than telling an employer that the training station is generally good, you might point out that the student is getting the opportunity to learn entrepreneurial skills. The notes on your observation form should show what these skills are and how much time the student spent on tasks in this area. Observation data also help students see their behavior more objectively. Students may feel they are working well until the results of analysis are presented, showing that they are off task socializing over 40 percent of the time. The objective and definite nature of time-use data is perhaps most helpful in

cases where a student feels the evaluation is biased or the cooperative education coordinator's decision unfair. With this method of analysis, a coordinator can show the information used to make the decision. As a rule, evaluation is more meaningful and acceptable when it is given with reference to the actual behavior observed.

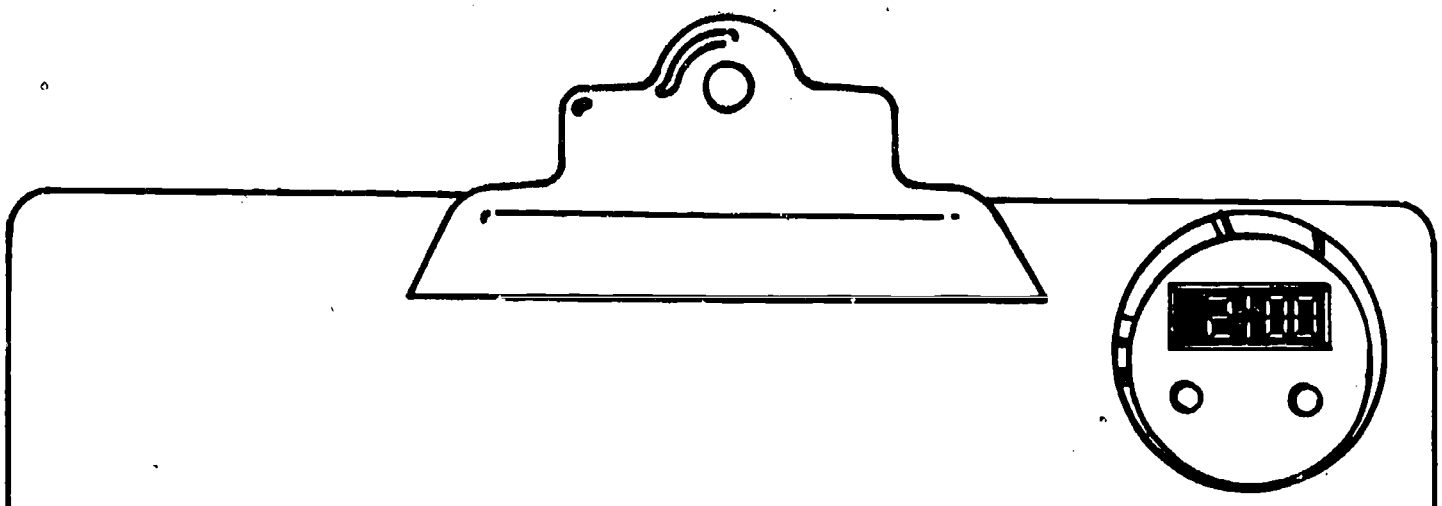
Freeing Up Time

Most cooperative education coordinators tell us there isn't enough time in the workday to do their jobs the way they should be done. When training stations are scattered all over a rural county, or an urban area, and the cooperative education coordinator handles a hundred students or more, time is always a problem.

Although time-use analysis takes time, it can ultimately save time by providing enough information to make better decisions than in the past. Matching a student to the best possible training station should mean fewer problems to investigate and resolve; evaluating students at the work site is an excellent way to catch problems before they become severe. Decision making, a large part of a coordinator's job, should flow more smoothly and quickly when a good information base has already been compiled.

Summary

Although this handbook stresses assessing time use for evaluation purposes, time-use information can also be used in other ways. Some of the uses presented in this chapter are highlighted in figure 3.



- Information from the observation can be used to modify students' training plans.

- Students become conscious of how they spend their time.

- The observer also learns a great deal about the training station and the demands and opportunities of the job.

- All problems are more easily dealt with when a good information base is available.

- Evaluation is more meaningful and acceptable when it is given with reference to the actual behavior observed.

Figure 3. Examining the benefits of time-use analysis—key concepts.

CHAPTER 3

CONDUCTING A TIME-USE STUDY

Preparing

Much of the effort in time-use observation takes place before the actual observation. This is especially true of the first observation, since preparing includes learning how to use the form, choosing and training any other observers, and developing your system for choosing training stations to observe. Once done, these preparations will take much less effort in the future. As this section emphasizes, all preparation should focus on your objectives—your purpose in assessing student time use at the training station. Essential steps in conducting a time-use study are presented in figure 4.

Studying The Training Plan

The training plan defines the experience the cooperative vocational education student is supposed to obtain at the training station. It should list both the types of work to which the student will be exposed and the tasks the student will perform and be given the opportunity to master during the training experience. The training plan is, therefore, an important document in your study of the time use of cooperative education students. In conducting a time-use study, the observer must know what constitutes on-task behavior. The list of tasks in the training plan defines the student's on-task activities.

Choosing Training Stations to Observe

There are many possible reasons for analyzing cooperative education student time use; your objective will indicate which training stations should be observed. For example, one reason for analyzing student time use is to develop standards for a good cooperative education experience. If this is your objective, you will want to observe training stations that you believe offer students a high-quality training experience. These would almost certainly be training stations at which you have placed many students in the past with positive results.

A second reason for analyzing student time use is to obtain information that will help you manage your cooperative education program. If this is your objective, you might choose those training stations about which you have the least information. These would probably be training stations that are relatively new to your program.

It may be that your objective is to evaluate the learning experiences of individual students at their training stations, as part of an effort to maintain or improve the quality of your program. This objective is probably best met by observing all students in the program. However, that may not be feasible or realistic, given constraints on your time and resources that are available for conducting

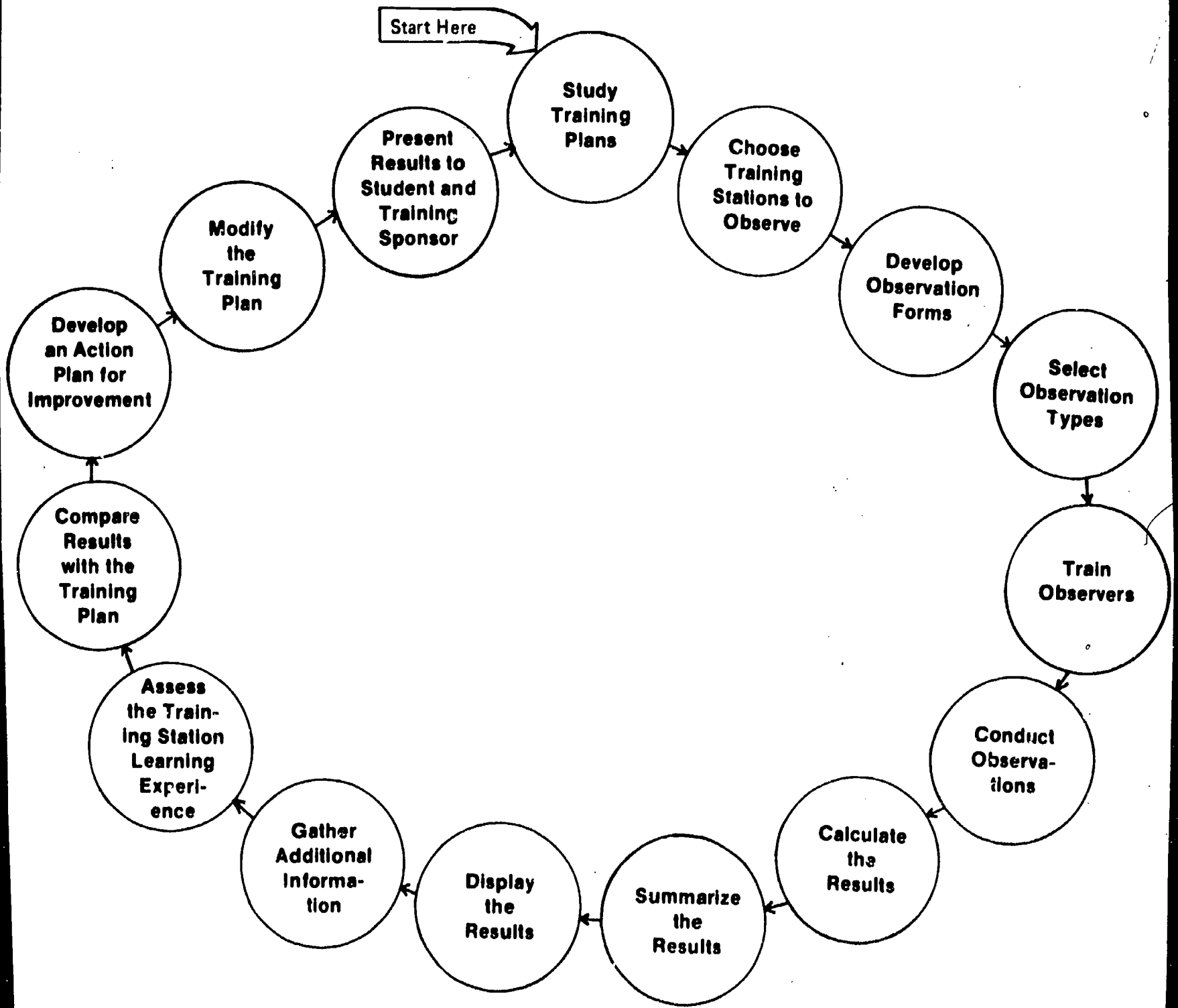


Figure 4. Steps in conducting a time-use study

the study. In that case, you may develop a sampling plan to gather training station time-use data, and then use these results to make inferences about all the training stations.

According to Backstrom and Hursh (1963, p. 42), a good sample—

- Provides ways to determine the number of training stations that should be sampled;
- Specifies the chance (probability) that any training station will be included in the sample;
- Enables us to estimate how much error results from observing a sample of training stations instead of observing all of them; and
- Allows us to determine the degree of confidence that can be placed in total population estimates from the sample.

In general, Backstrom and Hursh (1963) indicate two minimum requirements in sampling: (1) the sample must be large enough so that estimates about the characteristics of the population can be made with relative precision, and (2) the sample must include people who together are representative of the population (p. 25).

Sampling procedures have been classified under various categories. The two categories that are most commonly referred to are probability and nonprobability sampling. Probability sampling involves the selection of elements for the sample by chance procedures and with known probabilities of selection. In nonprobability sampling, elements are not selected by chance procedures, and probabilities of selection are not known.

Sample size is a major concern in designing a sampling plan. No absolute standards exist regarding the "best" size of a sample, although tables appear in the literature that can provide "guestimates" of the appropriate sample size. However, there are some helpful hints to bear in mind when determining your sample size. Chatobar and Lad (1974) suggest the following:

- The more similar the population, the smaller the sample can be, since everyone is theoretically alike.
- The more time, personnel, and money available, the larger the sample can be.
- The more categories by which the sample data are to be generalized (e.g., age, gender, type of cooperative vocational education program), the larger the sample must be in order to ensure that there are enough observations in each group so that valid inferences may be made.
- The more you want to be sure of the sample information, the larger the sample you will need. In other words, the less error you can permit in the result, the larger the sample you will need.

The reader is referred to a publication prepared by Gold and Morris (1977) for a clearly defined procedure for selecting a sample size.

As this overview suggests, sampling is a complex field, and a casually chosen sample is likely to have little value. A small sample might, for instance, suggest that students at the training stations in your programs are getting no opportunity to use basic skills. This might drastically misstate the truth; perhaps the sample does not include certain types of businesses in which some

students would use basic skills often. It is important then, to recognize the limitations of your sample procedure.

For an overview of student time use at your program's training stations, be certain the most important factors are fairly represented. Such a sample might include both established and new training stations, cooperative education students who are new to cooperative education and those who are experienced, male and female students, and other elements you believe to be important. Again, be cautious in your interpretation of the results.

Our warnings about sampling are not meant to be discouraging, but only to point out the hazards involved. Time-use information is a valuable addition to any program evaluation, and a valid sampling plan can aid in obtaining useful information when it is not possible to observe all training stations.

Many textbooks and journal articles are available on sampling, as is research you may consult for more procedural details on designing an appropriate sampling plan and selecting a sample. The following texts are suggested:

Fritz-Gibbon, C. T., and Morris, L. L. *How to Design a Program Evaluation*. Beverly Hills: Sage, 1978.

Gold, B., and Morris, W. *Student Accountability Model (SAM), Operations Manual*. Sacramento, CA: Chancellor's Office, California Community College, 1977.

Scheaffer, R. L.; Mendenhall, W.; and Ott, L. *Elementary Survey Sampling*. Belmont, CA: Wadsworth Publishing Company, 1979.

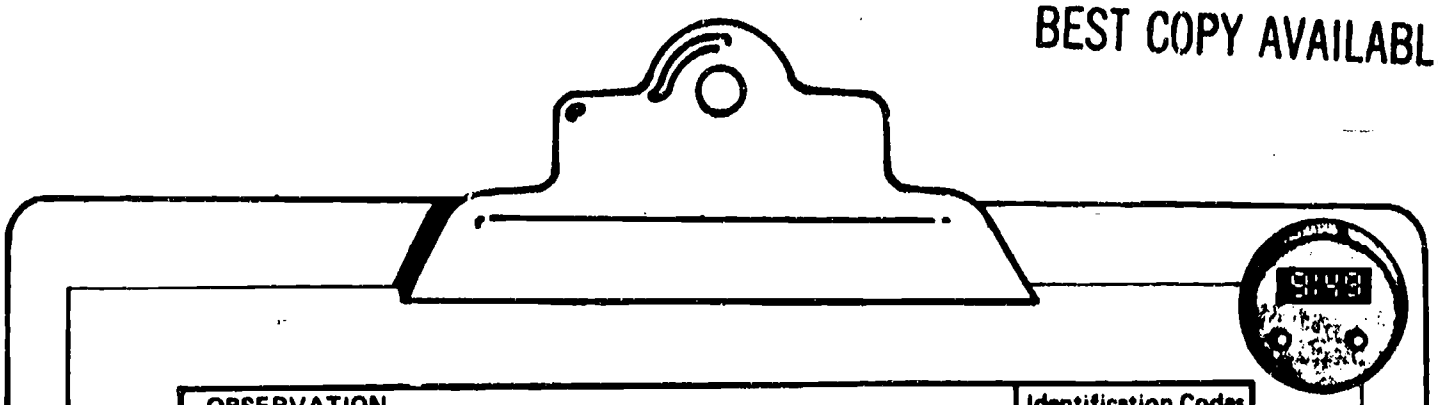
Sudman, S. *Applied Sampling*. New York: Academic Press, 1976.

The Observation Form

Observation form 1 shown in figure 5 is arranged for manual calculation of results. Observation form 1-A in the Appendix is very similar to observation form 1 but is arranged for keypunching for computer analysis of the data collected. The difference in the two forms is that the keypunch-ready form (1-A) includes variable numbers (1-8 under the identification codes, 10-13 under the time, 14-21 under time-on-task activities, and 22-29 under time-off-task activities) that would be the column numbers on a data card or tape in which the data would be punched. In duplicating forms for observation, be sure to choose one form or the other, depending on whether you want to calculate the results manually or through the use of a computer.

The observation form contains two categories: (1) on-task behavior and (2) off-task behavior. On-task behavior, as previously discussed, includes all activities performed by the student that are related to the proposed training experience outlined in the student's training plan. Off-task activities may be either sanctioned or nonsanctioned. An example of a sanctioned, off-task activity is the scheduled break, during which the student is off task but is sanctioned to do so by the training sponsor. Nonsanctioned, off-task behavior includes such activities as socializing that is not job related and is not sanctioned by the training sponsor.

The observation form can be designed to gather information on behaviors of special interest to you, or you can reproduce a version of the form given here. Following are definitions of each on-task and off-task category included in the form.



OBSERVATION FORM I

TIME-USE STUDY FOR CO-OP STUDENTS AT THEIR TRAINING STATION

Identification Codes				
Date Mo	Date Day	Observer	Student Number	Site
12	15	1	1	1

	Time	Time on Task: Technical Skills Practice: Practice Only	Time on Task: Technical Skills Practice: Using Basic Skills	Time on Task: Technical Skills/ Theory	Time on Task: Basic Skills	Time on Task: Employability Skills	Time on Task: Entrepreneurship Skills	Time on Task: Setting Up	Time on Task: Cleaning Up	Time off Task: Sanctioned: Setting Up	Time off Task: Sanctioned: Cleaning Up	Time off Task: Sanctioned: Restroom Break	Time off Task: Sanctioned: Scheduled Breaks	Time off Task: Sanctioned: Waiting for Directions, etc.	Time off Task: Nonsanctioned: Doing Nothing	Time off Task: Nonsanctioned: Non-Job-related Socializing	Time off Task: Nonsanctioned: Disruptive Behavior
1	09:35							1									
2	:36							1									
3	:37							1									
4	:38							1									
5	:39							1									
6	:40		1														
7	:41		1														
8	:42	1															
9	:43	1															
10	:44	1															
11	:45	1															
12	:46													1			
13	:47													1			
14	:48	1															
15	:49	1															
	TOTALS	6	2					5						2			

Notes: Student is fabricating an oil recovery tank-- uses electric arc welding machine and cleans welds with slag hammer and electric grinder. Training sponsor reminds student of safety hazard from flying sparks. Training supervisor gives instructions on welding part on oil recovery tank. Student uses slide tap to make measurement.

*Describe students' ongoing activities at the training site. Be sure to note the following:
- Specific on-task activities
- Critical incidents
- Critical comments
- Critical work site characteristics

Page 1

Figure 5. Time use assessment observation form for manual calculation

- **Time on task.**
  - **Technical Skills—Practice Only** refers to tasks related to the technical requirements of the student's position, as defined in the training plan, that do not require use of a basic skill (reading, computing, writing, or communicating).
  - **Technical Skills—Practice Using Basic Skills** are tasks related to the technical requirements of the student's position, as defined in the training plan, that do require use of a basic skill.
  - **Technical Skills/Theory**—is the category of activities including receipt of instruction from or discussion with any employee at the training station regarding theory involved in performing a task. The task is related to the technical requirements of the student's position as defined in the training plan.
  - **Basic Skills—Separate** refers to instruction in basic skills as required by the training sponsor during the student's work site hours. The student is not performing any tasks related to technical skills practice.
  - **Employability Skills** may fall into three categories:
    - —**Work attitudes** are taught when the training sponsor is communicating to the student regarding those qualities deemed worthy by employers and fellow workers in performance of a job. Examples are getting to work on time, doing one's work well, and relating to co-workers and management in a cordial, respectful manner.
    - —**Knowledge of the world of work** is addressed when communication from the training sponsor to the student contributes to understanding of how jobs are structured and how people prepare to engage in work. Examples include discussion of current and future job opportunities and of the social and personal implications and requirements of specific jobs.
    - —**Job-seeking, maintaining, and advancing skills** are taught through communication from the training sponsor to the student regarding job placement, both on an initial and an advanced basis. Examples include learning new job skills to get a different job or position and learning how to develop a resume.
  - **Entrepreneurship Skills** encompass communication from the training sponsor to the student regarding the organizing and operating of a business venture.
  - **Setting Up** involves activities performed by students to prepare for performing a task related to the defined technical requirements of the position.
  - **Cleaning Up** includes cleaning the work station and putting tools and materials back in their proper place after the performance of a task defined in the training plan.

- **Time off task—sanctioned.**
  - **Setting Up** encompasses activities the student performs in preparation for an assigned task *not* related to the tasks defined in the student's training plan.

- **Cleaning Up** involves assigned tasks *not* defined in the training plan, that are performed by the student and involve cleaning the work station or another work site area. For example, the machine shop student is asked to sweep out the boss's office or wash windows.

- **Restroom Break** is a scheduled or unscheduled absence from the training station to visit the restroom.

- **Scheduled Breaks** are lunch or coffee breaks that are part of the regular work day schedule at the work site.

- **Waiting for Directions** is time spent waiting for the training sponsor to provide information or answer questions relating to a specific work task.

- **Time off task—nonsanctioned.**

  - **Doing Nothing** is inactivity on the part of the student that is not sanctioned by the employer; there are on-task activities the student could be performing at this time.

  - **Non-Job-related Socializing** includes socializing with other employees or non-employees (not including customers) when such behavior is prohibited by the employer. Requirements of the employer and often the training plan indicate that there are on-task activities the student could be performing at this time.

  - **Disruptive Behavior** is behavior that is clearly disrupting the work being conducted at the work site and would obviously not be sanctioned by the employer. Examples are fighting and horseplay.

Note also that the form includes space at the bottom for writing notes or comments describing in more detail the specific activities the student is performing, the work environment, and the apparent quality of the student's experience. These notes are discussed more fully in "Adding Comments" later in this chapter.

Adapting the Form

The observation form need not be used exactly as it is presented in this handbook. It can be adapted in many ways, depending upon your needs. For instance, an observation form can have only three columns: one each for on-task activity; sanctioned, off-task activity; and nonsanctioned, off-task activity. Such a form would not specify student activities but would provide more space for making notes.

The form can also be adapted to be more specific. It can be tailored to the student's service area or to the student's occupational role. It can reflect the individual student's training plan, including each of the tasks outlined in the plan. Experience in observing may suggest other adaptations that would be helpful in gathering information to meet your objectives.

Who Should Observe?

Information on a cooperative vocational education student's time use at the training station can be gathered by any of several people. One possibility is to observe the student yourself. Since, as coordinator, you are not a direct participant in the training process at the work site, you are less likely than the student or training sponsor to be biased in recording information. Firsthand observation also allows you to see the student's performance, instead of relying on information provided by someone else. The main disadvantage of collecting time-use data personally is the demand this places on your time. It is also possible that your positive or negative feelings about a student or training station might color your perception; if you think this might happen in a particular instance, it is best to get someone else to conduct that observation.

The student's cooperative vocational education teacher is also a good candidate to conduct the observation, since these staff members have the background necessary to understand the training station tasks. Like the cooperative education coordinator, the teacher should be alert for any personal feelings about a student that might bias the observation. In some instances, another vocational education teacher may be the most unbiased person available to conduct the observation.

Students can collect time-use information, themselves by keeping a record of their own activities. This may be the least obtrusive way to obtain time-use information and offers the additional advantage of helping students understand how they spend their time on the job. The obvious disadvantage of using students as self-observers is that they are not unbiased but are direct participants in the process they are recording.

Finally, information on students' time use can be collected by their training sponsors, although some training sponsors feel they are too busy to act as observers. Because they are direct participants in the training process, training sponsors may be biased. Balancing this possibility, however, is the fact that the training sponsors thoroughly understand the tasks and processes at their work site, and can therefore record them accurately. Volunteer retirees are another possibility. There are many qualified individuals who seek active roles in society after retirement. They can serve most effectively as time-use observers. An excellent resource describing procedures for recruiting volunteer retirees is the following:

Warmbrod, C. P., and Eisner H. R. *Operating a Retirees' Volunteer Program in Postsecondary Institutions: A Resource Handbook*. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1979.

Setting Up the Observation

When an outside observer plans to collect time-use data, it is important to set up the observation with the training sponsor in advance. Because you may otherwise encounter resistance from the training sponsor, it is necessary to explain why you want to collect time-use information on the student and to discuss with the training sponsor any means by which the observer can remain unobtrusive.

In terms of collecting accurate, unbiased data, it is usually helpful to gain permission to observe at an unspecified time. However, the training sponsor may dislike this idea. In that case, set a specified time for the observation to take place.

Observer Training

It is important that you and any other observers you enlist be consistent in recording the activities observed. This requires that observers have the same understanding of how each activity is to be recorded on the observation form and that they record similar activities consistently over time. It is extremely important in assessing the reliability of observers in the coding of the specific behavior.

There are a number of ways to calculate observer agreement. Johnson and Bolstad (1973) state that an overall agreement of 80-85 percent is a realistic upper limit. For a detailed discussion on the assessment of reliability, the reader is referred to the following resources:

Hawkins, R., and Dotson, V. "Reliability Scores that Delude: An Alice in Wonderland Trip through the Misleading Characteristics of Interobserver Agreement Scores in Interval Recording." In *Behavior Analysis: Areas of Research and Application*, edited by U. Ramp and G. Semb. New York: Prentice-Hall, 1975.

Medley, D. M. "Systematic Observation." In *Encyclopedia of Educational Research*. 5th ed., vol. 4, edited by H. E. Mitzel. New York: The Free Press, 1982.

Siedentop, D.; Tousignart, M.; and Parker, M. *Academic Learning Time—Physical Education: Coding Manual*. rev. ed. Columbus: School of Health, Physical Education and Recreation, The Ohio State University, 1982.

We recommend that observers be trained through both discussion and practice observations.

The National Center has issued a workshop guide for training observers to assess time use. Because observer training does involve understanding the concepts and method of time use analysis, we recommend this workshop guide, *Managing Learning Time: A Professional Development Guide* (Halasz and Raftery 1985), which includes overhead transparencies and handouts, and which was designed as a companion to this handbook.

Observers need to understand the purposes for collecting time-use data and how the data will be used. They also need to understand the specific definition of each on- and off-task activity on the observation form. The best way to meet these needs is through discussions and practice observations, which help develop skill and consistency in observation. Practice observations can be conducted at training stations or in a classroom in your school with the observers recording the activities of one student. The observers should all record at the same time, but each should record the time-use information independently. After the observation, they should meet to discuss their data and calculate results.

Observing

Unobtrusiveness in Observing

In conducting an observation of a student at the training station, it is important to be as unobtrusive as possible; the more noticeable the observer, the more likely it is that the student and the training station in general will not function normally. Observers should dress in a way that will blend in at the workplace and should sit or stand out of the way. They should not interact with the

student being observed, unless the student is on a scheduled break, and they should not talk with other workers at the training station. If spoken to, they should reply briefly, keeping interaction to a minimum so as not to keep the workers from doing their jobs. In general, observers should be careful not to get in the way of any work being conducted at the training station and should not to call attention to themselves. Webb et al. (1966) provide an excellent source of detailed information on unobtrusive measures.

Materials Necessary for Observing

The observation form shown in figure 5 will hold 15 minutes of minute-by-minute time-use observation. An observer recording every minute will need four forms for every hour of observation. A clipboard should be used to hold the observation forms. Since it is awkward to look at your watch and often inconvenient to look at a wall clock, an inexpensive stick-on or clip-on quartz clock should be used to keep track of the minutes. Finally, the observer should have several sharpened pencils with erasers for any necessary changes.

Time Intervals

Time-use data can be recorded every minute, every third minute, or every fifth minute. Studies conducted by the National Center have found no difference in the accuracy of time use data recorded at those three intervals. Recording time use information at 5-minute intervals allows more time for making notes than does recording information every minute.

Another option is to record time-use data every minute for 15 minutes and then to make notes for 15 minutes. This procedure can be repeated for the course of the observation. Regardless of the time interval used in recording the information, it is important to remember that only one on- or off-task category should be checked per interval. Also, whichever option is chosen should be used for all observations.

Adding Comments

The suggested observation form provides room for notes. In general, these notes or comments should deal with anything significant that cannot be shown in the designated time-on-task categories. Comments can be used to identify both positive and negative attributes of the work environment that seem to influence the time use of the cooperative education student. They might deal with safety factors, placement of equipment, difficult personalities at the training station, apparent racial or sexual discrimination, work overload, and so on. They can also be used to explain unusual interruptions or events that cut down the students' time on task, such as equipment breakdown or problems with materials.

Remember that positive factors are also important. Comments should particularly include anything that contributes to a good learning experience: advanced, well-designed equipment; a variety of tasks; friendly, helpful co-workers; the opportunity to solve problems, and so on. Of course, interactions between the student and the training supervisor are important. Note the facts, not your interpretation of them. Rather than "Supervisor dislikes student," note "Student requests help—supervisor yells at that person for stupidity."

The sample form suggests that observers note critical incidents, critical comments, and critical work site characteristics. In this context, the word "critical" does not mean "negative." Rather, it

refers to those events that may be *significant* in shaping the student's learning experience. The following definitions are presented to provide further definition and guidance in preparing comments on the observation form:

- **Critical incidents** are those that affect the student's work or demonstrate something especially positive or negative about the training situation. If, for example, a supervisor takes a good deal of time to explain how to do something or, on the other hand, does not respond to the student's request for help, this information will be valuable in making decisions about the training station in the future.

- **Critical comments** are appropriate when observers have perceptions that seem important, even though they are not strictly objective. You may draw a conclusion about the overall tone of a workplace—it seems friendly or hectic—or you may note that the student seems to be excluded by co-workers. Be careful in making these remarks since they are judgments. Whenever possible, try to validate them with data. For example, the comment "Training Sponsor encourages independence" can be accompanied by a note on a significant incident: "Sponsor asks student to draft a letter to patients on billing procedures."

  If interactions, events, or expectations at the work site are unusual, note them. A health intern may be expected to assume unusual responsibility in responding very quickly and competently to an emergency code. A student working in small business may be expected to participate in decision making. These demands and opportunities significantly affect the learning experience and should be noted.

- **Critical work site characteristics** are aspects of the physical work site that interfere with or enhance the learning experience and should be noted. Problems might include extremes of temperature, faulty equipment, or unsafe practices. Poor ventilation and excessive smoking or dust may be annoying; if so, a note should be made. By the same token, an unusually well-furnished office may provide an ideal environment for working and learning. These significant characteristics of the work site should be noted.

Comments are a valuable part of the observation and can almost always provide a richer description of the demands of a cooperative education training station than you had before analysis. Some observers take copious notes; others take few. Some make only objective comments. Others respond to human interactions or the physical environment with unusual sensitivity; still others are highly aware of the work processes at a training station. Remember that the notes you take will be filtered through your own perceptions and your beliefs as to what is most important. Keep in mind however, that *the focus of all notes should be the kind and quality of training the student is receiving.*

It is most important in making comments about training to be objective. *Tie the note in with something actually seen in the workplace—the event that caused you to make a note. Facts about the training situation are more useful than inferences and judgments.* These will follow later, when you deal with the results.

We have found it useful to type the handwritten notes from an observation session; you might want to keep a copy in the student's file and a copy to be kept with the file on the training station. Following are examples of notes taken at two observations by different researchers. They show different emphases, but both sets of notes deal with tangible aspects of the training station. As is evident in reading them, they contain information that will be very useful in dealing with problems, in placing students at those training stations in the future, and in evaluating the quality of the student's learning experience.

Site 1: Welding Shop—Observer's Comments

Site 1 is a welding shop that offers supervised training to a trade and industry student. The shop is located in a large, unheated garage. This observation took place on a very cold March day.

The notes show high consciousness of safety, the work environment, the specific tasks the student gets to do, and the specific tools the student uses. The latter two categories of information are very useful in placing trade and industry students in relevant training stations.

The notes represent 1 hour of observation. They are given as they appeared on the observation form, with *S* standing for the student and *TS* for the training supervisor. (When more than one student works at a site, numbers can be used—S1, S2, and so on.) Each block of notes was taken from one observation form.

8:15-8:29 S fabricating an oil recovery tank—grinding welds; operates electric arc welding machine.

Wears safety glasses and gloves.
Lighting dim but okay for welding.
Air exhaust system running—noisy.
TS gives instructions on welding the reservoir section.
S finishes welds, grinds slag.

8:30-8:59 S grinding slag. Sparks from grinding fly into welding equipment and paper boxes.
Sparks fly onto TS. S moves so sparks are shielded.
S moves "job" into position to do heavy grinding. Has to strain—job looks quite heavy. Scrapes welds with hand scraper. No safety glasses.
S grinding slag.
TS tells S to be careful of grinding sparks. S puts on glasses.

9:00-9:14 Customer comes in, exchanges greetings with S. S opens garage door. Customer backs truck in. S helps load a coal stoker made in the shop into truck.
S does layout work—measures for parts, using slide tape and scriber.
Asks TS a question. TS stops work to explain.
Door still open. Thirty-two degrees out—I can see my breath in here.

These notes give a good deal of useful information about this training station. The training sponsor is available and on-site. He reminds the student of safety practices. He also permits the student to work alone until help is needed. The student at this training station gets practice in standard welding skills and must do layout work. He must also be able to do heavy lifting when necessary, as is often the case in welding shops. On the less positive side, this cooperative education student has minimal opportunity for interaction with customers or co-workers. The environment is very cold and unduly noisy, conditions that any student placed here should know about in advance.

Site 2: Warehouse—Observers Comments

The following notes were taken by another observer at a training station located in the warehouse of a truck parts store. The marketing and distributive education student working here is

classified as a stock person, responsible for receiving and storing goods and finding them quickly when they are needed. The observer's notes show, however, that several "hidden skills" and personal characteristics are also demanded, including accuracy, physical strength, and the ability to work without supervision.

This observer was especially conscious of specific tasks and of the human interactions of the workplace. These detailed notes add to the co-op coordinator's understanding of this workstation and are balanced by the objectivity of the observation form. In turn, the notes supply information that cannot be given in the precise categories of the form. Although both observers' notes are factual, the difference in emphasis is apparent.

1:00-1:14
S checking parts on microfiche reader. Works without supervision.
TS is always in sales room, working with customers.
S busy and involved. Seems to know exactly what to do and how to do it.
Warehouse large, drafty, everything dusty or oily. No place to sit at all.
Completely male work site.
S finishes inventory, moves boxes, begins to unload. Some parts are very heavy.

1:15-1.29
S helps another employee nail together a large frame. They chat as they work.
S seems to have excellent relationship with other employees, who say hello or stop to chat.
S appears to have as much responsibility as other employees—does the same work.
Continues unpacking, marking items on packing slip.
NOTE: Owner stops to chat with me. Says S is "great" but not all co-op students work out as well. Says co-op supervisor is good—calls weekly, handles problems immediately. Owner plans to hire S full-time when S graduates.

1:30-1:44
S says he doesn't help customers at the front counter because he doesn't know how to work computer yet.
Men here do a lot of recognizing each other in passing—"Hey, Rudi" and "What's new, Jim?" Friendly but very work-oriented atmosphere.
S checking in stock.
NOTE: Much of S's responsibility is keeping track of things. Also has to read and interpret a great variety of packing slips, shipping labels, order forms, etc.
Stops to help another employee load an order onto a truck. Much heavy lifting.

1:45-1:59
This is pretty boring work, as far as I can see, but S doesn't seem to mind. He's very energetic and works hard.
S helps another employee nail up boards on a shelf unit. They talk while working.
S asks TS how to do something.
TS traps S in a box, teasing.
Then back to work, rolling rubber tubing onto cylinders. (They tease and have fun as they work.)
NOTE: Most of S's time is spent logging parts in or out. These records are used to reorder when something runs low, so accuracy is very important.
Co-op supervisor drops by to say "hi" to S and his boss.

These notes demonstrate the "feel" for a training station that can only be gained through an observation. They also show the wealth of information that can be gathered in a relatively short time. The focus of a time-use analysis of a training station is usually the recording of the student's activities on the observation form. Most people find, however, that collecting specific time-use data rapidly becomes easy and that they are able to add significant comments that broaden their understanding of the student's learning experience.

Calculating the Results

Once the time-use information has been collected, you will want to calculate the results for the purpose of interpretation. Calculating the results is a two-stage process that consists of first computing the information and then displaying the results.

Computing Time Use Information

The process is essentially simple. An analysis of the student's time use at the training station can be calculated using figure 6. If, for example, you observed a student every minute for a 1-week period, the total number of minutes of observation would be 1,005 minutes. If the student spent 391 minutes on technical skills practice, then the percentage of observed time that the student spent in technical skills practice would be 391 ÷ 1,005 = 38.9 percent. A percentage should be calculated using this method for each time-on task and off-task category. Worksheet 1 found in the Appendix can be duplicated and used as a guide to compute time use.

Summarizing the Results

Once time-use findings are calculated, they can be examined through use of figure 7. This worksheet directs attention to important evaluation questions, including questions that may be dealt with in observer's notes. Worksheets found in the appendix can be duplicated and used as a part of your summarizing the results.

This worksheet is useful in talking over results with those affected by a specific time-use assessment and can be used in conjunction with a graphic presentation, such as the bar chart described in the next section.

Displaying the Time-Use Results

The primary purpose for displaying time-use results is to present information in a concise, comprehensible manner. Graphic presentation is an extremely useful and efficient medium for the presentation of time-use data, and is often more appropriate than narrative presentation.

- It is more effective for creating interest and catching the attention of the reader.
- It illustrates visual relationships, which are more clearly grasped and more easily remembered.
- It is more efficient, since the essential meaning of masses of statistical data can be assimilated at a glance.

Total minutes observed: 1005

Identification Codes

Student: John Smith
Training Sponsor: Tele CommuniKations
Observer: Carlos Selgas
Observation Date: 12/15/84

Task Category	Total Minutes Observed				Percentage Of Observed Time*
1. Technical skills practice	391	÷	1005	=	38.9%
2. Technical skills w/basic skills	238	÷	1005	=	23.7%
3. Technical skills/theory	53	÷	1005	=	5.3%
4. Basic skills	0	÷	1005	=	0.0%
5. Employability skills	1	÷	1005	=	0.1%
6. Entrepreneurship skills	10	÷	1005	=	1.0%
7. Setting up (on task)	4	÷	1005	=	0.4%
8. Cleaning up (on task)	10	÷	1005	=	1.0%
TOTAL TIME ON TASK (add percents 1 through 8)	707	÷	1005	=	70.4%
9. Setting up (off task)	30	÷	1005	=	3.0%
10. Cleaning up (off task)	30	÷	1005	=	3.0%
11. Restroom break	17	÷	1005	=	1.5%
12. Scheduled breaks	201	÷	1005	=	20.0%
13. Waiting for directions, etc.	6	÷	1005	=	0.7%
TOTAL SANCTIONED TIME OFF TASK (add percents 9 through 13)	284	÷	1005	=	28.2%
14. Doing nothing	6	÷	1005	=	0.6%
15. Non-job-related socializing	4	÷	1005	=	0.4%
16. Disruptive behavior	4	÷	1005	=	0.4%
TOTAL NONSANCTIONED TIME OFF TASK (add percents 14 through 16)	14	÷	1005	=	1.4%

Figure 6. Sample form for computing time use

Student: John Smith
Training Station: TeleCommuniKations

Observation Date: 12/15/84
Observation Time: 1:00p.m. – 4:00p.m.

DIRECTIONS: Duplicate this worksheet, giving copies to the cooperative education coordinator, teacher, observer and others involved in interpreting the results. Refer to the completed observation forms and worksheet 1 to answer the following questions.

1. What percentage of time did the cooperative education student spend on task? 70.4 percent

2. What percentage of the observation time did the student spend on specific on-task activities?

   38.9% Technical skills practice only

   23.7% Technical skills practice using basic skills

   5.3% Technical skills/theory

   0.0% Basic skills

   0.1% Employability skills

   1.0% Entrepreneurship skills

   0.4% Setting up

   1.0% Cleaning up

3. What percentage of the time did the student spend on specific sanctioned, off-task activities?

   3.0% Setting up

   3.0% Cleaning Up

   1.5% Restroom break

   20.0% Scheduled breaks

   0.7% Waiting for directions

Figure 7. Sample form for summarizing time-use findings

4. What percentage of the time did the student spend on nonsanctioned, off-task activities?

0.6% Doing nothing

0.4% Non-job-related socializing

0.4% Disruptive behavior

5. Did the student's training station activities reflect the learning activities designated in the training plan?
   ✓ Yes ___ No

6. How much responsibility did the training sponsor have in the cooperative education student's training station activities?
   ✓ Very much ___ Some ___ Little

7. Did the student display safe work practices?
   ___ Yes ✓ No

8. Did the cooperative education student work independently while at the training station?
   ✓ Yes ___ No

9. What type of working relationship existed between the cooperative education student and the regular employees?

   ✓ Independent ___ Supportive

10. Did the training station activities provide the student with the opportunity to enhance his proficiency in occupational or job-specific skills?
    ✓ Yes ___ No (If no, please explain)

Cooperative Education Coordinator: Susan Lee

Observer: Carlos Selgas

Observer Title: Retired Volunteer—Former Welder for XYZ Corp.

Figure 7—*Continued*

- It provides a more comprehensive picture of a problem than figures alone, enabling a viewer to gain a more complete and better balanced understanding.

- It may stimulate and facilitate analytical thinking and investigation into hidden facts and relationships.

Program evaluation information in particular can be more effectively presented using graphic displays. Detailed descriptions of ways to display information can be found in the following publications:

Franchak, S. J., and Kean, M. H. *Using Evaluation Results*. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1981.

Holley, F. M. *A Communication Handbook for Researchers and Evaluators*. Austin, TX: Austin Independent School District, 1979.

Schmid, C. F., and Schmid, S. E. *Handbook of Graphic Presentation*. New York: John Wiley and Sons, 1974.

Starr, H.; Maurice, C.; Black, M.; and Keller, P. *Selecting, Analyzing, and Displaying Planning Information*. Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1979.

One of the most commonly used graphic presentations is the bar chart. There are at least eight types of bar charts; for displaying time-use data, the simple bar chart can be quite effective. Figures 8 and 9 are provided for the purpose of developing a graphic display. The specific time-on-task and off-task categories have been inserted line by line down the left side of the chart. The percentage of time the cooperative vocational education student spent performing tasks in each category can be displayed by darkening the lighter dotted lines to correspond with that percentage, as measured on the horizontal axis.

Although time-use assessment is unfamiliar to many people, the use of the summary sheet (worksheet 2) and graphics displays should enable students, training sponsors, and others to grasp the meaning of the results quickly.

Summary

Conducting a time-use study involves three basic steps: preparing, observing, and calculating results. Some key concepts to bear in mind as you prepare for your first time-use analysis are given in figure 10.

Student: John Smith

Training Sponsor: Tele CommuniKations

Observer: Carlos Selgas Observation Date: 12/15/84

DIRECTIONS: Use copies of this worksheet to display graphically the student's time use summarized on worksheet 2. The specific time-on-task and off-task categories have been listed on the left side of the sheet. Develop a bar graph by darkening the dotted line for each category to correspond with the percentage (measured on the horizontal axis).

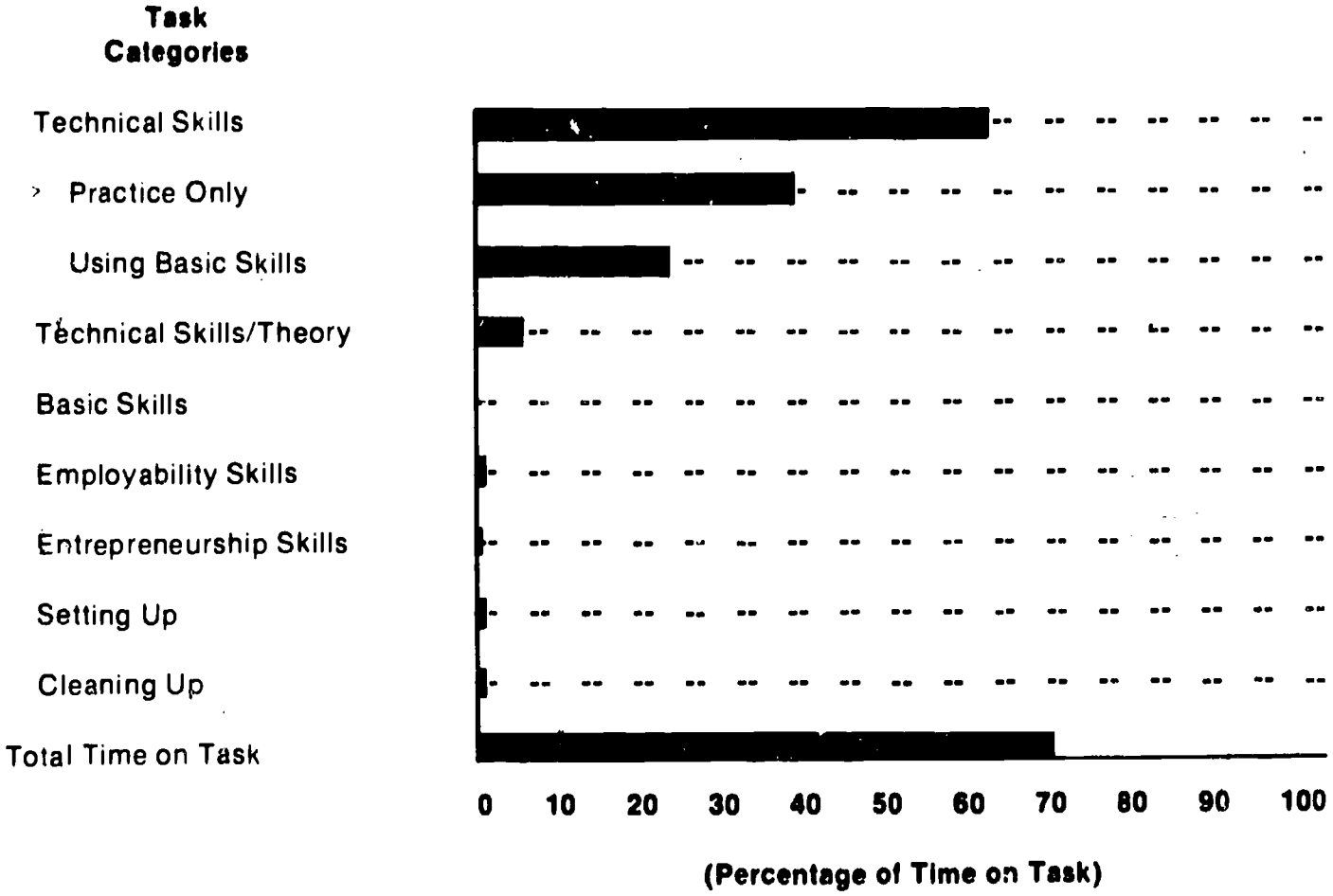


Figure 8. Sample form for developing a time-on-task bar graph

Student: John Smith

Training Sponsor: Tele CommuniKations

Observer: Carlos Selgas Observation Date: 12/15/84

DIRECTIONS: Use copies of this worksheet to display graphically the student's time use summarized on worksheet 2. The specific time-on-task and off-task categories have been listed on the left side of the sheet. Develop a bar graph by darkening the dotted line for each category to correspond with the percentage (measured on the horizontal axis).

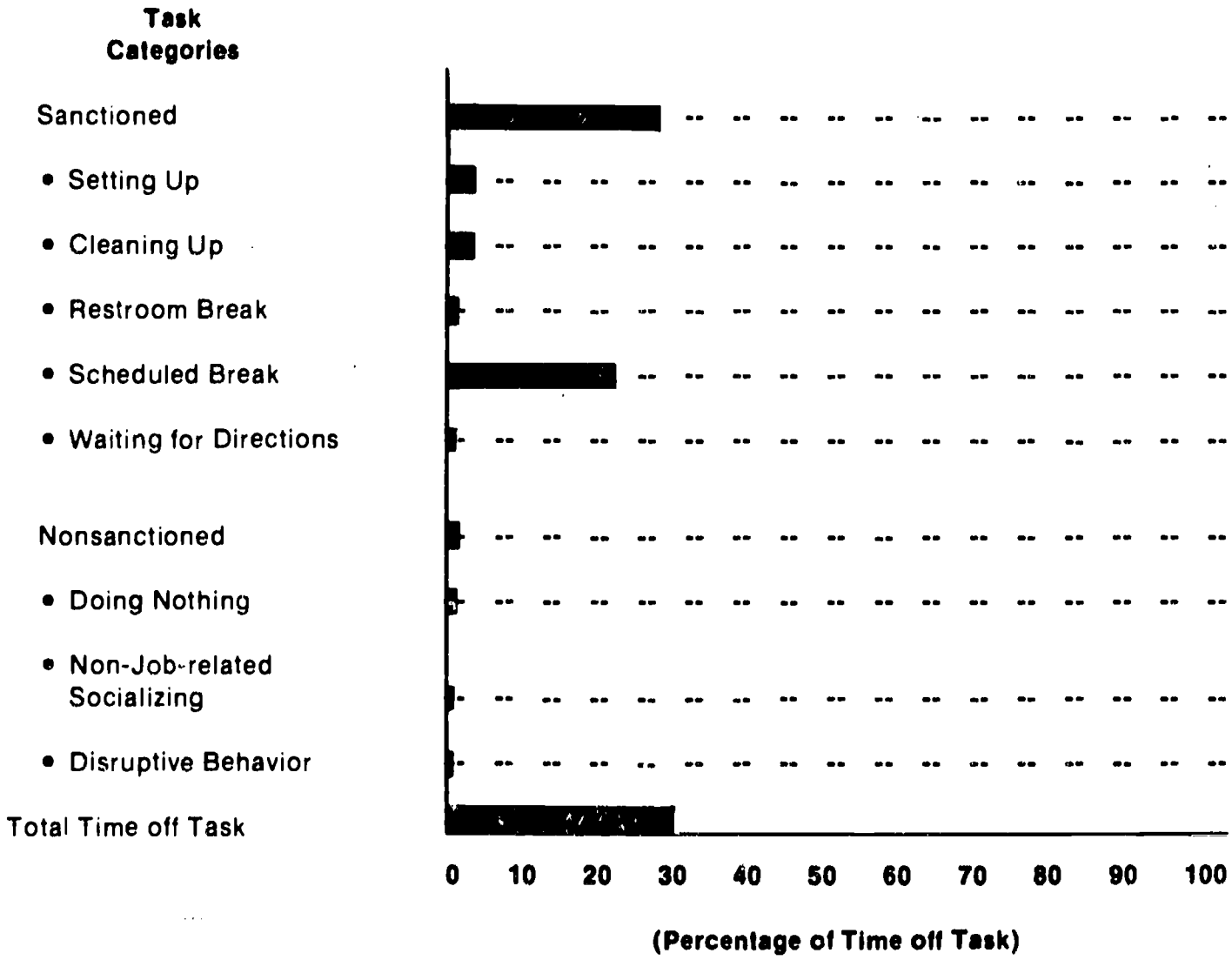
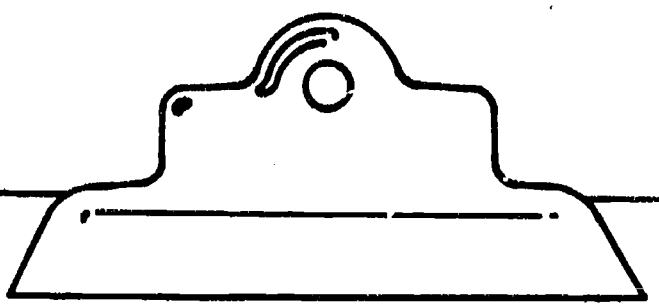
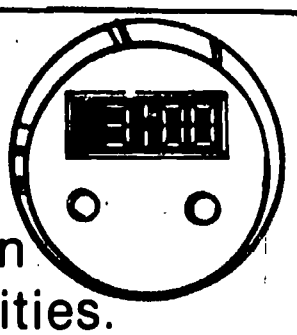


Figure 9. Sample form for developing a time-off-task bar graph





- The list of tasks in the training plan defines the student's on-task activities.
- Your objective will indicate which training stations should be observed.
- The observation form can be designed to gather information on behaviors of special interest to you.
- Information can be gathered by any of several people.
- Observers should be careful not to get in the way of any work being conducted at the training station and not to call attention to themselves.
- The focus of all notes should be on the kind and quality of training the student is receiving.
- The primary purpose for displaying time-use results is to present information in a concise, comprehensible manner.

Figure 10. Conducting a time-use study—key concepts

CHAPTER 4

WORKING WITH THE RESULTS

Gathering Additional Information

If your observation of a student at a training station is limited to one or two short visits, you do not have a representative sample of that student's training station experience. It is therefore important to gather additional information. Three basic sources of more information are available: the student, the training sponsor, and the student's vocational education teacher. In all likelihood, the information from these sources will be colored by opinion and judgment and should be evaluated carefully. Nevertheless, these discussions can add valuable feedback, particularly on subjective topics, such as the quality of the student's performance at the work site.

These interviews for additional information can be structured or short and casual, depending on the time you have available to conduct them. Specific questions ("Do you usually have as much trouble operating the copy machine as you did today?") generally elicit more information than general questions ("How's it going?"). Answers should be written down and kept on file.

It is often easy to talk to the student in person at school, perhaps before or after the related class. Other students who have worked at the site may contribute valuable insights as well.

Time constraints may dictate that you talk with the training sponsor by telephone. Avoid implying that you are evaluating the training station by emphasizing your interest in the student's learning experience. In talking with the work site supervisor, ask questions that specifically deal with the student's learning and relate to the tasks specified in the training plan. If, for example, the student works in an office, some relevant questions might be—

- "How much time does the student spend at the word processor?"
- "Is the student dependable?"
- "Has the student taken on any new tasks recently?"
- "What has the student learned since the last time we talked?"

The cooperative vocational education teacher will share information from a third perspective, which will vary with the structure of your cooperative education program. If the co-op student continues to receive formal training, the teacher will have information on progress in skills. If the student's formal education is now confined to attending the related instruction class, the teacher will probably have insights derived from the student's comments about the training station. Class discussions may indicate that the student is bored, challenged, or over supervised, is receiving too little instruction, feels overworked, or is underutilized.

Talking to the student, the training sponsor, and the co-op teacher is a good way to gather more information about the student's learning time at the training station. Open communication serves many purposes. In terms of the objectives of this handbook, communication is important because it keeps information flowing to the co-op coordinator. This, in turn, makes possible more effective evaluation, better program management, and program improvement.

Evaluating the Learning Experience

Cooperative vocational education exists to provide what the formal classroom cannot. This may include experience on various kinds of equipment and machinery not available in the classroom, such as large switchboards. It may include the opportunity to practice service skills, such as waiting tables or caring for children, that can be taught in the classroom but that cannot be experienced outside the actual setting. Whatever the nature of the training station, it should offer a learning experience that is an extension of classroom learning. Evaluation should, therefore, begin by asking whether the student's tasks at the training station are clearly related to the student's service area. Is the student learning skills that consolidate, reinforce, or extend classroom learning?

A second area for consideration is how well the student's time use corresponds to that shown in the training plan. Ideally, the student is performing the specific tasks detailed in the plan, but this is not always the case. Even when the training plan is being followed, observation may suggest that the student is no longer learning from the work, and that the training plan should be modified. (How to modify a plan is discussed later in this chapter.)

The student's time on and off task should be examined in view of conditions at the specific training station. It is important to note the difference between sanctioned and nonsanctioned time off task, since only the former is created by the demands of the job (such as setting up and cleaning up) and permitted by the employer. The student's time on task should be compared to that of other students in the program and in the service area or occupational category. Our study of time use at the training station (Franchak and Norton 1985) examined the time use of 40 students. Because of the study design, the results should not be generalized, but that may be of interest. Overall, the students were on task about 90 percent of the time. Only about 1 percent of their off-task time was spent in nonsanctioned, off-task activities, and the other off-task time was sanctioned by the work supervisor. These off-task activities included scheduled breaks, waiting for directions and so forth.

The remainder of your evaluation will rest on your criteria for co-op student learning. These standards must be defined by the individual co-op coordinator, with input from other educators and local or state agencies as appropriate.

In our study, a content analysis of the notes observers took during their observations of training stations suggested that six factors were related to the quality of the training station experience. These factors are given below, for possible use in defining evaluation criteria.

- **Type and variety of tasks performed.** Do the student's tasks offer the opportunity for both challenge and mastery? At high quality training stations, students seemed to be assigned tasks that enabled them to learn a variety of skills and remain interested in their work.

- **Level of supervision.** Students show varying needs for supervision, and training stations usually have distinct orientations toward more or less supervision. Whether the level of supervision is adequate should be evaluated in context of how much supervision the individual student needs to learn well.

- **Extent of instruction.** Instruction should be sufficient to guide the student through difficult and frustrating tasks, but not ever-present so that the student has no opportunity to demonstrate initiative.

- **Amount of work.** Students can have time off task because they are not given enough to do. The amount of work given a student should be neither so little that the student stands idle nor so much that the student is rushed and frustrated.

- **Conditions at the work site.** Inadequate ventilation, poor safety practices, uncomfortable temperatures, and the like may be problems in themselves that present danger to students and necessitate their removal. Borderline environmental problems may affect learning and should be evaluated for their impact and the possibility of change.

- **Supervisor's commitment to the student.** This factor can give insight into the student's learning. When the training sponsor is genuinely committed to teaching, the student's learning is facilitated. Observation at the training station should determine whether the training sponsor or an employee designated by the training sponsor is available to the student for discussion and instruction.

Your criteria for assessing student learning may be based on some or all of these factors, as well as on others you identify as important. The list could include, for example, gaining familiarity with new tools or processes, working with others, or solving problems. Some criteria may grow directly out of program objectives for students in that occupational specialty.

The Action Plan

Evaluation is sometimes seen as a process of simply passing judgment. Instead, it is ideally a process leading to improvement. In observing a training station, you are likely to identify problems or see ways students could learn more through better time use. These problem areas can be translated into specific goals, as shown in figure 11, which is an example of a cooperative education coordinator's action plan. The worksheet asks you to rank the desired changes in order of priority. For instance, the top *priority* for a business and office student working as a receptionist may be to increase time on task. The *goal*, decided in conference with the student and training sponsor, might be to increase that time on task from 70 percent to 85 percent. The specific *strategy* could be to give the student filing duties to carry out when the switchboard is not busy.

The next section of this chapter discusses ways to identify problem areas that may be responsible for a student's poor time use or low-quality learning experience. These ideas may also help you in formulating action plans.

Identifying Problem Areas

Poor time use can result from any number of causes, including the student's own attitude or a student and training station combination that just doesn't work. However, when a cooperative education coordinator is conscientiously screening students and making training station decisions carefully, it is unlikely that problems can always be attributed to the student. They may equally well originate at the workplace.

Problems within a training station may be signalled by low time on task. But even when the student's time on task is high, there may be problems that lower the quality of the learning experience. The conditions discussed here are not uncommon in workplaces; they have already been

DIRECTIONS: Use this worksheet to decide what changes you will make to enhance the cooperative education student's learning experience. Refer to worksheet 2 for information about the current use of time at the student's training station. In developing goals and strategies, consider school and work site policies and any other potential limitations.

Priority	Observed use of co-op student time	Goal for student use of time	Specific strategies for reaching goal
1	Student waits, does nothing too long	Increase time on task to 85%	Give the student filing duties to carry out when switchboard is not busy.
2	Student socializes using phone for nonbusiness purposes	Increase time on task to 85%	Give the student filing duties to carry out when switchboard is not busy
3			
4			
5			

Cooperative Education Coordinator Susan Lee

Student John Smith

Date 12/15/84

Training Station Tele CommuniKations

Figure 11. Cooperative education coordinator's action plan

observed in studies of time use in the vocational-technical classroom (Halasz and Behm 1983; Halasz, Behm, and Fisch 1984).

In evaluating a student, it may be helpful to consider whether any of the factors discussed here are present, either at the training station or in the student's practice or attitude. If they are, it is possible to work toward specific changes that can increase the student's time on task and improve the quality of the learning experience.

Poor Organization and Planning

Time on task is lowered by such problems as faulty equipment and inadequate or misplaced tools and supplies. In some workplaces it is almost taken for granted that one machine will break down every week. Sometimes this means the student does "make-work" with the files or sits idle until the typewriter is repaired; sometimes it means a lost hour trying to get a poorly cleaned paint sprayer to work properly. Such pursuits, although defined as sanctioned, off-task activities, are not very productive.

Day-to-day disorganization can be equally hard on students. Disorganization is sometimes the cause of excessive setup time, as the student searches for materials that seem to have disappeared. General disorganization can also lead to the student's spending a high amount of time waiting for directions. A training sponsor's disorganization is sometimes signalled by the fact that workers and co-op students stand idle, waiting for attention to problems and for work assignments.

Low Value Put on Student's Time

Students who are often off task or spend a great deal of time "fooling around" with setup or cleanup may have no idea that time is important. Some students in this category tend to become deeply involved in whatever they are doing, for example sweeping their work areas, and doing it too thoroughly and for too long a time. Others do not have clear images of the work goals to be met and the time it is supposed to take to meet them. For these students, Parkinson's Law really has truth; their work expands and fills all their time until someone imposes a deadline.

Firmer goals can be of great help in such situations, as can deadlines imposed by the training sponsor. The problem is sometimes appropriate to discuss with both the student and the training sponsor. When cooperative education students do not seem to value their work time, it may be that their training sponsors do not place high value on the students' time either and so have not pushed the students to be more productive. A key element of cooperative education is the students' productivity, a point that can only benefit the training sponsor who understands it.

Undefined Goals or Expectations

Complaints about a student's work or poor performance ratings sometimes result from the training sponsor's failure to communicate goals and expections clearly. For instance, a student might assume that in word processing a bulk mailing, absolute accuracy is required. The employer, on the other hand, may feel speed is the top priority, may expect a few errors, and may ultimately be very frustrated with the student's slow pace.

Students can become discouraged and slack in their work when they find they have not done the task well enough, soon enough, often enough, and so on; that is, they have not met the employer's hidden expectations. Educational research has shown that when goals are clearly defined in the vocational-technical classroom, students are on task more of the time (Halasz, Behm, and Fisch 1984). The value of deadlines and written goals and objectives in the workplace is also well known, and much management theory deals with defining objectives.

Hidden expectations are so common that sometimes an employer's complaint about a student's behavior or work surprises the student. Students may have no idea that there is a dress code at the work site, a production quota to meet, or an expectation that slack time will be used to organize materials or clean equipment. Older, more experienced workers and supervisors often feel students ought to know these things, but some students don't. One of the most helpful practices a training supervisor can have is that of clearly and directly telling students what is expected of them. The great majority will work hard to meet these expectations and to accomplish clearly defined work goals.

Unrealistic Expectations

Even well-defined goals and clearly expressed expectations create learning problems when they are not realistic. When too much is expected of a cooperative education student, frustration and discouragement will ultimately diminish learning. When too little is expected, the job is likely to become boring and routine. One of the best ways to keep students on task is to assign activities that are appropriate to their level of skill and that offer some new challenge.

If observation suggests that a student's work lacks challenge, this may indicate that the training sponsor's expectations are too low. It can be helpful to outline some of the other skills the student has and could use on the job, perhaps to the employer's benefit.

Students can also be discouraged by work that is too challenging. Training sponsors may have little background in teaching and do not necessarily know how to pace learning. Sometimes, for example, a student should be given only part of a job in order to learn one or two of the specific skills involved. If the training sponsor is prone to giving overambitious assignments, it can help to modify the training plan to make it more specific. Detailing tasks gives the training sponsor a clearer map of the progress the student can logically be expected to make. In working with task detailing, discuss what new tasks the student should be expected to undertake at any one time. The detailed training plan can greatly help to shape expectations in a realistic manner.

Unchallenging Tasks

Sometimes, because a training sponsor does not realize the extent of a student's skills, the student is given a very limited set of tasks that can be quickly mastered, so that no further learning is involved. Even good workers tend to spend more time off task when their duties demand nothing of them and offer no challenge. The ideal training situation is one in which the student is given new tasks from time to time. Once the employer understands that the student can and should tackle challenging tasks, a more productive learning experience should develop.

Overdependence on Supervision

Our observations suggest that most training sponsors tell cooperative education students how to do their jobs and trust them to proceed. Occasionally, however, a student (or an entire workplace) is too heavily supervised and is made to be dependent on the supervisor for materials or step-by-step instructions. This affects morale and interferes with learning.

The problem of overdependence can also originate with the student. Some students want continual help and confirmation of the smallest decisions; not every training sponsor knows how to manage a situation of this kind. Gentle intervention by the co-op coordinator can be helpful to all parties; both the employer and the student are losing work time. Moreover, the student should be learning an important skill, the ability to work independently. Overcontrol and overdependence work against this learning experience.

Too Little Positive Reinforcement

Most cooperative education coordinators have had the experience of telling students that their employer is very pleased with their work, only to find that the students are actually surprised. It is often assumed in the workplace that people are paid to do what they do and should need no further reward. This, however, has been proven to be untrue. People work harder and stay on task more when they get positive feedback. Young people are likely to need such feedback even more than adults.

When it is difficult to pinpoint a reason for a student's low time on task, it may help to observe the interactions between student and training sponsor. Does the training sponsor pay any attention at all to the student's work? Is the training sponsor's response curt and critical? If so, how does the student react to such comments? Sometimes there are obvious clues that a student feels undervalued and demoralized due to a lack of positive reinforcement. In other cases, the student's response is displayed indirectly, through disruptive behavior, idle time, too much unproductive time cleaning up, in short, avoidance of tasks for which the student feels unrewarded.

Dubious Role Models

Often, when a student at the training station spends time in disruptive behavior, socializing, and just doing nothing, there are others at the work site behaving the same way. Supervisors and co-workers set the tone of the workplace, and otherwise responsible students can rapidly assume undesirable habits. A cooperative education student working in a small shop where service offered by other employees is slow may very well act accordingly, becoming slow to wait on customers. A student machinist will tend to be no more precise and methodical than the immediate role models in the shop, and may even discard the good work habits learned in vocational-technical classes.

Sources of low time on task are sometimes visible during observation; in other cases, only the results of observation suggest the existence of a problem. The difficulties described here are frequently encountered in the workplace; most are fundamental errors in management. The next section of this handbook discusses working to solve these and other problems identified in your evaluation of the training station. As in other management situations, the key is communication. Identifying problems in fairly specific terms should help in communicating your concerns as an educator to the student and the training sponsor.

Modifying the Training Plan

The results of an assessment of a student's learning experience at a training station may indicate a need to modify the student's training plan. Observation may indicate, for example, that the student is not performing certain tasks specified in the training plan. In that case, either the training sponsor needs to begin assigning those tasks to the student, or the tasks in question were not appropriate to begin with and should be deleted from the training plan.

It may be that the student is performing the specified tasks but spending little time on certain activities designated in the training plan. Time-use data are very useful in this situation, since you can show the employer what you observed and, using the action plan, discuss what percentage of time use is more desirable.

We believe that specifying both the tasks to be performed and the approximate percentage of time to be spent on each task is desirable. If you have not done this in the past, you might consider beginning this practice as you modify training plans.

Here is a list of issues that can be addressed in a training plan, gleaned from *Place Co-op Students on the Job*, a module in Category J: Coordination of Cooperative Education of the Performance-Based Teacher Education Module Series (Hamilton et al. 1978) developed by the National Center:

- Student's career objectives and DOT code number (the *Dictionary of Occupational Titles* is a good source for determining competencies needed for occupations)
- Competencies to be developed
- Broad occupational areas in which student will be trained
- Specific tasks to be performed, in sequence
- Time period during which each task will be performed (entire time? first week?)
- Amount of allotted time to be spent on each task or each group of tasks
- Related classroom study (if applicable)

The module is a very useful source of ideas for designing a training plan and includes sample plans from several States. Note that the listing merely indicates training plan concerns and is not a complete guide to designing training agreements. It may, however, help you assess your own training plans and determine whether to examine other models.

Talking Over the Results

Whether the results of a time-use analysis are positive or negative, it is a good management technique to discuss them with both the student and the training sponsor. When results show that the student is on task a high percentage of the time, that instruction is available, that appropriate tasks are being assigned, and so on, positive feedback is in order. People who have been observed are often curious about the results, and good results should be shared.

When results indicate that changes should be made, a conference should be seen as a way for those concerned to decide together on goals and strategies for change. If you have adopted our previous suggestions, then communication is already established with the training sponsor and student. Your goal for this conference should be to encourage this communication and to arrive at a consensus on future change. Worksheet 4 (found in the Appendix) on developing the action plan can be presented at this point, either blank or with the perceived problems listed. Let the employer and student suggest goals for change and strategies for reaching those goals.

Follow-up is important in any attempt to promote change. Decide on a time when you will again stop at the training station or check with the training sponsor and student by telephone; probably no more than 2 weeks should elapse before this follow-up. It is a good idea to check in again after another similar interval. At some time within a month or two after the first observation, you should again observe the student at the training station.

Checklist 1 lists strategies that are helpful in using the results of time assessment to improve a student's learning experience at the training station.

Summary

This handbook has focused on a method for assessing time use at the training stations in your program and using the results productively to enhance the learning experience of individual students and to evaluate and improve your program as a whole. Figure 12 lists a few of the ideas discussed in the final section, which emphasizes working with the results to implement positive change.

The results of your analysis may also be of interest to others, including cooperative education coordinators and teachers, as well as State and local administrators. Time-use assessment adds useful information to the evaluation effort, giving specific results that can be used to work toward positive change. We are confident that the method presented here can help you improve your cooperative education program.

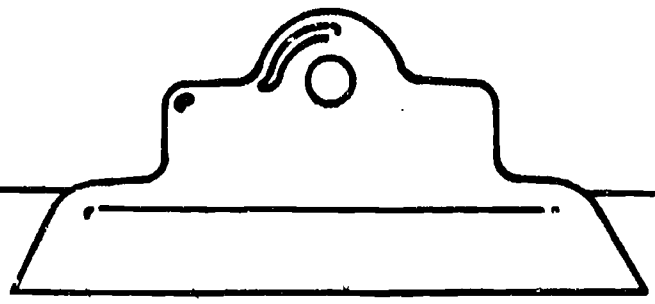
CHECKLIST 1

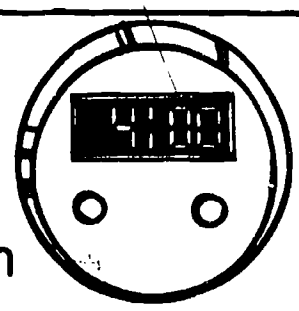
STRATEGIES FOR USING TIME-USE ASSESSMENT RESULTS

Have you considered the need to:

	Yes	No
1. Identify the clients of time-use study results	☐	☐
2. Present results in a format clients can understand	☐	☐
3. Be brief in presenting results	☐	☐
4. Emphasize the nontechnical aspects of findings	☐	☐
5. Deal with areas of resistance	☐	☐
6. Be alert to special problems inherent in the training station environment	☐	☐
7. Encourage active client participation in improving student time use	☐	☐
8. Arrange for follow-up assessment	☐	☐

SOURCE Adapted from Franchak and Kean (1981, p. 54).





- Cooperative vocational education exists to provide what the formal classroom cannot.

- Open communication keeps information flowing to the cooperative education coordinator.

- Evaluation should begin by asking whether the student's tasks at the training station are clearly related to the student's service area.

- Problem areas can be translated into specific goals.

- One of the best ways to keep students on task is to assign activities that are appropriate to their level of skill and that offer some new challenges.

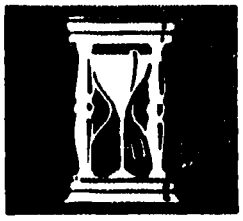
- Follow-up is important in any attempt to promote change.

Figure 12. Working with the results—key concepts

APPENDIX

- Observation Form I for Manual Data Analysis
- Observation Form IA for Computer Data Analysis
- Worksheet 1: Computer Time Use
- Worksheet 2: Summary of Time-Use Findings
- Worksheet 3: Time-on-Task Bar Graph
- Worksheet 4: Time-off-Task Bar Graph
- Worksheet 5: Cooperative Vocational Educator's Action Plan

OBSERVATION FORM I



TIME-USE STUDY FOR CO-OP STUDENTS AT THEIR TRAINING STATION

Identification Codes				
Date Mo	Date Day	Observer	Student Number	Site

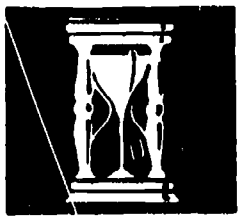
	Time	Time on Task								Time off Task							
		Technical Skills Practice		Technical Skills/ Theory	Basic Skills	Employability Skills	Entrepreneurship Skills	Setting Up	Cleaning Up	Sanctioned					Nonsanctioned		
		Practice Only	Using Basic Skills							Setting Up	Cleaning Up	Restroom Break	Scheduled Breaks	Waiting for Directions, etc.	Doing Nothing	Non-Job-related Socializing	Disruptive Behavior
1	:																
2	:																
3	:																
4	:																
5	:																
6	:																
7	:																
8	:																
9	:																
10	:																
11	:																
12	:																
13	:																
14	:																
15	:																
	TOTALS																

Notes:* _____

*Describe students' ongoing activities at the training site. Be sure to note the following:

- Specific on-task activities
- Critical incidents
- Critical comments
- Critical work site characteristics

OBSERVATION FORM IA



TIME-USE STUDY FOR CO-OP STUDENTS AT THEIR TRAINING STATION

Identification Codes				
Date Mo	Date Day	Observer	Student Number	Site
1-2	3-4	5	6-7	7-8

	Time	Time on Task								Time off Task							
		Technical Skills Practice		Technical Skills/ Theory	Basic Skills	Employability Skills	Entrepreneurship Skills	Setting Up	Cleaning Up	Sanctioned					Nonsanctioned		
		Practice Only	Using Basic Skills							Setting Up	Cleaning Up	Restroom Break	Scheduled Breaks	Waiting for Directions, etc.	Doing Nothing	Non-Job-related Socializing	Disruptive Behavior
1	:																
2	:																
3	:																
4	:																
5	:																
6	:																
7	:																
8	:																
9	:																
10	:																
11	:																
12	:																
13	:																
14	:																
15	:																
		9-10	11-12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28

Notes:* _____

*Describe students' ongoing activities at the training site. Be sure to note the following:

- Specific on-task activities
- Critical incidents
- Critical comments
- Critical work site characteristics

WORKSHEET 1

COMPUTE TIME USE

Total minutes observed: _____

Identification Codes

Student: _____
Training Sponsor: _____
Observer: _____
Observation Date: _____

Task Category	Total Minutes Observed			Percentage Of Observed Time*	
1. Technical skills practice	____	÷	____	=	____%
2. Technical skills w/basic skills	____	÷	____	=	____%
3. Technical skills/theory	____	÷	____	=	____%
4. Basic skills	____	÷	____	=	____%
5. Employability skills	____	÷	____	=	____%
6. Entrepreneurship skills	____	÷	____	=	____%
7. Setting up (on task)	____	÷	____	=	____%
8. Cleaning up (on task)	____	÷	____	=	____%
TOTAL TIME ON TASK (add percents 1 through 8)	____	÷	____	=	____%
9. Setting up (off task)	____	÷	____	=	____%
10. Cleaning up (off task)	____	÷	____	=	____%
11. Restroom break	____	÷	____	=	____%
12. Scheduled breaks	____	÷	____	=	____%
13. Waiting for directions, etc.	____	÷	____	=	____%
TOTAL SANCTIONED TIME OFF TASK (add percents 9 through 13)	____	÷	____	=	____%
14. Doing nothing	____	÷	____	=	____%
15. Non-job-related socializing	____	÷	____	=	____%
16. Disruptive behavior	____	÷	____	=	____%
TOTAL NONSANCTIONED TIME OFF TASK (add percents 14 through 16)	____	÷	____	=	____%

WORKSHEET 2

SUMMARY OF TIME-USE FINDINGS

Student: _____ Observation Date: _____
Training Station: _____ Observation Time: _____

DIRECTIONS: Duplicate this worksheet, giving copies to the cooperative education coordinator, teacher, observer and others involved in interpreting the results. Refer to the completed observation forms and worksheet 1 to answer the following questions.

1. What percentage of time did the cooperative education student spend on task? _____ percent

2. What percentage of the observation time did the student spend on specific on-task activities?

   _____ Technical skills practice only

   _____ Technical skills practice using basic skills

   _____ Technical skills/theory

   _____ Basic skills

   _____ Employability skills

   _____ Entrepreneurship skills

   _____ Setting up

   _____ Cleaning up

3. What percentage of the time did the student spend on specific sanctioned, off-task activities?

   _____ Setting up

   _____ Cleaning Up

   _____ Restroom break

   _____ Scheduled breaks

   _____ Waiting for directions

4. What percentage of the time did the student spend on nonsanctioned, off-task activities?

_____ Doing nothing

_____ Non-job-related socializing

_____ Disruptive behavior

5. Did the student's training station activities reflect the learning activities designated in the training plan?
   ____ Yes ____ No

6. How much responsibility did the training sponsor have in the cooperative education student's training station activities?
   ____ Very much ____ Some ____ Little

7. Did the student display safe work practices?
   ____ Yes ____ No

8. Did the cooperative education student work independently while at the training station?
   ____ Yes ____ No

9. What type of working relationship existed between the cooperative education student and the regular employees?

   ____ Independent ____ Supportive

10. Did the training station activities provide the student with the opportunity to enhance his proficiency in occupational or job-specific skills?
    ____ Yes ____ No (If no, please explain)

_____

Cooperative Education Coordinator: _____

Observer: _____

Observer Title: _____

WORKSHEET 3

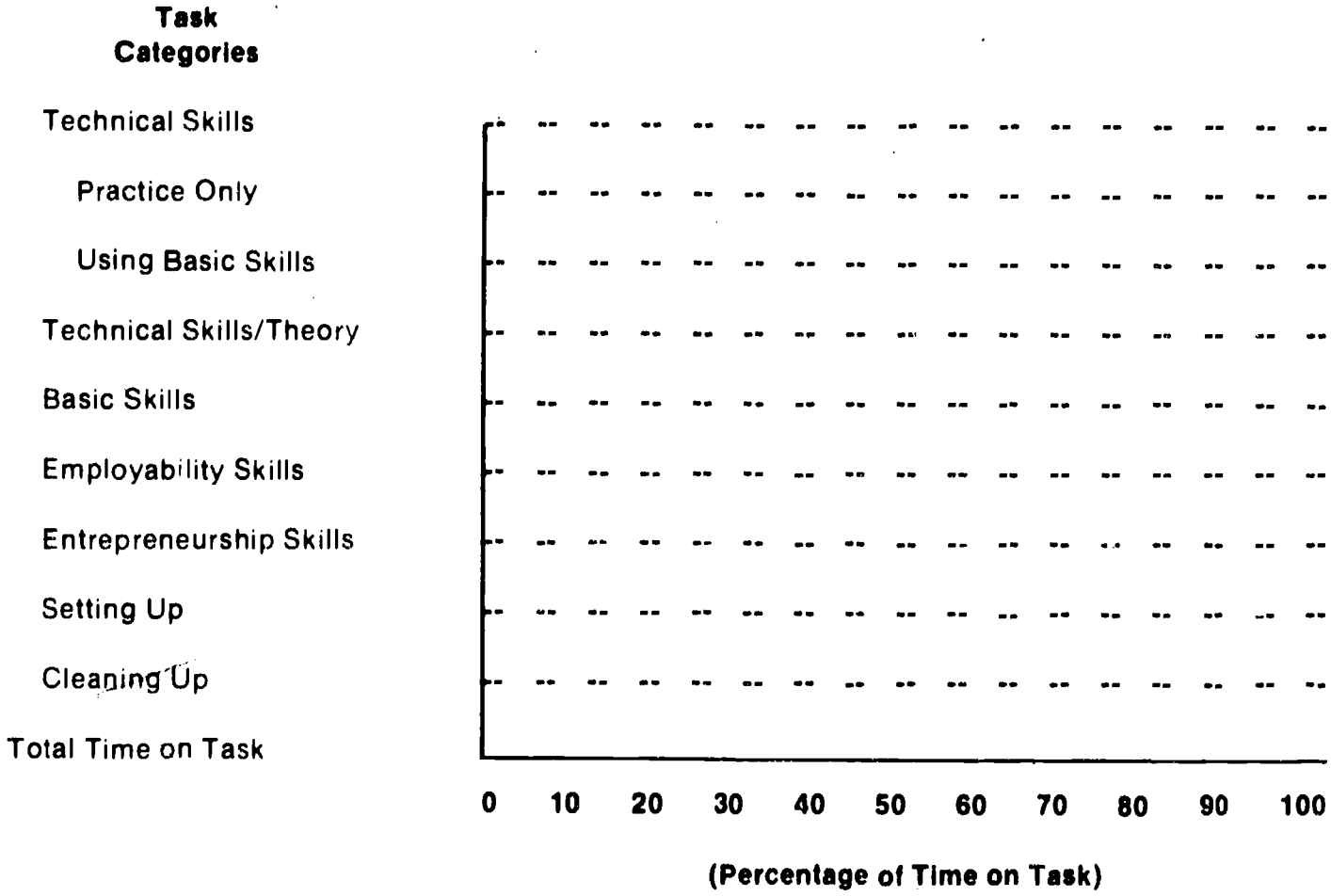
TIME-ON-TASK BAR GRAPH

Student: _____

Training Sponsor: _____

Observer: _____ Observation Date: _____

DIRECTIONS: Use copies of this worksheet to display graphically the student's time use summarized on worksheet 2. The specific time-on-task and off-task categories have been listed on the left side of the sheet. Develop a bar graph by darkening the dotted line for each category to correspond with the percentage (measured on the horizontal axis).



WORKSHEET 4

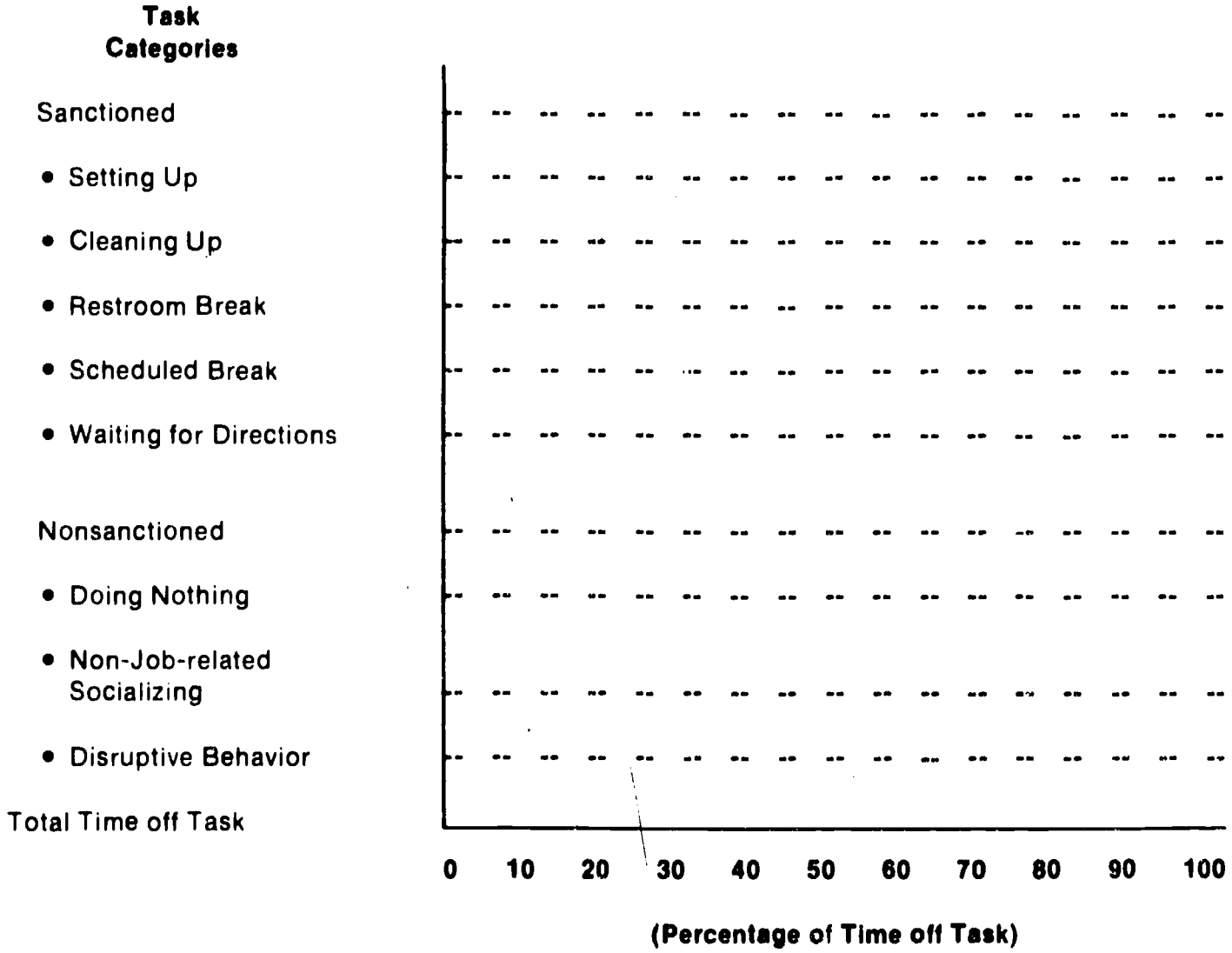
TIME-OFF-TASK BAR GRAPH

Student: _____

Training Sponsor: _____

Observer: _____ Observation Date: _____

DIRECTIONS: Use copies of this worksheet to display graphically the student's time use summarized on worksheet 2. The specific time-on-task and off-task categories have been listed on the left side of the sheet. Develop a bar graph by darkening the dotted line for each category to correspond with the percentage (measured on the horizontal axis).



WORKSHEET 5

COOPERATIVE VOCATIONAL EDUCATOR'S ACTION PLAN

DIRECTIONS: Use this worksheet to decide what changes you will make to enhance the cooperative education student's learning experience. Refer to worksheet 2 for information about the current use of time at the student's training station. In developing goals and strategies, consider school and work site policies and any other potential limitations.

Priority	Observed use of co-op student time	Goal for student use of time	Specific strategies for reaching goal
1			
2			
3			
4			
5			

Cooperative Education Coordinator _____

Student _____

Date _____

Training Station _____

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