GURUSETU

VIDEO SUMMARY

Research-Driven Teaching

Resource person: Mr. Prakash Hegade | Assistant Professor, School of Computer Science and Engineering, KLE Technological University; researcher in computer science, artificial intelligence, semantics, and model thinking.
Research-Driven Teaching | Research Design, Methodology, and Presentation | research

Use inquiry to design the course and improve it

Mr. Prakash Hegade starts with Vygotsky's zone of proximal development: teaching should connect what students already know with something new that they can reach. Before class, give students a problem and use a short form to find out what they understand. Then build a case that bridges that starting point to the target concept. An LLM may help draft the case. The teacher sets the learning goal, provides the learner evidence and checks the result.

Build a research-driven syllabus around foundational principles and groups of essential concepts. Use a textbook's contents page and another university's syllabus as references, then adapt the structure to the course. Add current papers, industry cases and applications, balancing classics and contemporaries. A small special-topics unit can change each year. An industry colleague might help shape a unit or teach an applied part of it. A portfolio or a real product can suit work that changes with the field and provide authentic assessment.

Undergraduate research often begins with how a problem is framed. “Build an email system” points students towards a known solution. “Build a communication system” leaves room to define the problem, compare options and combine several disciplines. These open problems still need sensible boundaries for the course. Their value is that students must find new information and make design choices. Some ideas may also have social or entrepreneurial use.

Teaching itself can also be studied. Choose one classroom change and one focused question. Link it to a measurable learning outcome and name the construct you want to study, such as transfer, self-direction, application, critical thinking or analysis. Make the activity and rubric measure that construct. After the intervention, combine focused student interviews with a carefully written rating-scale survey. Look for agreement across the evidence and for saturation in the interviews, then compare the findings with the original question. Use the result to improve the next course offering, and report the method clearly enough for others to examine or reproduce it.