

**NBA Accreditation and Teaching – Learning in Engineering (NATE)**

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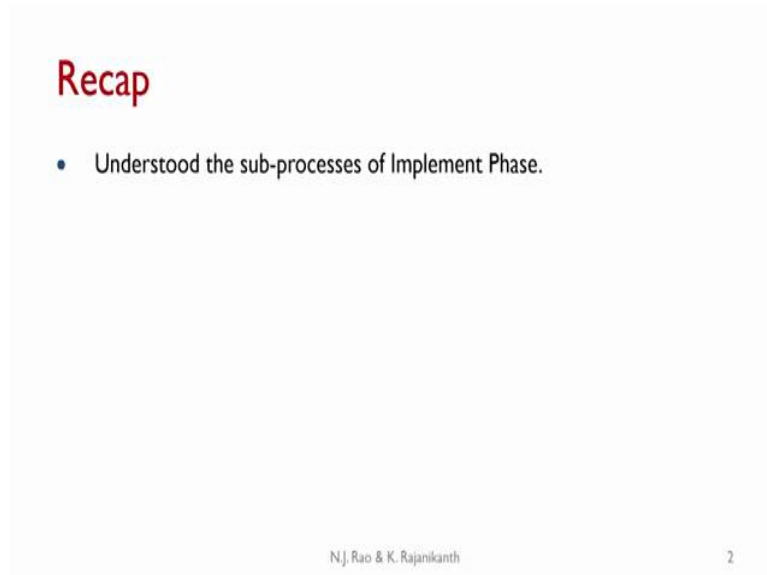
**Indian Institute of Science, Bengaluru**

**Lecture 33**

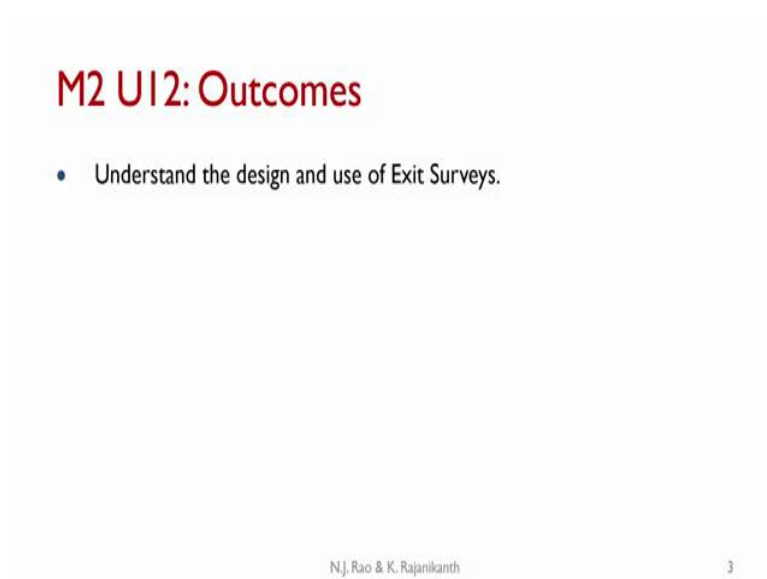
**Exit Surveys 1**

Greetings, welcome to module 2, unit 12 on Exit Surveys.

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A presentation slide with a white background. The title 'Recap' is written in a large, bold, red font at the top left. Below it, a single bullet point in black text reads 'Understood the sub-processes of Implement Phase.' At the bottom center, the text 'N.J. Rao & K. Rajanikanth' is displayed in a small, grey font. At the bottom right, the number '2' is displayed in a small, grey font.




A presentation slide with a white background. The title 'M2 U12: Outcomes' is written in a large, bold, red font at the top left. Below it, a single bullet point in black text reads 'Understand the design and use of Exit Surveys.' At the bottom center, the text 'N.J. Rao & K. Rajanikanth' is displayed in a small, grey font. At the bottom right, the number '3' is displayed in a small, grey font.

In the last unit, we understood the sub processes of implement phase. In this unit, we look at the design and use of Exit Surveys. So, the outcome for this unit is understand the design and use of Exit Surveys.

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## Exit Surveys


- Exit surveys are administered at the end of an academic activity to get the subjective perceptions of students regarding the implementation of that academic activity.
- Exit surveys can be administered for:
  - Core Courses
  - Laboratory Courses/ Laboratory Components of Integrated Courses
  - Elective Courses
  - Mini Projects / Major Project



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## Exit Surveys (2)

- Exit surveys provide valuable feedback to the instructor.
- Such a feedback is quite helpful in improving the quality of learning (Closing the quality loop).
- Academic Management System (AMS) or Learning Management System (LMS) may permit creation of summary student feedback report for an academic activity.



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Exit surveys are administered at the end of an academic activity to get the subject to perceptions of students regarding the implementation of that academic activity. The academic activity can be a core course, or a laboratory course, or the laboratory component of an integrated course, or an elective course, it could be a mini project, or the major project. At the end of the academic activity to get the subject to the perceptions of the students, we administer an exit survey.

Exit surveys provide valuable feedback to the instructor, such a feedback is quite helpful in improving the quality of the learning, closing the quality loop. Based on the feedback, instructor can plan the necessary improvements next time the same activity is offered to enhance the quality of learning. Academic Management Systems AMS or Learning


Management System LMS, may permit creation of summary student feedback report for an academic activity.

It could be a built in feature, of such learning management systems. If such a feature is available, designing and administering an exit survey becomes much simpler.

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## Getting Valid Survey Data


- Getting valid survey data is a major challenge with any survey.
- Students may fear that they would be victimized if they give negative feedback.
- Often students assume that their feedback is not really important and that the process is a mere formality!
- Students' perception often is that no instructor really uses this feedback data!



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## Getting Valid Survey Data (2)

- The length of the survey form may also influence the quality of responses from the students!
- Many instructors feel that the data provided by "irregular" students has limited or no validity!



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A key problem with surveys is, getting valid survey data. This is a major challenge with any survey. There are several reasons why getting valid data is a tricky issue. Students may fear that they would be victimize if they give negative feedback. Often, students assume that their feedback is really not important and that the process is a mere formality. Students do not have faith in the reasons for which the survey is administered.

Often, they believe that it is only to comply with some process that the survey is being administered. Their perception is that, no instructor really makes use of this feedback data. Thus, they really do not consider this as any important activity, they tend to give the data which is not really what they are thinking. Sometimes even they may put, random pics in the survey forms.

The consequence of such indifference from the students is that, the data that we get does not truly reflect the perception of this students.

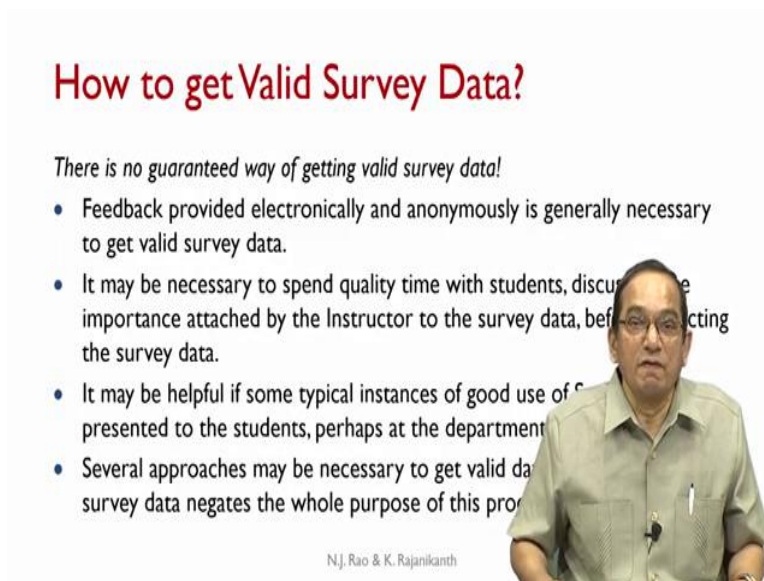
The length of the survey form may also, influence the quality of the response from the students. Initially students may respond enthusiastically, but as they move towards the later part of the survey form, they may become apathetic. If the survey form is too long, it may not be able to hold the attention of the students all the way. On the other hand, if the survey form is too brief, we may not be able to get enough data to make really good use of the survey. Then what is the best size for the survey form?

If it is too long, students may lose interest. If it is too short, we may not get reliable data and valuable data. So, what is the best size? There is no unique, answer institution have to experiment with survey forms of different lengths and arrive at a number which works best in their specific context. There are institutes which are using the exit survey forms with just about 10 questions, there are also institutes which are using exit survey forms with as many as 40 questions.

An institute has to see what works best for specific context. Another issue with the survey is that many instructors feel that the data provided by irregular, within quotes irregular students has limited or no validity. So, they would like to restrict the participation in the survey to only students who have certain minimum attendance or certain minimum performance in the assessments.

Now whether, one should allow all the students to provide feedback or whether one should have some kind of filtering, is a decision that the institute has to take.

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**How to get Valid Survey Data?**

*There is no guaranteed way of getting valid survey data!*

- Feedback provided electronically and anonymously is generally necessary to get valid survey data.
- It may be necessary to spend quality time with students, discussing the importance attached by the Instructor to the survey data, before collecting the survey data.
- It may be helpful if some typical instances of good use of survey data are presented to the students, perhaps at the department level.
- Several approaches may be necessary to get valid data. If a single approach to survey data negates the whole purpose of this process, it is not a good approach.

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Unfortunately, there is no guaranteed way of getting valid survey data. But certain techniques are proved to be useful in getting more reliable data. We may have to use, a combination of these approaches to get more reliable data. Some of the aspects which do affect the quality of the data that we get or discussed now. There is no guarantee that each method by itself, would be sufficient. Again, the institute has to experiment and see what works best for its specific context.

One important aspect about providing the data would be that, the feedback provided electronically and anonymously is generally necessary to get valid survey data. Students tend to be more honest in giving the feedback, if they know that the data is being collected electronically and their identity is never revealed. Thus, one of the important pre requisites for getting good quality survey data is to have this system where by the feedback is provided electronically and anonymously.

It may also be necessary to spend some quality time with students, discussing the importance attached by the instructor to the survey data, before collecting the survey data. Instructor can spend some time with students, explain to the students that the survey data is extremely important for him or her, and assure the students that he or she will make use of this data to enhance to the quality of the learning, next time the courses offered.

It may be helpful, if some typical instances of good use of survey data are presented to the students, perhaps at the department level. 3 or 4 anecdotal incidents, where the survey data was used to enhance the quality of learning can be presented to the students. This may increase the confidants that the students can have in the usefulness of the data, that the

provide. Several approaches may be necessary, to get valid data. As poor quality survey data, negates the whole purpose of this process.

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## Student Feedback

- Most institutions design one Student Feedback Form for all courses of all branches of engineering and have a standard mechanism of collecting this feedback.
- Often, such a feedback is used only for evaluating the instructor and thus is not useful for getting data regarding academic activities.
- It is better to design separate Exit Survey forms for specific academic activities including Core courses, Laboratory courses, Electives, Mini projects and Major project.
- Such forms may be integrated with institute-wide common form if required!

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Most institutions do have some kind of a feedback system. They use a student feedback form for all courses, of all branches of engineering and have a standard mechanism of administering it and collecting the feedback data. Such a feedback form, is typically used for evaluating the instructor. It is part of the faculty performance appraisal system. So, the main purpose of such a feedback system is to get data regarding the faculty performance and thus this may not be very useful, for getting data regarding the academic activities.

It is better, to design a separate exit survey form for specific academic activity. So, it is good to design specific survey form for core courses, a survey form for laboratory courses, a separate survey form for electives, and so on. If it is absolutely necessary from the institutes perspective, such a separate survey form can be integrated with the institute void common form. It is the choice of the institute, whether it wants to adopt this policy of integrating the institute void form with the specific survey forms. If it is feasible, faculty can administer a separate survey form.

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## Exit Surveys for Core Courses

- As noted in the earlier unit, Mid-Course Surveys help the Instructor to dynamically adapt Instruction during the course delivery.
- Course Exit Survey is summative in nature and is useful for improving the implementation when the course is offered again!
- Survey data may be used in computing Indirect Attainment of COs, though NBA does not explicitly require this approach.
- Several forms and approaches for Course Exit Survey are available in the literature.
- What is presented here is just a sample framework!



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Now, let us look at the exit surveys for core courses. As noted in the earlier unit, mid course surveys help the instructor to dynamically adapt instruction, during the course delivery. Typically, 1 or 2 mid course surveys are administered by the teacher. And they, data collected is used to modify the instructions, as necessary. Course exit survey on the other hand, is summative in nature, is administered at the very end of the course and is useful for improving the implementation, when the course is offered again.

Survey data may be used in computing indirect attainment of COs, though NBA does not explicitly require this approach. The data collected from the exit course surveys, can be used to compute the CO attainment, indirectly. Several forms and approaches for course exit survey, are available in the literature. What is presented here is just a sample frame work, individual departments can adapt, they do not specific feedback form based on their specific needs.

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## Course Exit Survey Form

- Questions generally cover:
  - Course Management
  - Learning Environment
  - COs
  - Instructor characteristics ... ..
- Typically questions are answered by the students on a scale of 1 to 5 – most negative to most positive response.




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## Course Exit Survey Form (2)

- The Form can start with an appeal to the student:

“Your considered feedback on the course will be of great value to the concerned instructor and to the department in enhancing the quality of learning.  
Thank you for your quality time.”
- Initial questions can elicit the overall view:
  1. Rate the Course in General
  2. Rate the Course Content
  3. Rate the Instructor with reference to this course



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The general, topics that are covered in a course exit survey form would be about 4. Course management, learning environment, course outcomes, instructor characteristics. If the instructor characteristics are being collected in a separate survey, if the instructor wishes she can delete this aspect from the course exit survey form. But it is typical, to include the suspect also in a course exit survey form.

Typical questions are answered by the students on a scale of 1 to 5, 1 being the most negative and 5 being the most positive, but other scales are possible.

The form, can start with an appeal to the student. You are considered feedback on the course, will be of great value to the consent instructor and to the department in enhancing the quality of learning. Thank you for your quality time. It looks like a very simple appeal, but there is



considerable empirical evidence to show that, such an appeal at the beginning of the exit survey form, thus have psychological impact on the students. Often, it leads to the students canceling the survey more seriously.

So, it is worthwhile to include such an appeal at the start of the survey form. Initial questions can elicit the overall view, rate the course in general on a scale of 1 to 5 for example, rate the course content, rate the instructor with reference to this particular course.

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**Course Management**

- Course Organization
- Internal Tests – Coverage of COs
- Internal Tests – Time Allowed
- Quality of Quizzes
- Usefulness of the assignments in promoting learning
- Workload
- ... ..

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Then, there can be several questions related to the course management. How was the course organization, how were the internal test conducted, did the internal test address the relevant COs appropriately, were all the COs covered in the internal test, what was the time allocated for the internal test, vis-a-vis the questions that were you asked in the internal test, was the time provided for answering the questions adequate, what was the quality of the quizzes administered, and what was the usefulness of assignments in promoting learning.

Here again, many students seem to feel that the assignments are not really contributing towards any learning. They feel that, most of the time the assignment activity is proving to be a cut paste kind of activity and the instructors are not really evaluating the assignments. So, there can be questions about the usefulness of the assignments, in promoting learning. What was the overall workload during the semester, from this course we vis-a-vis rest of the courses in that semester. There can be other questions depending upon the specific requirements and context.

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## Learning Environment

- Positive interaction between students and Instructor existed.
- Students were always allowed to interrupt the Instructor to seek clarifications.
- Classroom discussions were encouraged and well moderated.
- Required learning resources were easily available.
- .....



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Learning environment, we can have several questions regarding this important aspect. There existed, positive interaction between students and instructors. Students were always allowed to interrupt the instructor, to seek clarification. Classroom discussions were encouraged and they were well moderated. Sometimes, the classroom discussions can become real disruptors and the discussion can move in tangential directions, disrupting the normal learning activity.

It requires careful moderation from the instructor, to ensure that the discussions remain focused. So was that happening, that can be a question, that can be asked in the survey. Required learning resources were easily available. So, there can be several questions regarding the learning environment.

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## Course Outcomes

- Course Outcomes were discussed upfront.
- Course Outcomes were clear.
- How confident are you regarding the competencies expected from you?
- Instructional activities helped in the attainment of the COs.
- Time devoted to each CO was quite adequate.
- Pace of coverage was comfortable throughout.
- Assessments were relevant to the stated COs.
- .....



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## Course Outcomes (2)

- Examples relevant to the COs were worked out well and also they were useful for Examinations
  - Rate each CO with respect to the comfort level you had in mastering it. (1 - Least Comfort to 5 - Highly Comfortable)
- CO1 :  
CO2:  
...  
CO8:



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Then course outcomes, we can have several questions regarding this as this is an extremely important aspect. Course outcomes were discuss upfront, was that happening, or the course outcomes were not at all provided, or they were provided but just in a written form and they were not discussed in the classroom. So, one can have questions, regarding the extinct to which the instructor made efforts to make the course outcomes known to the learners.

Course outcomes were clear, this is the regarding the way the COs are formulated. How confident are you regarding the competencies expected from you. So, what is the level of attainment of COs from the perspective of the student's perceptions. Instructional activities helped in the attainment of the Cos. As we noted in an earlier unit, there must be good alignment between the instruction and the course outcomes, in order to promote good quality learning.

So was that happening, was there good alignment between instructions and the COs. So, we can ask a question, did the instructional activities helped in the attainment of the Cos. Time devoted to each COs was quite adequate, this is also related to the next question which is regarding the pace of coverage. Pace of coverage was comfortable throughout, it may happen that instructors spends on duly long time on the initial Cos, the initial part of the course and thus, find herself faced with the problem of covering enormous amount of material in a sharp time towards the end of the semester.

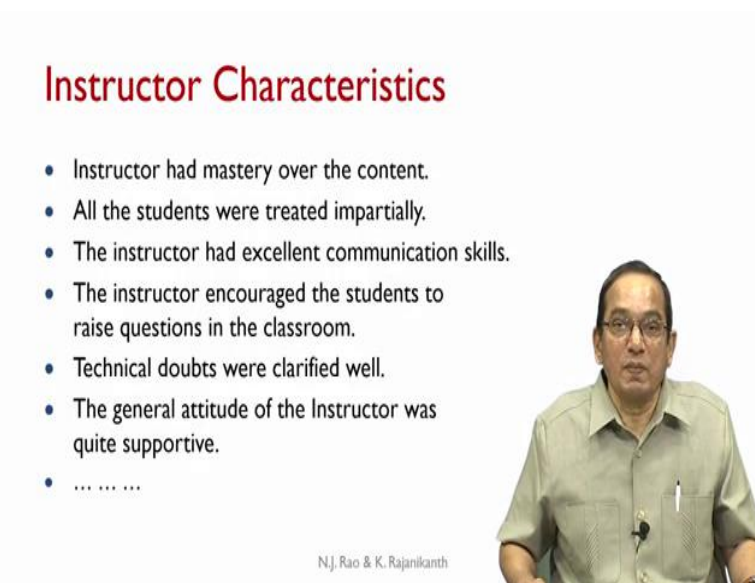
Thus, the pace can be quite uneven, relatively slow in the beginning and super fast towards the end. This may result, in the earlier COs getting covered exhaustively, while not much attention is paid to the later COs. So, there can be questions regarding the coverage of the COs, as well as the pace of coverage.

Assessments were relative to the stated COs. Again, as we noted earlier, alignment between assessment and COs is also essential for quality learning. In fact, alignment among instructions, assessments and COs is essential for quality learning. We have asked a question, regarding the alignment between instruction and outcomes, we can ask the question regarding the alignment between assessment and the COs.

Examples relevant to the COs were worked out well and also, they were useful for examinations, this can be another question. Then we can ask questions with reference to specific COs, rate each CO with respect to the comfort level you had in mastering it. So, 1 is the least comfort and 5 is the maximum comfort, highly comfortable. So, we can ask the rating for each of the COs. And if, there is a consistently low rating for a particular CO, that would imply that most of the students said difficulty with respect to that particular CO.

This would be an indication to the instructor, that additional instructional activities may be required regarding that CO when the course is offered the next semester or next year.

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**Instructor Characteristics**

- Instructor had mastery over the content.
- All the students were treated impartially.
- The instructor had excellent communication skills.
- The instructor encouraged the students to raise questions in the classroom.
- Technical doubts were clarified well.
- The general attitude of the Instructor was quite supportive.
- ... ..

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The slide features a video inset of a man with glasses and a light-colored shirt, likely the instructor mentioned in the text, speaking to the camera.

Then we can have questions on instructor characteristics also, as I mention this is optional. If this is covered in a different form of survey, the course exit survey need not include this aspect. Instructor had mastery or the content, all the students were treated in partially, this is regarding the attitude of the instructor, the instructor has excellent communication skills, the instructor encouraged the students to raise questions in the class room, technical doubt for clarified well, the general attitude of the instructor was quite supportive.

We can have more questions, the classes started on time, the discipline in the class room was well, all these kind of questions regarding the instructor characteristics can be included in the exit survey form.

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## Questions Related to Specific COs

- Questions related to specific COs are helpful in:
  - Computing indirect attainment of COs.
  - Identifying the “sticky COs” which need greater attention next time.



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## Questions Related to Specific COs (2)

- Assume that CO3 of a course on Algorithms is related to Divide and Conquer approach.
- Some questions specific to CO3 that the Instructor can ask in the Course Exit Survey:
  1. How confident do you feel that you can determine if Divide and Conquer technique is applicable to a given specific problem.  
Not Confident (0) to Highly Confident (5)
  2. Do you feel comfortable in deriving the time complexity of a given algorithm that is based on the Divide and Conquer approach?  
Not at all comfortable (0) to Highly Comfortable



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## Questions Related to Specific COs (3)

3. How confident you are that you can explain Merge Sort algorithm?  
No Confidence (0) to Very high Confidence (5)
  4. How confident do you feel in developing a divide and conquer algorithm for a new problem  
Not at all Confident (0) to Very Confident (5)
- Responses to such questions will provide valuable feedback to the Instructor.

Then we can have some questions related to specific COs. These would be helpful in 2 ways, one is this data would help us in computing the indirect attainment of COs. And the second usefulness is that, it helps as in identifying sticky COs, the COs which need greater attention next time the course is offered.

So, we can have some questions regarding individual COs. As an example, assume that CO3 of a course on algorithm is related to divide and conquer approach. Some question specific to CO3, that the instructor can ask in the course agreed survey would be as follows. How confident do you feel that you can determine if divide and conquer technique is applicable to a given specific problem, not at all confident 0 to highly confident 5.

Do you feel comfortable in deriving the time complexity of a given algorithm that is based on the divide and conquer approach, again on a scale 0 to 5 not at all comfortable to highly comfortable.

How confident you are that you can explain merge sort algorithm, not confident 0 to highly confident 5. How confident do you feel in developing a divide and conquer algorithm for a new problem, not at all confidence 0 to very confidence 5. Notice that these are all perceptions of students, the actual abilities of these students are being assist through summative instruments including quizzes, test and assignments.

The objective of this survey is to get the perception of the students, response to such question will provide valuable feedback to the instructor.


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## CO Attainment - Indirect Method

- Computing the CO Attainment using Indirect method and combining it with CO Attainment computed using Direct method was discussed in earlier module.
- Course Exit Survey aids in computing the Indirect CO Attainment.
- Average perception of students is used as the Indirect Attainment value.

Example:

- We asked 4 questions related CO3 and 65 students responded.
- Let us assume that, for Question 1: 6 rated 1; 54 rated 4; and 5 rated 5. So, the average is: 3.8



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## CO Attainment - Indirect Method (2)

- Similarly, assume the average ratings for Questions 2, 3, and 4 are 4.2, 3.9, and 2.6 respectively.
- The grand average is now about 3.6
- The maximum possible value is 5
- Thus, we take the attainment of CO3 as  $3.6/5 = 72\%$
- We can do similar computations for the other COs.

This is one fairly simple method for computing the Indirect attainment of COs.

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Now, this data can be used for computing this CO attainment indirectly. That is a fairly straight forward approach which is possible. There are several methods possible, we will discuss one simple approach here. We asked 4 questions related to CO3, and assume that 65 students responded. Let us assume, that for question 1 six students rated it at level of 1, 54 students gave it a value of 4, and 5 students gave it a value of 5.

So, the average is 6 into 1 plus 54 into 4 plus 5 into 5 the whole sum divided by 65. The average becomes 3.8. So, on the average for question 1, the response of the students was 3.8 out of the best possible value of 5.

Similarly, assume that the average rating for questions 2, 3 and 4 are 4.2, 3.9, 2.6 respectively, these are just hypothetical numbers. So, the grant average now becomes, about 3.6. The maximum possible value, the best possible value is 5.

Thus, we take the attainment of CO3 as, 3.6 divided by 5 which is about 72 percent. So, we assume that, the attainment of CO3 from indirect means is 72 percent. We can do similar competition for the other COs. This is one fairly simple method for computing the indirect attainment of CO. But this requires, that there be questions related to specific COs. So, the course exits form, has to be design based on the course itself.

It cannot be one common form suitable for all the courses. For each course, a specific course exits survey form needs to be design. And there should be provision for administering, such an exit survey form. Then we can get data, which will help us in computing the attainment of the CO indirectly. And as we mentioned earlier, this data is also useful in identifying particularly difficult COs.

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**Exercise**

- Design a Course Exit Survey form for a core course.

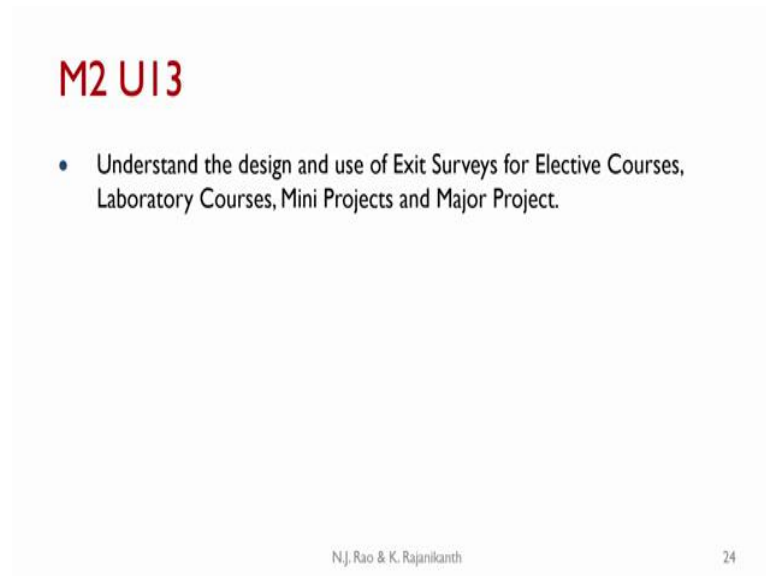
Thank you for sharing the results of the exercise at [nate.iiscta@gmail.com](mailto:nate.iiscta@gmail.com)

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Design a course exit survey form for a core course, a core course of your choice. Thank you, for sharing the results of the exercise at nate.iiscta at gmail dot com.



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In the next unit, we will look at the design and use of exit surveys for elective courses, laboratory courses, mini projects and major project. The common features of all exit surveys, have already been discussed in this unit. And many of the questions that we asked in the exit survey for the core courses, do hold for the exit surveys with respect to other academic activities.

However, there can be certain questions which are unique to each kind of an academic activity. So, in the next unit we will discuss the exit surveys for 4 kinds of activities, elective courses, laboratory courses, mini projects, and major project. Thank you, we will meet in the next unit. Thank you.