

# Guidelines for evaluating students' learning

Dr. K.R. Chowdhary, Professor &  
Campus Director, JIETCOE

JIET College of Engineering  
*Email: [kr.chowdhary@jietjodhpur.ac.in](mailto:kr.chowdhary@jietjodhpur.ac.in)*  
*Web-Page: <http://www.krchowdhary.com>*

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## Background:

- The evaluation of learning has a strong influence on studying and learning. How students believe they will be evaluated steers what and how students study - not what the instructors tell them is important (evaluation practice is a 'hidden curriculum').
- Two **rival objectives** for the evaluation: 1. developmental 2. evaluating one. The developmental evaluation is geared towards promoting learning. It tries to find out how well students know the material they have studied, and to bring to light any **shortcomings** and **gaps** in the students' knowledge.
- The evaluating assessment concentrates on evaluating the final result of learning, the **performance of a course**.

## **Objectives:**

- Regardless of how evaluation of learning is carried out, it should focus on the main themes of the learning-objective matrices, since they have been set as the primary conceptual entities that should be learned during a course.
- The lectures, exercises, projects, learning material, etc., must support the attaining of the learning objectives
- The practice of evaluating assessment can be considered well justified when it comes to separate exams

# Recommendations for Evaluation of learning during courses

- The first assignment is given to the students immediately at the beginning of the course. The assignment is compulsory.
- The objective is for students to receive feedback weekly during a course. Some examples of suitable evaluation are:
  - ① feedback methods.
  - ② Course exams
  - ③ Grading assignments

# An assessment & evaluation of CS education



- Adults and children learn by examples and experiences. A teacher's job is not to pour information about a subject into students' head so the information can be lost through their ears, but rather facilitates the students' ability to learn and think on their own in the future, when they are presented with problems and challenges within a given subject.
- The overall aim of education must be to nurture the power of thought.
- Computers are the best example of a subject that presents more problems and challenges when nobody is around to help.
- Therefore, computer related subjects are taught best through hands-on experience that exposes students to some likely problems before they become stranded on their own.

# An assessment & evaluation of CS education...

- The way to approach the diversity in learners is with variety of teaching.
- Active learning, collaborative learning, inquiry based learning, and discovery learning pedagogies lend themselves to research intensive and experimental disciplines, such as computer science.
- Recommended science and engineering reforms include a high priority on undergraduate education and research, making faculty aware of new teaching methods
- Institutions currently teach disciplines as they have been taught for years, without incorporating new scientific findings or new methods for the way scientific research is conducted today.
- The above style of teaching (old one) does not help prepare students for life outside of college, and instead, it hinders students' ambitions and competency.

# New approach to cs courses to develop reasoning

- Following new additions can be made:
- One addition to the computer science course is the addition of hands-on experience through a lab experiment conducted each week in the classroom.
- Another addition to the course is the weekly group discussions. The group/class discussion uses the whole class to solve a problem. The problems proposed in this class are unique because they are tailored to meet the needs of students' scientific backgrounds. The CS class is taught using an interdisciplinary approach combining math, CS, and other sciences revealing the interdisciplinary nature of computer science.
- The last addition to the programming class is the application of programming concepts to real world problems.

-  Jennifer R. Parham, “An assessment and evaluation of computer science education”, JCSC(Journal of Computer Science in Colleges), 19, 2 (December 2003).
-  <https://www.cs.helsinki.fi/en/administration/evaluation-learning>.