Flipped Classroom

with Synchronous

Problem Solving

TEXAS A&M UNIVERSITY
Center for Teaching Excellence

WHAT IS THIS METHOD?

Dr. Natarajan Gautam (Professor, Industrial Engineering) enriched the student learning experience by utilizing a **Flipped Classroom** environment. This type of engagement involved students completing readings or watching videos at home in preparation for in class learning activities. Dr. Gautam introduced **Synchronous Problem Solving**, which allowed group collaboration on solutions to increase engagement and understanding.

WHY USE THIS METHOD?

Readings, video modules, and practice problems, created for utilization outside of class, can be **referenced at any time** and **reused**. These learning resources presented **concepts in multiple ways**: voice recording and board writing, typed material for reading, and numerous examples students could try. When the material is well organized on Canvas, videos focus on a single topic, and material is posting is timely and consistently, **student learning is enhanced**.

Before Class

Students would watch video modules that were 5-15 minutes long totaling around 75 minutes each week. Notes for students to read and practice problems for students to solve were also created.

During Class

During class time, students would then take a quiz, and the instructor would go over practice problems and further explain concepts as needed.

Dr. Gautam also made time for lots of group work students could do to further their understanding.

After Class

Students have time to go over the material, solve problems individually, readdress videos and readings, and essentially could get what they got in the classroom but at their own pace.