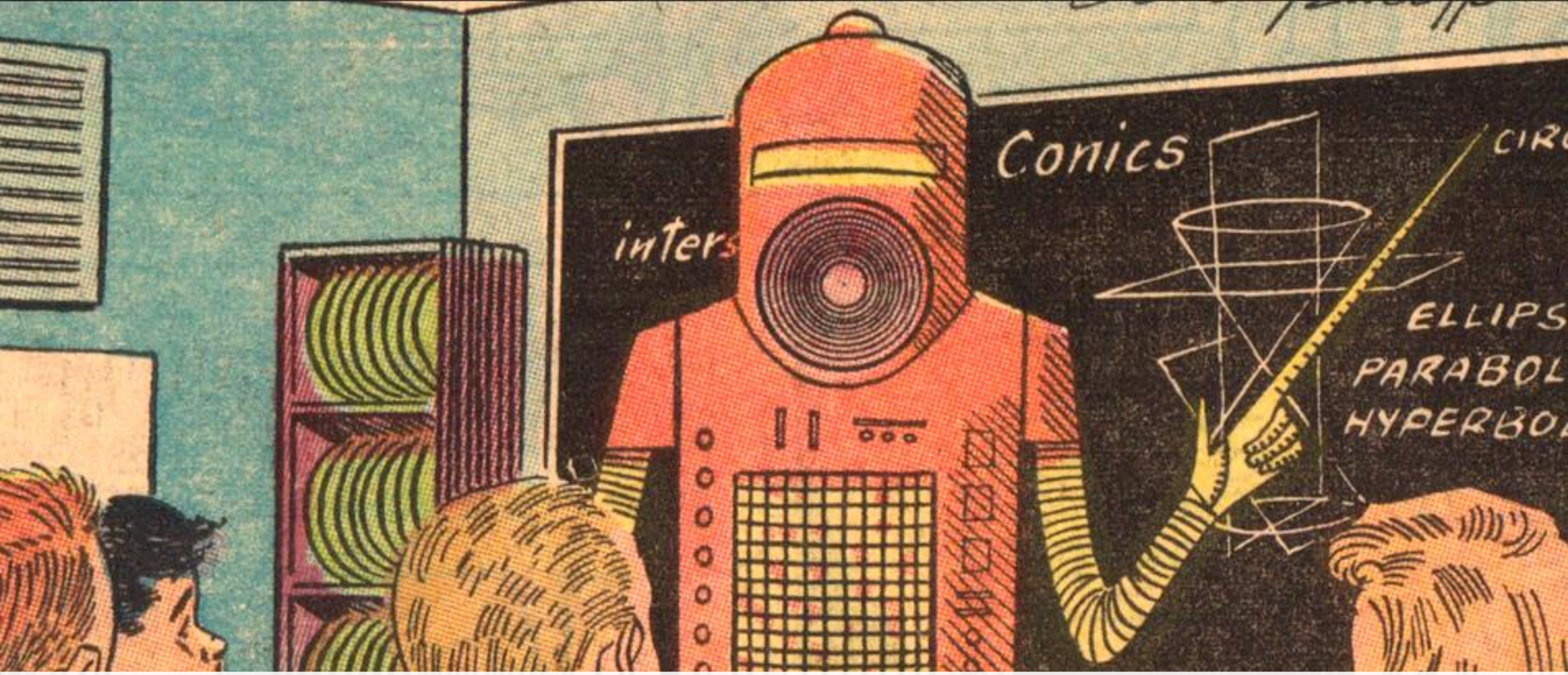


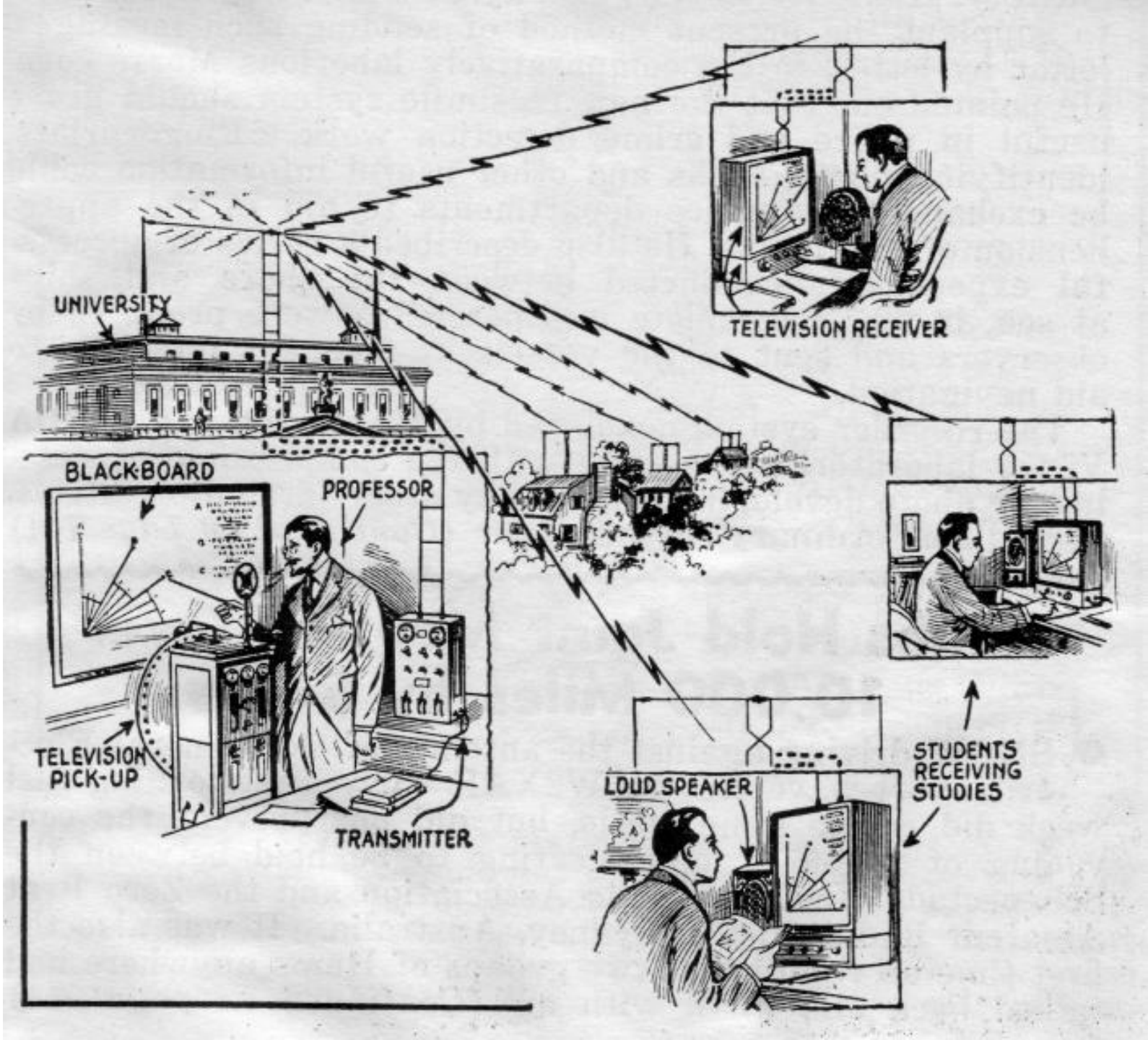
7 Innovative Approaches to Course Design

The Importance of Course Design

- The pandemic-driven switch to remote learning alerted many faculty members to the importance of course design.
  - In an online course, keeping students on track requires clarity and structure.
  - It also demands that instructors think intentionally about how to motivate and engage students, prompt interaction, and assess student learning without the crutch of in-person proctoring.

Reimagining Course Design

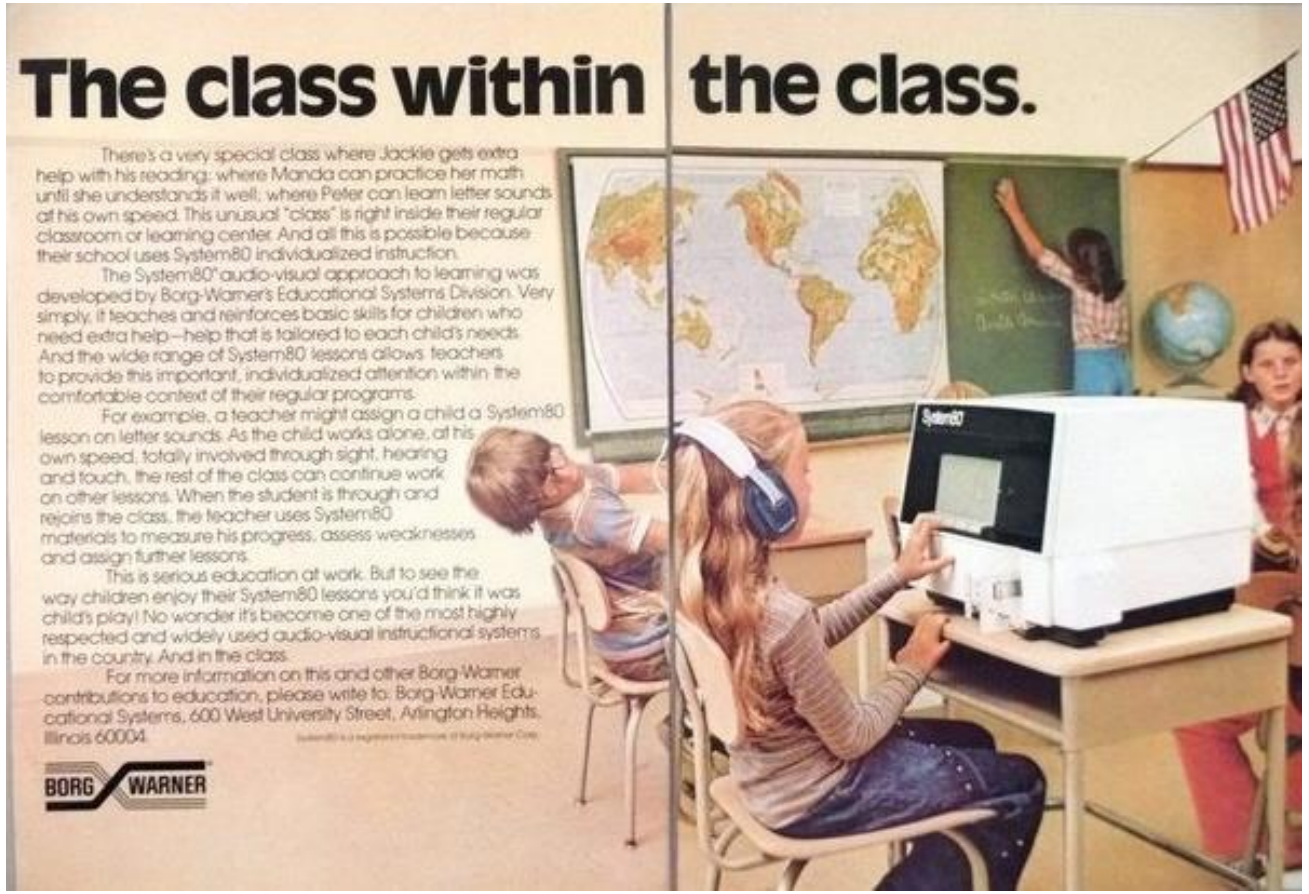
- 3 approaches that dominate course design today:
  - **Standard approach:** Arrange a list of topics.
  - **Backward design:** Specify outcomes then design a sequence of activities to help students attain those outcomes.
  - **Learner-centered:** Begin not with the outcomes but with an analysis of the learners, their needs, characteristics, expectations and prior knowledge, and the constraints on learning.



7 Innovative Approaches

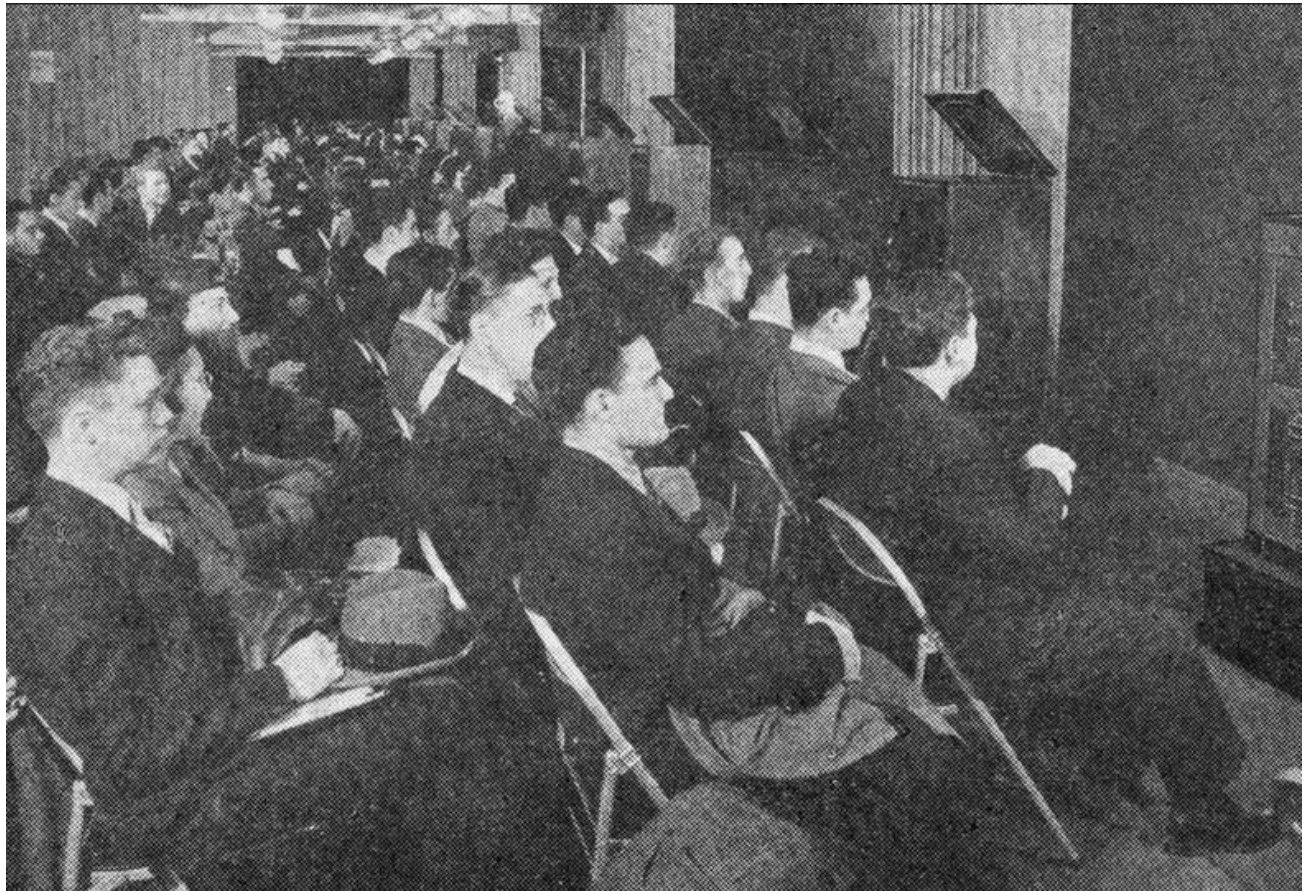
An Inquiry Approach

- Transforms students into investigators, detectives, mythbusters, and problem solvers.
- It gives them the opportunity to investigate enduring mysteries, debunk legends, engage in role-playing exercises and take part in heated political or scholarly debates.
- It teaches them how to ask meaningful questions, solve problems, interpret data and other forms of evidence.



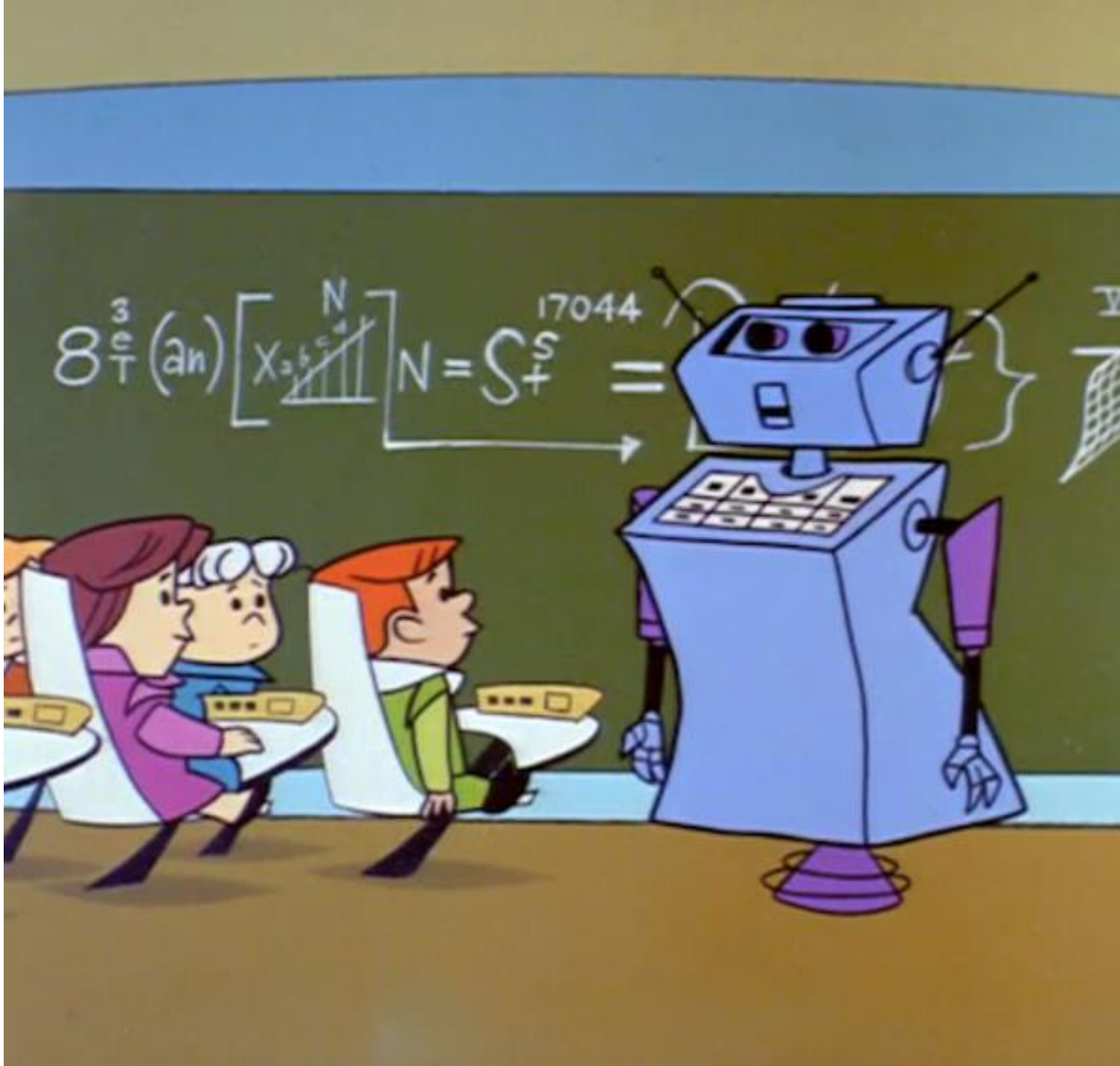
An Inquiry Approach

- Have students:
  - question master narratives
  - interrogate facts that are too often considered unproblematic, and
  - strive to understand multiple perspectives and realities depending on how an individual is positioned or situated.

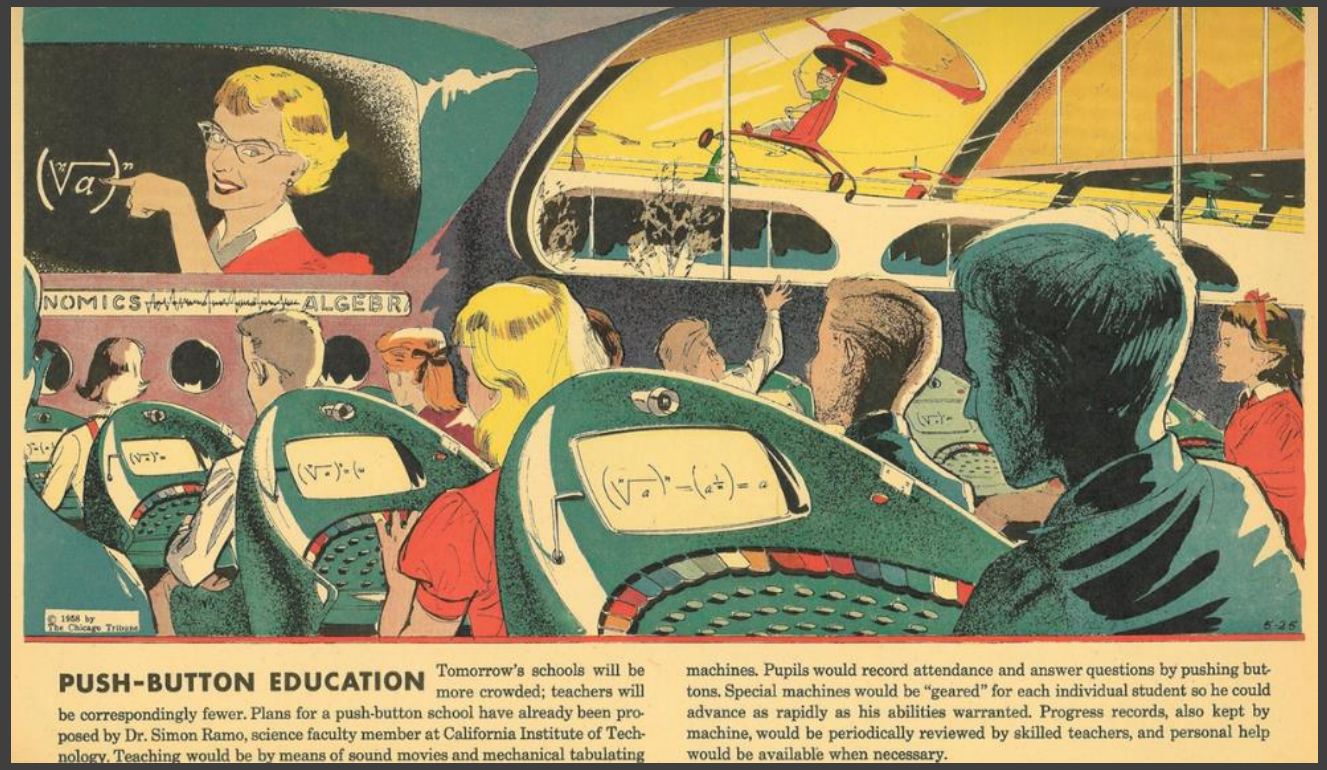


An Inquiry Approach

- Inquiry can, of course, be structured and guided or open, individual or collaborative.
- It can confirm what is already known or be more open-ended and original.
- Regardless, this approach
  - Places students at the center of the learning process
  - It foregrounds research skills and higher-order thinking skills, and
  - It helps students achieve conceptual understanding.



7 Innovative Approaches



PUSH-BUTTON EDUCATION Tomorrow's schools will be more crowded; teachers will be correspondingly fewer. Plans for a push-button school have already been proposed by Dr. Simon Ramo, science faculty member at California Institute of Technology. Teaching would be by means of sound movies and mechanical tabulating machines. Pupils would record attendance and answer questions by pushing buttons. Special machines would be "geared" for each individual student so he could advance as rapidly as his abilities warranted. Progress records, also kept by machine, would be periodically reviewed by skilled teachers, and personal help would be available when necessary.

A Case Study Approach

- This approach organizes a class around a series of
  - Crises
  - Pivotal episodes or incidents
  - Critical junctures
  - Legal cases, and other real-world scenarios.
- Students can study:
  - The decision-making process
  - The societal or professional response to a dilemma
  - Past precedents for current events,
  - Societal and cultural change over time, and
  - Shifts in public concerns or values or in scientific understanding.

A Case Study Approach

- Well-chosen cases can
- Bring a topic to life
- Foster active student involvement in their own learning
- Encourage discussion and debate, and
- Help students develop their critical thinking skills.

By 1965, predicts one authority, half of all U. S. students will make use of

7 Innovative Approaches

A Decoding the Discipline Approach

- This approach introduces students to the methods, skills and interpretive techniques used by scholars in a particular field of study.
  - This approach:
    - Familiarize students with how experts within a discipline collect and analyze data
    - Shows them how a field understands causality
    - Teaches them how to interpret a graph, a text, a document or another piece of evidence; or
    - Understand various social, biological or psychological processes.

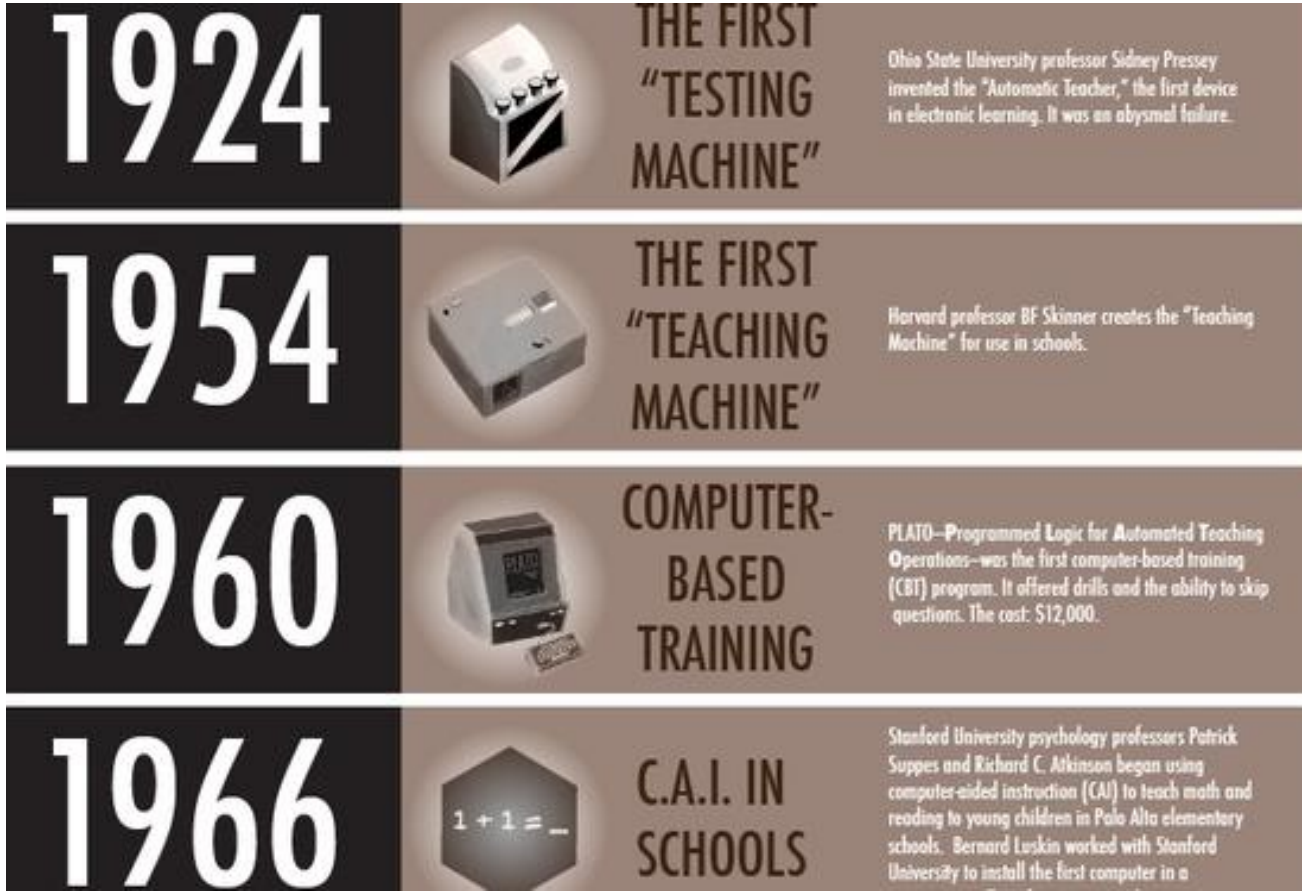
7 Innovative Approaches

An Active Learning, Technology-Enhanced Approach

- Students learn best when learning is active: when they are mentally involved, when they engage in hands-on activities, when they are involved in a process of enquiry, discovery, investigation and interpretation.
- When students are passive, their brain don't do an especially effective job of processing or retaining the information.
  - But real learning involves more than memorization.
  - Students need to reflect on their learning.
  - They need to actually do biology or chemistry or literary criticism or sociology.

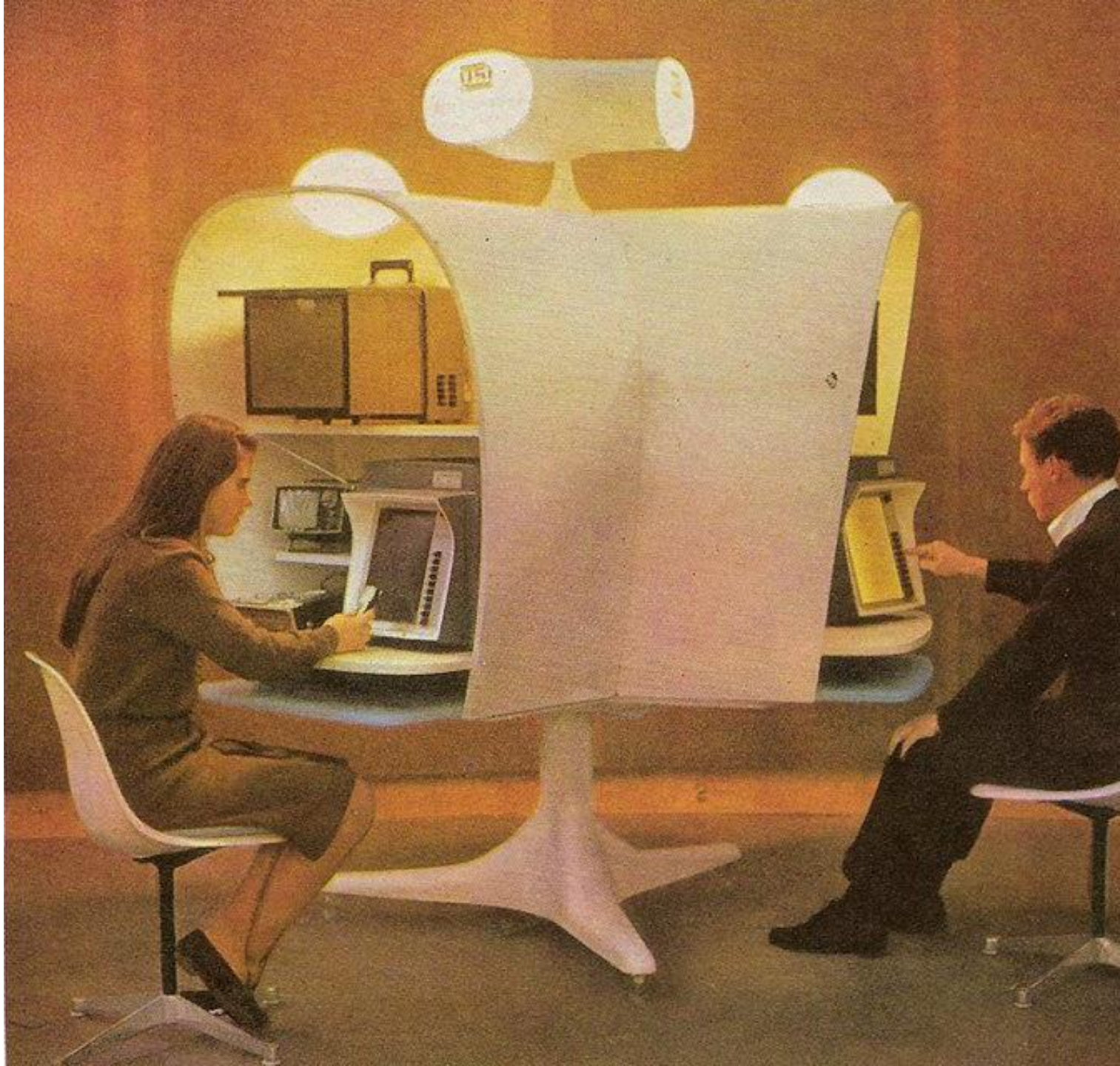
An Active Learning, Technology-Enhanced Approach

- **Annotation**: You might ask your students to explicate and annotate a written text or document, using Hypothes.is or Perusall, or a video clips using VideoAnt.
- **Citation**: Show your students how to create a citation from a URL with Mybib citation creator or manage collections of citations with Zotero.
- **Collaboration**: Students can collectively create documents and presentations with Google Docs, Slides and Sheets.



An Active Learning, Technology-Enhanced Approach

- **Concept and network mapping**: Students can map relationships among concepts or networks or causal factors with Coggle, Cliovis, Lucidchart, Popplet and Sketchboard.
- **Access Content Libraries:** Students can access texts and royalty-free images.
- **Data visualization**: Students might use Google MyMaps to create and annotate maps. Wordle makes it easy to create word clouds, while Google Ngrams allows students to analyze changes in word frequency in published books. Students can create visualizations of census data with http://www.census.gov/dataviz/.



An Active Learning, Technology-Enhanced Approach

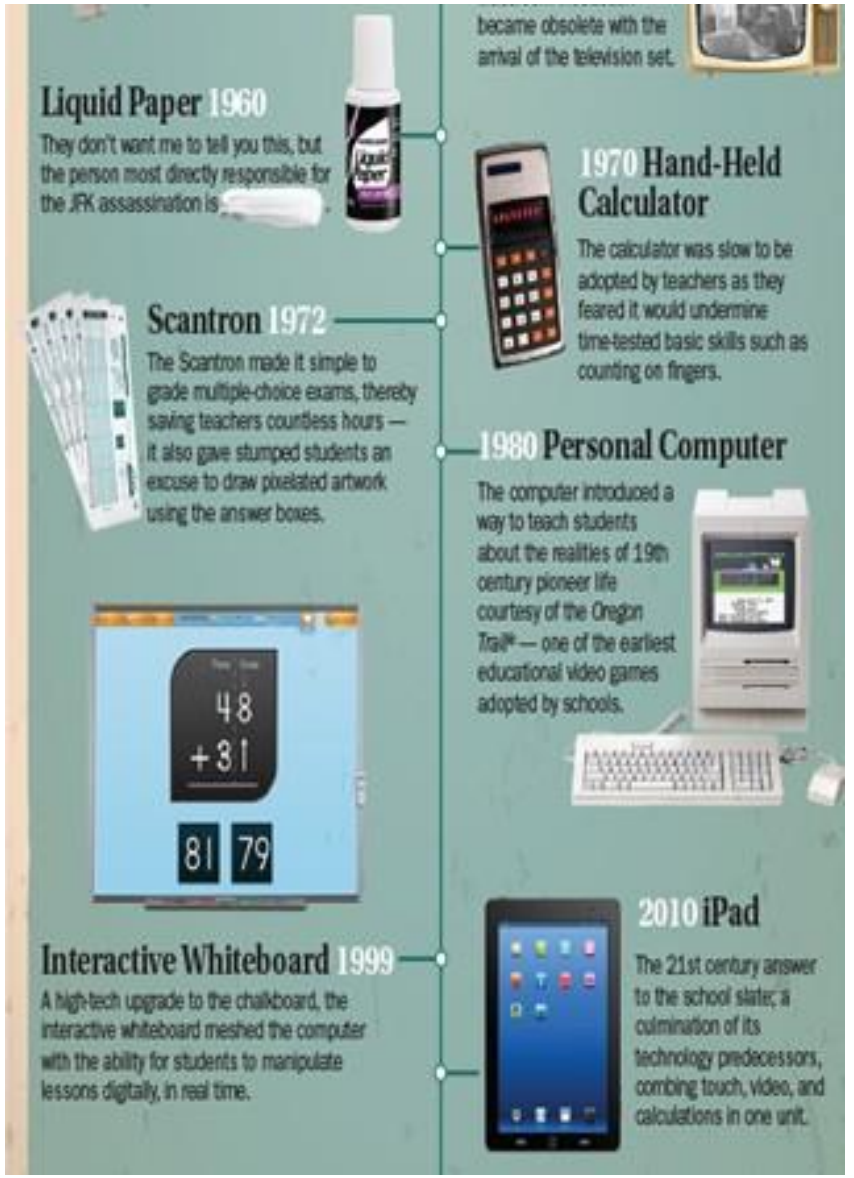
- **Etymology**: The Oxford English Dictionary and the Online Etymology Dictionary allow students to trace shifts in words' meaning and the introduction of popular terminology and concepts.
- **Exhibition creation**: Google Slides offers a simple platform on which to create virtual exhibitions.
- **Feedback**: Peer feedback offers a way for students to provide constructive feedback to classmates. You might consider asking students to participate collaboratively in the construction of rubrics

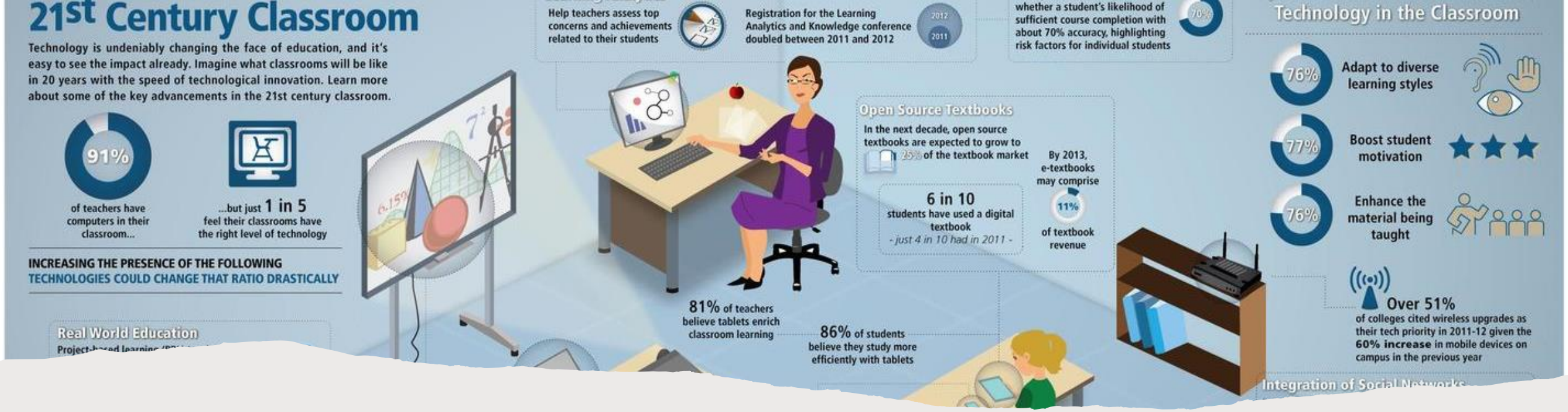
An Active Learning, Technology-Enhanced Approach

- **Geomapping**: Use theclio.com to identify sites of historical or cultural significance. HistoryPin is a collaboration tool that allows users to share images history across time and space and place those memories on maps and timelines.
- **Global learning**: Examples of global learning include paired classrooms and virtual pen pals. Skype in the Classroom offers an easy way to create virtual field trips and conversations with content-area specialists.
- **Interactive lessons**: Students can respond to a video with edpuzzle.com and enhance a website with insertlearning.com. Instructors can build lessons around TED talks with ed.ted.com.

An Active Learning, Technology-Enhanced Approach

- **Portfolios and digital galleries**: Students can create portfolios and digital galleries with Showcaseedu.com and create and annotate a portfolio with seesaw.me.
- **Student response systems**: Polling and quizzing provide a simple way to monitor student understanding in near real time.
- **Survey tools**: Consider conducting a survey using Google Forms or Survey Monkey -- and then you can use anonymous survey data in class to explore attitudes, interests and opinions -- or even students' family background and experiences.





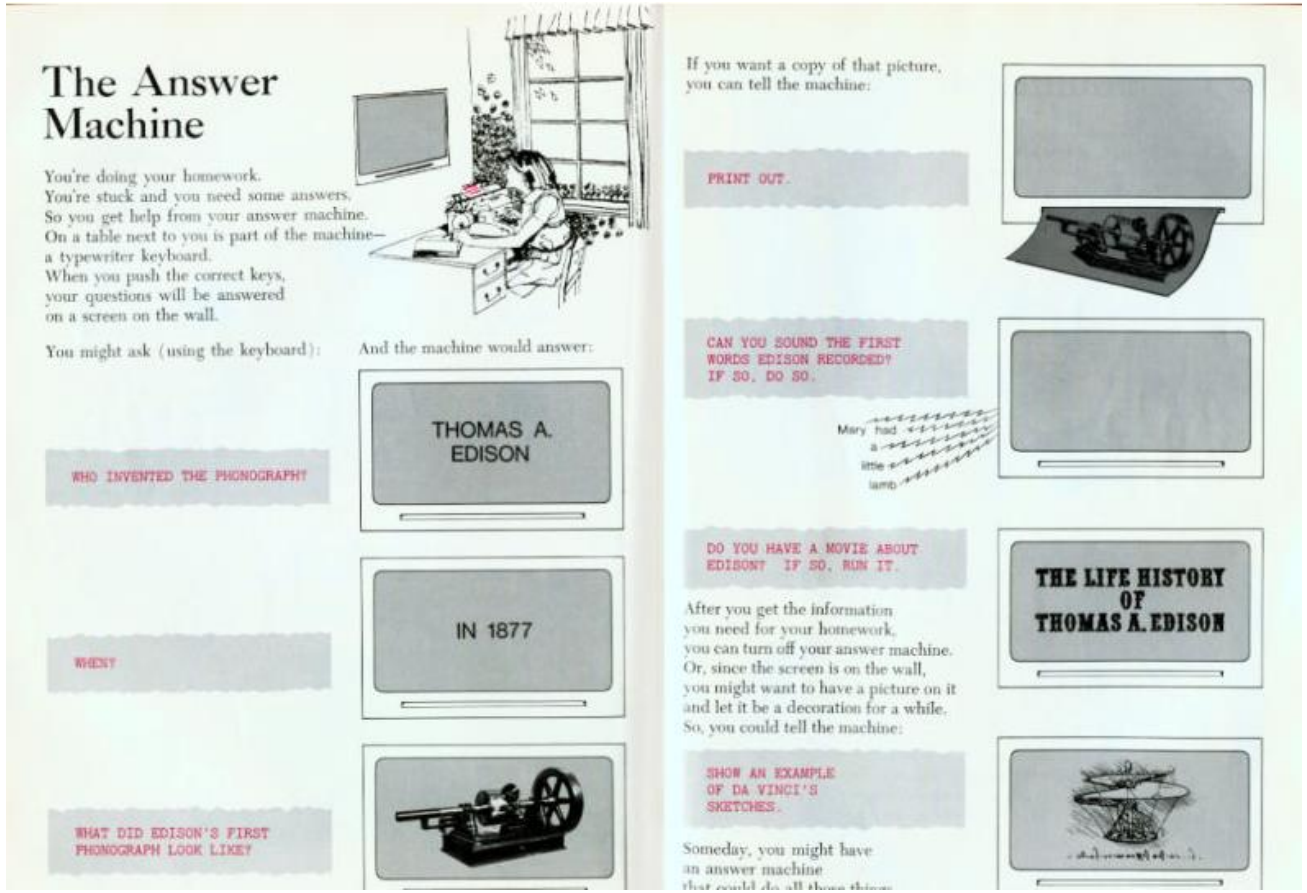
An Active Learning, Technology-Enhanced Approach

- **Text mining**: A simple tool for mining a text, which can offer insights into word choice, metaphors and imagery, is https://voyant-tools.org/.
- **Timelines**: Timeline.js and Time Mapper allow students to quickly create a timeline from a spreadsheet.

7 Innovative Approaches

A Gamified Approach

- This approach integrates game-like elements – such as interactivity, competition, playfulness and immediate feedback – into teaching and learning.
- The use of rewards, recognition, points and levels helps to motivate students and encourages perseverance.
  - There is serious gaming, video games in which the goal is not entertainment but education, practice and skills development.
  - There are role-playing games, like Reacting to the Past.
  - There are also simulations and immersive virtual environments.



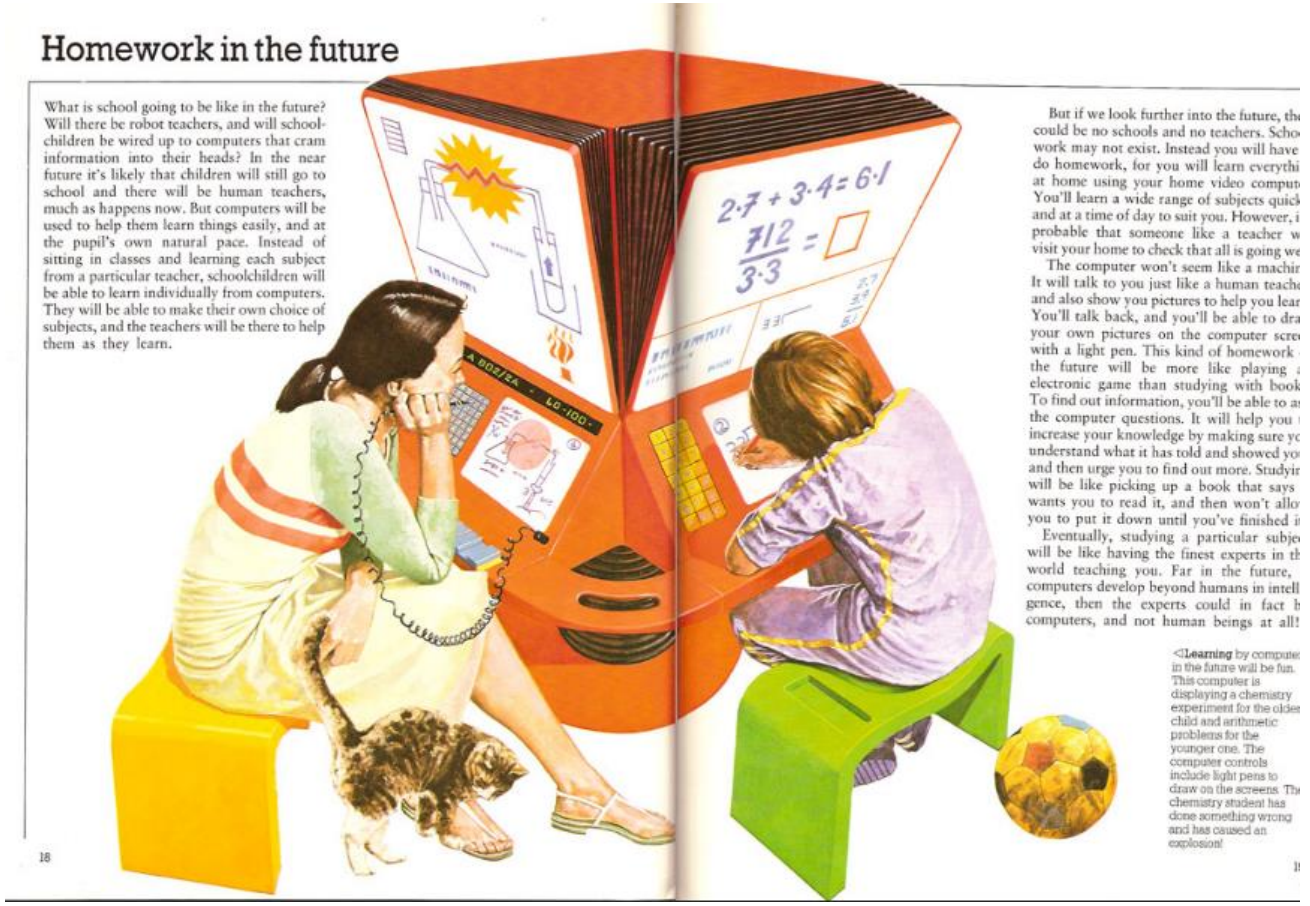
A Gamified Approach

- This approach integrates game-like elements – such as interactivity, competition, playfulness and immediate feedback – into teaching and learning. The use of rewards, recognition, points and levels helps to motivate students and encourages perseverance. Here are some examples:
- **Research Scavenger Hunt**: Ask students to discover how many children a typical mother had in 1800 or the number of automobiles in 1900.
- **Treasure Hunt**: Challenge students to solve a series of problems or to answer questions to reach or find the “treasure”.
- **College Bowl**: Pose questions to teams of students to see which group can answer the questions correctly first.

Technology-Enhanced Education

A Policy-Oriented Approach

- Students undertake policy research, data analysis, policy planning and formulation, policy implementation, and policy assessment.
- This approach almost inevitably leads students to understand the technical, political and organizational barriers to change, theories of change and the role of stakeholders in policy decisions.



Homework in the future

What is school going to be like in the future? Will there be robot teachers, and will schoolchildren be wired up to computers that cram information into their heads? In the near future it's likely that children will still go to school and there will be human teachers, much as happens now. But computers will be used to help them learn things easily, and at the pupil's own natural pace. Instead of sitting in classes and learning each subject from a particular teacher, schoolchildren will be able to learn individually from computers. They will be able to make their own choice of subjects, and the teachers will be there to help them as they learn.

But if we look further into the future, th could be no schools and no teachers. Scho work may not exist. Instead you will have do homework, for you will learn everythi at home using your home video comput You'll learn a wide range of subjects quick and at a time of day to suit you. However, i probable that someone like a teacher w visit your home to check that all is going we

The computer won't seem like a machir It will talk to you just like a human teache and also show you pictures to help you lear You'll talk back, and you'll be able to dra your own pictures on the computer scre with a light pen. This kind of homework the future will be more like playing electronic game than studying with book To find out information, you'll be able to a the computer questions. It will help you increase your knowledge by making sure yo understand what it has told and showed yo and then urge you to find out more. Studyir will be like picking up a book that says wants you to read it, and then won't allo you to put it down until you've finished i

Eventually, studying a particular subje will be like having the finest experts in th world teaching you. Far in the future, computers develop beyond humans in intell gence, then the experts could in fact b computers, and not human beings at all!

◁**Learning** by computer in the future will be fun. This computer is displaying a chemistry experiment for the older child and arithmetic problems for the younger one. The computer controls include light pens to draw on the screens. Th chemistry student has done something wrong and has caused an explosion!

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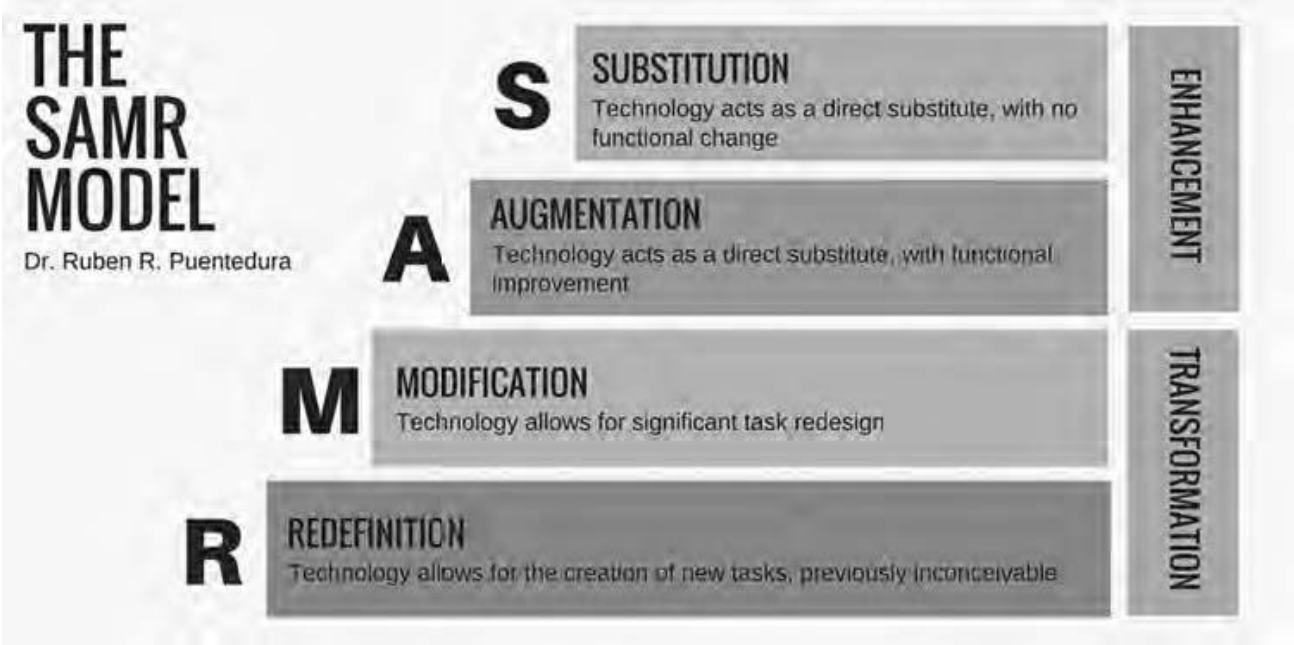
7 Innovative Approaches

A Project-Based Approach

- This “show us what you know” approach assesses student learning not by homework or quizzes or exams or response or research papers, but rather authentically: by a tangible result.
- Examples include:
  - An infographic
  - A contribution to a website
  - A podcast
  - A videostory
  - A virtual tour



Transform Learning into an Active Process

- Learning should not be a spectator sport.
  - Meaningful learning requires active engagement, critical thinking and thoughtful reflection.
  - Even online, students can engage in active enquiry and become creators of knowledge.