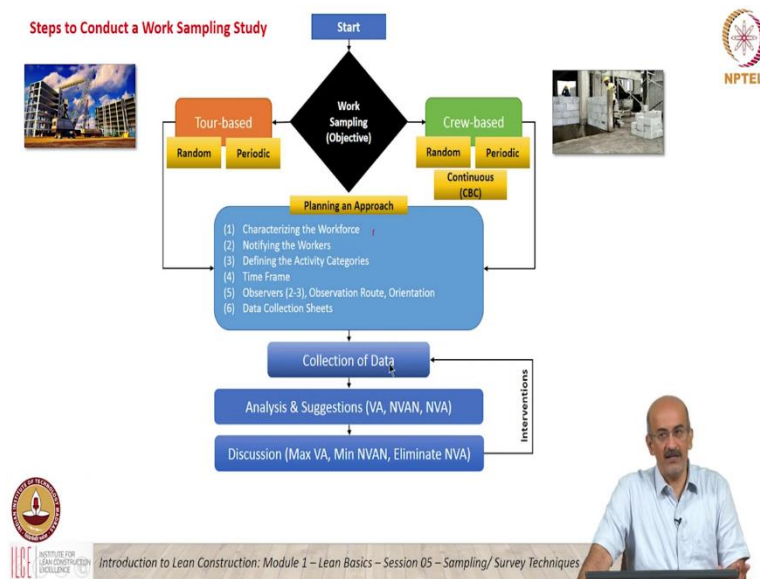


Introduction to Lean Construction
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Module 1
Lecture 27

Steps to Conduct a Work Sampling Study; WS Outcomes

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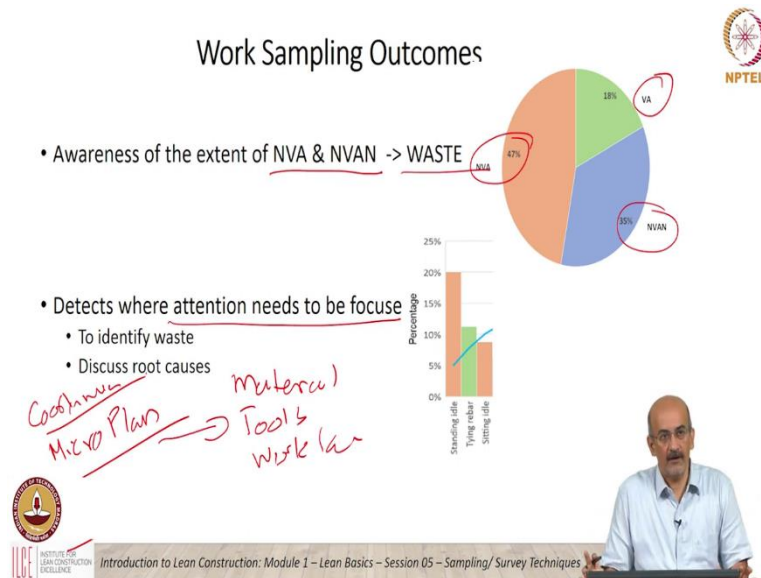
Professor: Now, if you look at the steps to conduct a work sampling study, again, many of these terms are now familiar to you, I have a tour-based approach, I have the crew-based approach, in the tour-based approach, I have the random or the periodic. In the crew-based, I have random, periodic or continuous, like I said continuously for illustration in this case.

We have to plan the approach, there are many aspects to look at when you plan the approach, we have to characterize the workforce, we would like to notify the workers, I will come back to this. Your defined activity categories of the work, the time frame, you know, like we said, how many observers are there, the route of the observers, do an orientation for the observers, design data collection sheets, there are several things which we have to do, which is why we are calling it a formalized technique.

It is not that I simply go through and do it, and today we are, we have an app on work sampling, you can go to a site with a cell phone and do this categorization, where a lot of the report generation everything becomes automated. Now once you plan the approach, you

collect the data, you do the analysis, and then you have to have a discussions on, you know, looking at where is the value-added, why, maximize value-added, minimize, eliminate all of these things have to be discussed as a part of the results. And based on this, you go back and do collection of data again.

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Now, when you look at work sampling outcome like we discussed, you can have non-value added and non-value added but necessary, and this indicates waste. So, for example, here is a example of a work sample output, what do you think? What do you think of this outcome?

Student: The value added is very less.

Professor: Yes, value-added seems to be very less. Non value added is very high, non-value added is necessary also. So, there is something I would be wondering about us, And if I go into, so from a very broad perspective, I see my value-added proportion is not good. This itself is an impact, so I cannot go on saying my site is doing okay, there is something in my site I might need to look further. It brings about an awareness, first of all to the team that look, “my gosh, I am only getting eighteen percent of what do you call value-added or a direct work on my site”?

Now, you go one level deeper, you will find that most of this non-value added is because of standing idle or sitting idle. So my workers are half the time standing idle on the site, now, why are they standing idle? If you ask the question, you have to ask yourself the question, so you can go to more where attention needs to be very focused. Are they standing idle because

of materials? Look there are a lot of things, you know, tools, work face, lack of instructions, there are many things that contribute towards, why somebody might be idle.

And unless you address those a lot of times, this goes back to micro planning. Your micro plan or coordination, there is no coordination between crew, there is no micro planning, there is a lot of issues there and when you go to this level you are at the lean level. It is not you have to have coordination between crews, you have to have a proper look ahead plan, you have to have a proper way of understanding what your constraints are. So, when you bring in something now, this tells you, look I need something more to be able to address these issues. Work sampling does not solve the issues it only brings it up to a stage where you can now see things from a different perspective.

Now, let us say you had done a productivity measurement system on the same data, what would you get? What do you get? You will get low productivity, benchmark productivity is this, the productivity is low, that is all you will get, why is the productivity low?

Student: Parts of the stage.

Professor: How do we know?

Student: Through the sampling.

Professor: No sampling, no productivity measurement system is only productivity measurement, it says number of man hours output, and you get your productivity output, and you do not know whether it if they are standing idle, sitting idle, this, that there is no feel of what is happening outside, it is only a report. Here, there is a feel, so you can understand it is not, so now does this give you productivity directly? Work sampling? No, you need productivity also, but you also need the feel of why the productivity is low, that is why these can be used in combination.

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Quiz



1. Consider the following statements and select the correct option: with respect to work sampling approach

Statement 1: Defining Activity categories is optional for work sampling approach

Statement 2: Only one person should be engaged in work sampling approach to avoid biases

Statement 3: Orientation step is optional for work sampling approach

Statement 4: Work sampling method is a one-time activity

- a) All Statements are True
- b) All Statements are False
- c) Statements 2 and 3 are True
- d) Statements 1 and 4 are True
- e) None of the above

b) All Statements are False



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