

# THE FACULTY CATALYST

## WELCOME TO THE FACULTY CATALYST!

Welcome to the first issue of The Faculty Catalyst, a biannual resource designed to support and empower you in your teaching and mentoring journey. Our goal is to provide you with innovative strategies and practical tools to enhance student engagement and success, offering insights you can apply directly in the classroom or lab.

In this inaugural issue, we focus on Active Learning—a dynamic teaching approach that turns students into active participants. By fostering interaction, collaboration, and critical thinking, you can create a more enriching learning environment.

We will also explore the role of Generative AI in academia, especially its impact on student coursework assessments. As AI tools become more integrated, understanding GSBS's policy on AI use and how to effectively evaluate student performance in this new landscape is essential. Let's dive in!

## WHAT IS ACTIVE LEARNING?



Active learning encompasses teaching methods that encourage students to actively engage with the material, rather than passively absorbing information. Research has consistently shown that students retain more information, develop deeper understanding, and perform better academically when they engage in active learning. By incorporating activities such as discussions, problem-solving, group work, and hands-on projects, you create a dynamic classroom environment that fosters critical thinking, collaboration, and deeper, more meaningful learning experiences that extend beyond the classroom setting.

## UPCOMING FACULTY DEVELOPMENT WORKSHOPS!



### 1. Effective PowerPoint Presentations

**Feb. 27 | 1-2 PM | BSRB S3.8371 (Large Classroom)**

*Learn strategies to design engaging, visually compelling slides that effectively convey information.*

### 2. Writing Strong Recommendation Letters

**March 25 | 12:45-1:45 PM | BSRB S3.8371 (Large Classroom)**

*Craft impactful letters that highlight candidates' strengths and key accomplishments.*

\* These sessions will be led by Dr. Peggy Hsieh (Peggy.H.Huang@uth.tmc.edu)

## Why active learning matters?



Active learning transforms the classroom into a space where students are not just present, but mentally engaged. Its benefits go beyond surface-level participation and contribute significantly to student success:

- **Enhances Retention:** Students are more likely to retain information when they engage with it directly through activities.
- **Fosters Critical Thinking:** Active learning encourages students to think critically, solve problems, and apply concepts to real-world scenarios.
- **Increases Motivation:** Engaged students are more motivated to learn, leading to higher satisfaction and improved outcomes.
- **Encourages Collaboration:** Group activities and discussions help students develop communication and teamwork skills, both essential for their future careers.

## Simple ways to incorporate active learning



Active learning doesn't have to be overwhelming or time-consuming. Here are a few easy-to-implement strategies that can transform your classroom:

### 1. Think-Pair-Share

This simple, yet powerful technique encourages every student to engage.

Here's how it works:

- **Think:** Pose a question or problem to the class and give students time to reflect individually.
- **Pair:** Ask them to pair up with a classmate to discuss their thoughts.

- **Share:** Invite pairs to share their insights with the entire class.

This method encourages participation, especially from students who may be hesitant to speak up in front of a large group. It fosters collaboration and allows students to learn from each other's perspectives.

### 2. Flipped Classroom

In a flipped classroom, students are introduced to new content outside of class (e.g., through readings, videos, or podcasts) and then use class time for deeper engagement with the material through activities like discussions, case studies, or group work. This approach frees up class time for active learning and helps students come to class better prepared.

### 3. Problem-Based Learning (PBL)

PBL challenges students to work in teams to solve complex, real-world problems. Provide a scenario relevant to your subject area, and ask students to identify the problem, gather information, and propose solutions. This method simulates real-world challenges and prepares students for professional problem-solving.

### 4. Interactive Polling

Use tools like Poll Everywhere or Kahoot to ask real-time questions during lectures. Students can respond using their devices, and the results can be displayed live. This is an excellent way to gauge understanding, get instant feedback, and encourage participation.

### 5. Case-Based Learning

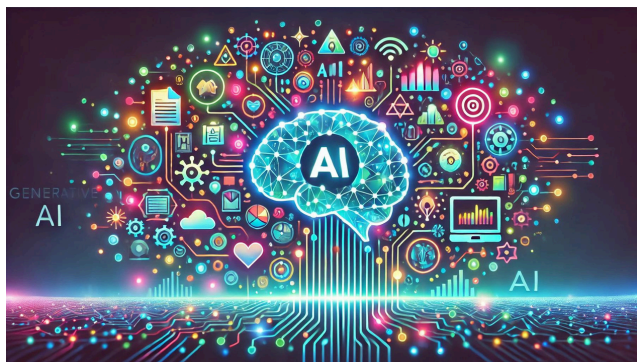
Presenting students with real-life case studies challenges them to apply theoretical knowledge to practical situations. Ask them to analyze the case, identify problems, and propose solutions. This method bridges the gap between theory and practice, making learning more relevant and engaging.

**Final thoughts:  
make active  
learning work for  
you**



Remember, active learning is not about overhauling your entire teaching strategy overnight. Start small by introducing one or two active learning techniques into your class, and gradually build from there. Your students will benefit from the more engaging, dynamic environment, and you'll likely find teaching more rewarding as well.

## WHAT IS GENERATIVE AI?



Generative AI refers to tools like ChatGPT and COPILOT that create content such as text, images, and code. These tools are popular with students for tasks like writing and idea generation. By analyzing large datasets, they mimic human creativity to produce original-looking responses.

However, Generative AI often produces factually incorrect content and provide inaccurate citations, raising concerns about academic integrity. It currently lacks the ability to critically evaluate material, which can result in shallow or misleading outputs.

Educators must establish clear guidelines for responsible AI use in research and coursework, ensuring it supports, rather than replaces, meaningful student engagement.

**Institutional policies  
on generative AI**



At GSBS, both parent institutions—MD Anderson (ADM1187) and UTHealth Houston (ITPOL-039)—prohibit the use of web-based generative AI platforms like ChatGPT for uploading proprietary or confidential information. This includes primary, unpublished data, protected health information (PHI), and intellectual property (IP). Such data should only be entered into MDACC- or UTHealth Houston-licensed AI programs, where confidentiality is maintained. Anything uploaded onto public AI platforms may become public knowledge and could be accessed by third parties. Always ensure that your use of AI complies with these institutional policies to protect sensitive information.

**GSBS policy on  
generative AI**



GSBS has specific guidelines on using Generative AI in academic work. While AI tools can be useful, students must be aware of their limitations, including the potential for factually incorrect information and improperly sourced citations.

- **Dissertations, Theses, and PhD Candidacy Exams:** These must be composed entirely of the student's writing. AI-generated content, whether paraphrased or verbatim, is prohibited unless clearly quoted and cited. Using AI content without proper citation is considered an ethical violation and could negatively impact evaluations by faculty committees.



**Course Assignments:** The use of AI-based resources in courses is at the discretion of the instructor. Students should seek explicit permission before using these tools, and any AI-generated data or text must be appropriately cited. Instructors are encouraged to state their AI usage policy in their course syllabus.

## Challenges in detecting AI-generated content



Although AI detection software exists, it is not foolproof. We've seen cases where students with distinctive writing styles have been mistakenly flagged, highlighting the limitations of current AI detection tools. Additionally, some AI-generated content is sophisticated enough to evade detection, making it even more challenging to identify. This poses a significant challenge in fairly assessing student work. Furthermore, as Generative AI continues to evolve, so too must educators. This technology will only become more advanced, making it essential for educators to adapt both in how they teach, do research and how they assess student performance.

## How students have been using AI in Homework



Many students have been using Generative AI to assist with homework, often resulting in generic, surface-level responses that lack depth or critical analysis. To address this, course directors should consider designing assessments that minimize AI's usefulness by focusing on complex, higher-order thinking tasks. Incorporating assignments that require original thought, in-depth reasoning, and problem-solving will challenge students to engage more actively with the material, ultimately encouraging more meaningful learning outcomes and reducing reliance on AI-generated responses.

## Ideas for overcoming AI challenges in course assessments



**1. In-Class Assessments:** Shift to more in-class assessments where students complete tasks using only hard resources, such as textbooks, to prevent reliance on AI.

**2. Complex Problem-Solving:** Design assignments that require deep critical thinking, analysis, or multi-step processes that AI tools struggle to replicate accurately.

**3. Oral Exams or Presentations:** Include oral presentations or discussions that require students to explain their thought processes, making it difficult to use AI-generated content.

**4. Real-World Scenarios:** Engage students with projects that involve applying knowledge to real-world problems or case studies, making it harder for AI to produce relevant content.

## QUESTIONS OR COMMENTS?



We hope you found this issue of The Faculty Catalyst helpful in enhancing your teaching and assessment strategies. If you have any questions, comments, or ideas for future topics, please don't hesitate to reach out. We value your feedback and are here to support you in creating the best possible learning experience for your students. Contact us at [gsbs.facultycatalyst@uth.tmc.edu](mailto:gsbs.facultycatalyst@uth.tmc.edu).