APPLICATION OF TIME STUDY (STANDAR TIME) METHOD TO STRATEGIC ACTIVITIES IN A DEPARTEMENT AT A PRIVATE UNIVERSITY

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Abstract

Several important activities that were identified as having a significant influence on the smooth running of teaching and learning activities and student graduation at the Bachelor Degree Management Study Program at Widyatama University (MN UTAMA) were the Plotting of Teaching Lecturers and Plotting of Supervisors. The speed of completion of the two activities is a component of measuring the performance of the MN UTAMA manager so of course it is necessary to set a standard for completion. This study aims to calculate the Standard Time for the completion speed of each of these activities. Both primary data and secondary data were used in this study. The unit of observation of this study is the manager of MN UTAMA. The data analysis method used is the Time Study Method. The results showed that the Standard Time for Plotting Lecturers was identified for 23 days and the Standard Time for Plotting for Supervisors was identified for 11 days. Calculation of Standard Time of Lecturer Teaching Plotting and Supervisory Lecturer Plotting resulting from this research then needs to be informed to related parties for their respective interests. The standard time calculation generated from this research will be useful for various parties, including Study Program Managers, Faculty Managers, Academic Bureaus, and Human Resources Bureaus.

Keywords: time study, standar time, plotting, departemen, university

Introduction

The Bachelor Degree Management Study Program is the most activity-intensive study program and work program every year at Widyatama University (A. M. Febrianti, Personal Communications, November 02, 2021). Various activities are carried out by the Widyatama University Undergraduate Management Study Program (MN UTAMA) ranging from internal activities to external activities both academic and non-academic. The number of students is + 3,813 people (Dikti, 2021) and + 89 lecturers (Dikti, 2021) making MN UTAMA managers have to allocate time and resources properly. The number of managers of MN UTAMA which is not too many,

namely 4 people, must encourage managers to compile a priority list of important activities that must be carried out.

Some of the important activities identified that greatly affect the smoothness of teaching and learning activities and student graduation at MN UTAMA are the Plotting of Teaching Lecturers and Plotting of Supervisors. Plotting for Teaching Lecturers who are good, fast, and accurate will greatly affect many things, including (1) the comfort, performance, and welfare of the lecturers, (2) the comfort and achievement of student learning, (3) supporting the effectiveness and efficiency of scheduling lectures by the Academic Bureau. Similar to the Plotting of Teaching Lecturers, good, fast, and accurate Plotting of Supervisors will certainly affect various things, including (1) the convenience and performance of lecturer guidance, (2) the convenience and speed of completing student final assignments, and (3) high student graduation rates for Study Programs, Faculties, and Rectorates.

Plotting for Teaching Lecturers and Plotting for Supervisors, because they are important activities, of course, the speed of working on these two activities will be of interest or monitoring by various parties, namely (1) students, (2) lecturers, (3) Academics, and (4) faculties. The speed of these two activities is part of measuring the performance of MN UTAMA managers (I. Nilasari, Personal Communications, November .The size of the speed of completion of the two activities must of course be determined properly and wisely so that the MAIN MN manager will later be assessed accurately and objectively by the assessor or the interested party [1] To determine these precise measurements, this study used the Time Study Method or Standard Time [1](and This method was chosen because of its easy and effective character to be applied in many situations, both in manufacturing companies and non-manufacturing companies [2, 3]

Literature Review

Time Study (Standard Time)

Time study was introduced by Frederick W. Taylor in 1881[4] Time Study is a method for determining the standard time to complete a repetitive activity. Although standard time determination through Time Study is an old method, until now this method is still very widely used by various business fields, both in manufacturing, trading, and services (Tampubolon, 2014). Other methods besides Time Study which are also often discussed in academic books are (1) past experience, (2) time standards are determined, and (3) work sampling. The three methods were not used because they were caused by one or more of the following factors, namely (1) not objective, (2) less accurate, (3) complexity, (4) bias, and (5) others The output of the time study is standard time and standard time itself is defined as the amount of time that a qualified worker must take to complete a specific task, work at a sustainable rate, using methods, tools and equipment, raw materials, and workplace arrangements that are appropriate. already exists [1, 5]

The Time Study procedure involves calculating time with a sample of a worker's performance and using it as a standard[1]The Time Study Procedure according to Heizer and Render (2012) consists of 8 steps, namely: (1) defining the work, (2) dividing the work into appropriate elements, (3) determining the number of observations, (4) calculating the time and recording the time of the elements and performance level, (5) calculate the average observation time, (6) calculate the normal time, (7) calculate the total normal time, and (8) calculate the standard time.

Calculating standard time is basically giving relief or allowance from normal time. The slack aims to provide grace time for employees for personal needs (eg: eating, fatigue, worshiping, urinating and so on) [2]. [6-8] divide slack into three categories (types) namely (1) personal time allowance, (2) unavoidable delay allowance, and (3) fatigue. The value of the allowance for each activity will of course be different and it

requires carefulness and experience from the standard time setting team on the characteristics of an activity and also the human resources for implementing it[9-13].

Methods

This research is a type of qualitative research[14]. The data used in this study used two data sources, namely secondary data and primary data [4, 15]. Secondary data used in the form of Work Programs, Annual Reports, Academic Guidelines, and others. The primary data used are the results of interviews, and observations or observations. The main data source in qualitative research is primary data[16] , so that in this study qualitative data is more dominantly used in analysis and determining conclusions.

The data analysis method of this research is using the Time Study Method or the Standard Time calculation method from Frederick W. Taylor[6] This method is used because it is relevant to the title or purpose of the research conducted, namely to determine the standard time [2]. The steps or procedures for preparing standard time using the Time Study method have been described in detail in the theoretical review section above. The object of research or the unit of analysis of this research is the Management Study Program of Widyatama University, while the unit of observation of this research is the manager of the MN UTAMA.

Results and Discussions

Plotting of Teaching Lecturers
The results of field observations and interviews with managers regarding the elements in Lecturer Teaching Plotting activities at MN UTAMA can be presented in detail in the table below: *T a b l e 1*

Plotting of Teaching Lecturers

Work Elements	Completion Time (in a day)				Performance Level
	Fastest	Normal	Lastest	Average	
(A) Requesting Data (Material for Plotting)	1	2	3	2	100 %
(B) Table Setting for Plotting	0,08	0,12	0,16	0,12	110 %
(C) Input Lecturer Name Into Lecture Schedule	3	4	5	4	105 %
(D) Input Lecture Schedule to SIAKAD (Academic Information System)	3	4	5	4	105 %
(E) Evaluation 1 - Input Lecture Schedule to SIAKAD	1	2	3	2	110 %
(F) Revision 1 - Input Lecture Schedule to SIAKAD	1	2	3	2	110 %
(G) Revision 2 - Input Class	1	2	3	2	110 %

Schedule to SIAKAD					
(H) Revision 3 - Input Lecture Schedule to SIAKAD (Final Plotting Results)	1	2	3	2	110 %
TOTAL	11,08	18,12	25,16	18,12	

Sources : Observation and Interview (2021)

From table 1. above, the normal time calculation for each work element is generated, namely:

Normal time for A = (Average Observation Time) x (Performance Level)
= 2 x 1
= 2 day
Normal time for B = 0,12 x 1,1
= 0,13 day
Normal time for C = 4 x 1,05
= 4,2 day
Normal time for D = 4 x 1,05
= 4,2 day
Normal time for E = 2 x 1,1
= 2,2 day
Normal time for F = 2 x 1,1
= 2,2 day
Normal time for G = 2 x 1,1
= 2,2 day
Normal time for H = 2 x 1,1
= 2,2 day

Based on the normal time of each work element above, the resulting total normal time or normal time for all work is as follows:
Total normal time = 2 + 0,13 + 4,2 + 4,2 + 2,2 + 2,2 + 2,2 + 2,2
= 19,33 day
Referring to the total normal time, the standard time can be calculated as follows:
Standard time = Total normal time / 1- Allowance factor
= 19,33/(1-0,15)
= 22,74 day

By referring to the results of the calculation of the standard time above, it can be concluded that the standard time of Lecturer Teaching Plotting is 22.27 days or 23 days. The standard time for plotting lecturers of 23 days is biased, this is caused by activities G (Revision 2 - Input Lecture Schedule to SIAKAD) and H (Revision 3 - Input Lecture Schedule to SIAKAD or Final Plotting Results) which are basically caused by changes in data academics, namely students who have follow-up registration (VS Marinda, Personal Communication, November 07, 2021). Another bias that needs to be eliminated is the existence of activity A (Requesting Material Data for Plotting), this activity causes bias because the control is in the Academic Bureau and not in the Study Program. Based on these biases, the more appropriate standard time for Lecturer Plotting is 22.74 – [(2.2x0.85)+(2.2-0.85)+ (2x0.85)] = 16 days. 16 days is obtained by subtracting the standard time (total) from the standard time for activities G, H, and A.

If the target of the study program (RR Padmakusumah, Personal Communication, November 07, 2021) is that plotting is completed within 1 week before the schedule (day or date) of the first lecture of the semester starting, then the academic must

provide data on plotting material for the Study Program which is 23 days (16 +7) = 23 days before the first lecture of the semester starts.

Plotting of Suvervisor Lecturers

The results of field observations and interviews with Study Program managers related to the elements in the Plotting activities of Supervisors in the MN UTAMA can be presented in detail in the table below:

Table 2

Plotting of Suvervisor Lecturers

Work Elements	Completion Time (in a day)				Performance Level
	Fastest	Normal	Terlambat	Fastest	
(A) Withdrawal of Data Based on Filling in the Academic Form	0,04	0,04	0,04	0,04	90%
(B) Crosscheck Academic Form Data with Pre-Guidance Database	1	2	3	2	90%
(C) Classification of Submission Data Based on Output Filling in the Academic Form	1	2	3	2	100%
(D) Verify the Requirements File Uploaded on the Academic Form	1	2	3	2	80%
(E) Confirmation of Requirements for Students (Lack of/Completing Files)	1	2	3	2	80%
(F) Filling in the name of the Advisory Lecturer	1	2	3	2	80%
(G) Sending Drafts of Supervisors and Guidance to Admin	1	2	3	2	100%
(F) Delivery of Guidance Cards to Supervisors and Students by Admin	1	1	5 (ubnormal time)	1	100%
TOTAL	7,04	13,04	23,04	15,04	

Sources : Observation and Interview (2021)

From table 2. above, the normal time calculation for each work element is generated, namely:

Normal time for A   = (Average Observation Time) x (Performance Level)
          = 0,04 x 0,9
        = 0,036 day
Normal time for B = 2 x 0,9
          = 1,8 day
Normal time for C = 2 x 1
          = 2 day
Normal time for D = 2 x 0,8
          = 1,6 day
Normal time for E = 2 x 0,8

$$= 1,6 \text{ day}$$

Normal time for F $= 2 \times 0,8$

$$= 1,6 \text{ day}$$

Normal time for G $= 1 \times 1$

$$= 1 \text{ day}$$

Based on the normal time of each work element above, the resulting total normal time or normal time for all work is as follows:

Total Normal Time $= 0,036 + 1,8 + 2 + 1,6 + 1,6 + 1,6 + 9$

$$= 9,64 \text{ day}$$

Referring to the total normal time, the standard time can be calculated as follows:

Standard time $=$ Total normal time / 1- Allowance factor

$$= 9,64 / (1-0,10)$$

$$= 10,71 \text{ day}$$

By referring to the results of the calculation of the standard time above, it can be concluded that the standard time of Plotting for Supervisors is 10.71 days or 11 days. The standard time of Plotting for Supervisors at the beginning of the observation there is biased data, namely in activity G (Sending Guidance Cards to Supervisors and Students by Admin). This biased data is excluded from the calculation so that the average rating for activity G becomes $(1+1)/2 = 1$ (obtained from the fastest time added standard time and then averaged).

If the target of the study program (R. R. Padmakusumah, Personal Communication, November 07, 2021) is that plotting is completed a maximum of 1 month at the beginning of each semester, then students must apply for guidance (fill out the guidance application form) 11 days before the second month of semester lectures. 11 days is obtained from 2 months deducted by the standard time of Plotting for Supervisors.

The results of the calculation of the standard time above, of course, need to be communicated and coordinated with various related parties so that these parties can support or align with the wishes of the Study Program managers and Faculty managers. The Academic Bureau, for example, needs to provide data on lecturer plotting materials earlier, not giving it 1 week before lectures (V. S. Marinda, Personal Communication, November 07, 2021). Provision of data on plotting material that is late will pose a big risk to the accuracy of the distribution of courses or credits for lecturers because the plotting of lecturers' teaching is carried out in a hurry. For the Bureau of Human Resources, the calculation of the resulting standard time can be used as additional reference material for various purposes, including (1) assessing the workload of Study Program managers, (2) assessing the performance of Study Program managers, (3) adding or removing employees or Management of Study Programs, and others.

CONCLUSION

From the research conducted, it can be concluded that the use of Standard Time for the Plotting of Teaching Lecturers and Plotting of Supevrisor Lecturers is able to provide a clear and measurable picture of the Standard Time of the two activities. Standard Time for Plotting Teaching Lecturers is identified for 23 days and Standard Time for Plotting for Supervisors Lecturer is identified for 11 days. The standard time of 23 days and 11 days is generated after the calculation of the standard time is subtracted by factors beyond the control of the Study Program as well as by subtracting elements of an activity whose completion time is less consistent, both based on observations and interviews.

Calculation of Standard Time of Lecturer Teaching Plotting and Supervisory Lecturer Plotting resulting from this research then needs to be informed to related parties for their respective interests. The standard time calculation generated from

this research will be useful for various parties, including Study Program Managers, Faculty Managers, Academic Bureaus, and Human Resources Bureaus. Managerial advice from the results of the study is that standard time calculations should be made for all routine activities in the Study Program. Suggestions for further research is that research can be carried out regarding the calculation of standard time that applies to all activities and which can be applied to all Study Programs or Departements at Widyatama University.

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