Interactive Techniques Updated using ChatGPT - May 2023

The following is an annotated list detailing how to integrate Chat GPT for a subset of the original 289 Interactive Teaching Strategies by Kevin Yee (drkevinyee@gmail.com), et al. updated in August 2020. Kevin secured a Creative Commons BY-NC-SA for the list that states it is ok to use and remix if non-commercial, must credit me and use the same CC license (No need to email for permission with this included).

The goal of this resource is to update interactive strategies that have been shown to be effective for meaningful, sustained learning through educational research. With the continual advancement of functional emerging technology such as ChatGPT AI, creating an update on these strategies can be helpful to teachers and learners.The following examples were created using Chat GPT.

Note: In an effort to offer more accessible learning environments, Chat GPT can provide text responses in Spanish, French, German, Italian, Portuguese, Dutch, Russian, Chinese, Japanese, Korean, and Arabic even when the prompts are in English.

1. **Think-Pair-Share** (TPS) is where students share and compare possible answers to a question with a partner before addressing the larger class. TPS engages students in active learning; promotes collaboration and discussion; helps students to clarify their thinking; provides an opportunity for students to share their ideas; and can be used to assess student understanding. Suggestions for implementing TPS are to:

- Choose questions that are open-ended and thought-provoking.
- Give students enough time to think about the question on their own.
- Encourage students to share their ideas with their partner.
- Make sure that all students have a chance to share their ideas with the class.

Examples of how Chat GPT can enhance:

- During the "think" phase, students can individually brainstorm their possible answers to a question. They can then use ChatGPT to generate an alternative viewpoint or perspective on the topic. For example, if the question is about the benefits of renewable energy, students can input their initial thoughts and ask ChatGPT to provide arguments against renewable energy.
- In the "pair" phase, students can input their ideas into ChatGPT and ask for suggestions on how to strengthen their reasoning or provide additional supporting evidence. For example, if the question is about the impact of social media on society, students can input their arguments and ask ChatGPT for specific studies that support their viewpoints.
- During the "share" phase, students can use ChatGPT to explore ethical considerations related to the question. They can input their responses and ask ChatGPT to provide insights on the ethical implications of their arguments.
- During the "share" phase, students can input their research summaries into ChatGPT and ask for additional insights, recent developments, or potential future impacts of these technologies.

2. **One-Minute Papers** are where students write for one minute on a specific question (What was the most important thing you learned today? What was the most surprising thing you learned in today's lesson? How can you apply what you learned today to your own life?). Keeping time is essential.

Examples of how Chat GPT can enhance:

- Input their response, focusing on a particular concept, and ask ChatGPT to generate the next part of a collaborative story related to that concept. Each student can contribute their own One-Minute Paper response as a continuation of the story.
- Input their response and ask ChatGPT to remix the concepts discussed into a different format, such as a poem, a song lyric, a comic strip, or a short skit.
- Input their response, focusing on a controversial or debatable concept, and ask ChatGPT to present arguments from different perspectives. Students can then engage in a debate with ChatGPT, presenting counter arguments and engaging in critical analysis.
- Input their response and ask ChatGPT to create a conceptual puzzle or riddle related to the concept.

3. **Muddiest Point** is similar to the Minute Paper, but asks for the "most confusing" point instead. This is often offered at the end of the session.

Examples of how Chat GPT can enhance:

- Input their muddiest point and ask ChatGPT to provide explanations or examples to enhance their understanding.
- Input their understanding of the concept and ask ChatGPT to provide alternative explanations.
- Generate additional questions related to their muddiest points. They can input their specific questions or uncertainties and ask ChatGPT to provide insights or prompts for further exploration.
- Summarize the key concepts related to their muddiest points. They can input their understanding of the concept and ask ChatGPT to provide a concise summary or key points to ensure they have grasped the essential aspects
- Engage in a dialogue-style conversation with ChatGPT to discuss their muddiest point. They can ask ChatGPT open-ended questions or provide prompts related to their confusion and have a back-and-forth conversation to gain further insights and clarification.
- Present a case study related to their muddiest point to ChatGPT and ask it to analyze and provide insights based on the given scenario. They can discuss the factors, implications, and potential solutions associated with the case study.

4. **Picture Prompts** show students an image with no explanation, and ask them to identify/explain it, and justify their answers.

Examples of how Chat GPT can enhance:

- Students can input the picture into ChatGPT and ask it to analyze and describe the image. ChatGPT can provide a detailed description of the visual elements, objects, colors, or any relevant details present in the picture.
- After observing the picture, students can use ChatGPT to interpret the meaning behind the image. They can input their interpretation or analysis and ask ChatGPT to provide insights, connections to related concepts, or possible explanations.
- If the picture depicts a specific cultural or historical scene, students can use ChatGPT to explore the context associated with it. They can input relevant keywords or prompts related to the cultural or historical aspects and ask ChatGPT to provide insights, explanations, or connections to the context.

- Students can use ChatGPT to develop creative stories inspired by the picture. They can input their initial ideas or story elements and ask ChatGPT to provide suggestions, twists, or additional details to enhance their storytelling.
- Students can use ChatGPT to reflect on their personal connections to the picture and analyze the emotions or thoughts it evokes in them. They can input their reflections and ask ChatGPT to provide insights or prompts for further self-reflection.

5. **Think Break** encourages the instructor to ask a rhetorical question, then allow 20 seconds for students to think about the problem before proceeding. This encourages students to take part in the problem-solving process. Having students write something down supports information processing and metacognition.

Examples of how Chat GPT can enhance:

- Students can explore different perspectives related to the rhetorical question. They can input the question and ask ChatGPT to provide insights from different disciplines, contexts, or theoretical frameworks. This allows students to broaden their thinking, consider diverse viewpoints, and develop a more comprehensive understanding of the problem.
- Use ChatGPT to analyze multiple perspectives related to the rhetorical question. They can input different viewpoints or arguments and ask ChatGPT to provide insights and counterarguments for each perspective.
- Generate follow-up questions based on the rhetorical question or their initial thoughts. They can input their inquiries and ask ChatGPT to provide further explanations, examples, or resources to address their questions.
- Compare and contrast their solutions with those generated by their peers. They can input their responses and ask ChatGPT to provide feedback or alternative viewpoints.
- Analyze the potential consequences of different solutions to the rhetorical question to provide insights on the positive and negative outcomes that may arise from each option.

6. **Cliffhanger Facilitating** is intentionally designing the learning experience to end a concept three-fourths of the way through the time. This generates an automatic bridge between sessions and learning sciences of spacing effect and interleaving.

Examples of how Chat GPT can enhance:

- Identify the best cliffhangers that are most likely to engage and motivate students. This would involve analyzing a variety of factors, such as the difficulty of the cliffhanger and the student's interest in the topic.
- Make the experience adaptive by adjusting the difficulty based on each student's progress, and providing additional support to students who are struggling.
- Use a variety of multimedia formats, such as videos, animations, and games, to keep students interested and motivated.
- Generate predictions about the concept that will be discussed in the next session. They can input the information they have learned so far and ask ChatGPT to provide insights or potential outcomes based on that information. This creates anticipation and encourages active engagement in the upcoming session.
- After the cliffhanger point in the learning experience, students can use ChatGPT to reflect on the unanswered questions or unresolved aspects of the concept. They can input their areas of confusion and ask ChatGPT to provide further insights.

- Explore related concepts that connect to the cliffhanger concept. They can input the key concepts or keywords and ask ChatGPT to provide explanations, examples, or connections to other relevant topics.
- To speculate on the potential implications of the cliffhanger concept. They can input the information they have learned and ask ChatGPT to provide insights on the real-world applications, consequences, or future developments related to the concept.

7. **Concept Mapping** is where students write keywords onto sticky notes and then organize them into a non-linear organization that describes the relationship between each term with transition, action verbs.

Examples of how ChatGPT can enhance:

- Use ChatGPT to generate an initial concept map based on a topic. They can input the keywords into ChatGPT and ask it to generate an outline of the relationships between the concepts. This can serve as a starting point for further refinement.
- Input concepts and ask ChatGPT to provide insights, connections, or examples.
- Review the coherence and logical flow of maps. Input the map into ChatGPT and ask it to analyze the relationships and suggest any modifications or improvements. ChatGPT can provide feedback on the organization of concepts, identify missing connections, or recommend adjustments to enhance the clarity of the map.
- Explore alternative perspectives or viewpoints related to the concepts in their concept maps. They can input a concept and ask ChatGPT to provide insights from different perspectives or fields of study.
- Find relevant resources to support the concepts in their maps. Input concepts and ask ChatGPT to suggest scholarly articles, books, research papers, or online resources that provide further information.
- Reflect on the evolution of their maps over time. Input previous versions of their maps and ask ChatGPT to compare them, identify changes, and provide insights on the growth of their understanding and the development of their map.

8. **Infographic** is where students create a graphic that combines flowchart logic and visual presentation.

Examples of how ChatGPT can enhance:

- Use AI to gather relevant data from websites, databases, and social media platforms. This can include extracting statistics, trends, or user-generated content that can be used to create informative infographics.
- Apply Natural Language Processing algorithms to analyze text data and identify key insights or themes. This can help in summarizing lengthy articles into concise and engaging infographic content.
- Use AI for image recognition and classification to automatically identify relevant visual elements that can enhance the infographic.
- Develop AI recommendation systems that suggest relevant data points, visuals, or design templates.
- Use AI algorithms to automatically arrange and optimize the layout of infographic elements, ensuring effective information presentation. This can involve techniques such as image cropping, font selection, or color palette suggestions.
- Apply AI techniques to augment new data samples to enhance the diversity and richness of infographic content. This can involve techniques like image synthesis or text generation to create visually appealing and informative infographics.

- Employ AI-based analytics tools to track and analyze the performance of created infographics. This can involve measuring user engagement, click-through rates, or social media sharing to understand the effectiveness of different design choices.

9. **Empty Outlines** assist by distributing a partially completed outline of the day's outcomes and ask students to complete.

Examples of how ChatGPT can enhance:

- Start by asking ChatGPT to generate relevant topics based on the subject. For example, "What are the main ideas or concepts related to [subject]?"
- Ask ChatGPT to organize the empty outline by providing a suggested structure. You could ask, "Can you suggest a logical order for organizing the content around [topic]?" ChatGPT can provide a structured outline with main points and subtopics.
- Request ChatGPT to expand on each subtopic in the empty outline by providing key details or supporting ideas. For example, ask, "Can you provide more information about [subtopic] in the outline?"
- Ask ChatGPT to generate questions related to each subtopic in the empty outline. For instance, request, "What are some questions that can be addressed under [subtopic] in the outline?"
- Inquire with ChatGPT about the connections and relationships between different concepts. For example, ask, "How can [subtopic 1] be linked to [subtopic 2] in the outline?"
- Engage ChatGPT in a feedback loop by asking for its evaluation of the existing outline and suggestions for improvement. For example, ask, "What do you think of the current outline? Are there any areas that need further development?"
- Inquire with ChatGPT about visual elements or diagrams that can be incorporated into the outline. For example, ask, "Are there any visual representations or diagrams that can help illustrate the concepts in the outline?"

10. **TV Commercial** is a strategy where students are placed in groups and create a 30-second TV commercial of the concepts being discussed.

Examples of how ChatGPT can enhance:

- Brainstorming ideas by engaging in a conversation with ChatGPT to generate creative ideas. Prompt questions like, "Can you suggest unique concepts for a TV commercial related to [subject]?" ChatGPT can provide innovative ideas and contribute to the brainstorming process.
- Discuss the initial commercial concept with ChatGPT and seek feedback on how to refine it. Ask questions like, "What elements can be added or modified to make the commercial more impactful?"
- Collaborate with ChatGPT to develop the script. Provide key points and ask ChatGPT to help expand. You can request dialogue suggestions, catchy taglines, or engaging narratives to incorporate into the script.
- If the TV commercial involves characters, engage in a conversation with ChatGPT to define their traits, personalities, and roles. You can discuss the desired emotions or reactions the characters should evoke in the audience.
- Seek ChatGPT's assistance in determining visual and audio elements. Discuss the appropriate background music, sound effects, visual styles, or cinematographic techniques to enhance the impact of the commercial.

- Engage in an iterative process with ChatGPT, where you share initial drafts of the commercial and seek feedback for improvement. Discuss aspects such as pacing, timing, message clarity, or emotional resonance to refine the commercial further.

11. **Bumper Stickers** is where we ask students to write a slogan-like bumper sticker to illustrate a particular concept or sum the course in one sentence.

Examples of how ChatGPT can enhance:

- Students can engage in a conversation with ChatGPT to generate a variety of ideas. They can ask, "Can you suggest concepts or topics that would be suitable for a bumper sticker slogan?"
- Students can discuss the concept to gain a deeper understanding. They can ask, "Can you explain the concept of [topic] in simpler terms?" ChatGPT can provide examples that students can use to refine their understanding and create more effective slogans.
- Students can engage in a dialogue with ChatGPT to generate ideas collaboratively. They can share their initial thoughts and ChatGPT can provide suggestions, improvements, or alternative phrasing to enhance their slogans.
- After students have created their bumper stickers, they can seek feedback from ChatGPT. They can ask "Is my slogan clear and impactful? How can I improve it?"

12. **Drawing for Understanding** – Students illustrate an abstract concept or idea. Comparing drawings around the room can clear up misconceptions.

Examples of how ChatGPT can enhance:

- Students can engage in a conversation with ChatGPT to clarify their understanding of the concept they intend to draw. They can describe their interpretation of the concept and ask, "Can you help me better understand [topic] visually?" ChatGPT can provide verbal explanations or descriptive details to guide the student's drawing process.
- Students can describe their ideas and ChatGPT can suggest visual references or examples that can inspire their drawings. Students can ask, "Can you provide examples of drawings related to [topic]?"
- Students can discuss the composition and layout of their drawings with ChatGPT. They can ask for suggestions on arranging elements or creating visual balance. ChatGPT can provide insights on design principles.
- Students can share their drawings with ChatGPT and ask for feedback on how to improve. They can seek guidance on details, shading, perspective, content, etc.

13. **Snowballs** ask students to ball up several blank pieces of paper and throw them around the room. Each time a “snowball” lands on a desk, the recipient will write three takeaways from the day’s class and then throw it onward. After nine ideas, pause for students to debrief.

Examples of how ChatGPT can enhance:

Using ChatGPT in the snowball active learning strategy can be challenging due to its text-based nature. However, here's an adapted example of how students can utilize ChatGPT to facilitate the snowball activity:

- Students ball up blank pieces of paper and throw them around the room.
- Each time a "snowball" lands on a desk, the recipient writes down three takeaways from the day's class on the paper.

- After writing, instead of throwing the physical snowball, students can input their three takeaways into a shared digital document.

Debriefing phase:

- Once the snowball activity is completed, the class pauses for debriefing.
- Students access the shared digital document to engage in a conversation with ChatGPT to analyze the ideas. They can ask, "ChatGPT, can you analyze the ideas and help us debrief?"

ChatGPT: "Of course! Please provide me with the document you'd like to discuss."
Student: "Here are the nine takeaways from our snowball activity:"
ChatGPT: "Let's start with the first takeaway:.' How did this concept resonate with your class? Did any specific examples or discussions arise from this topic?"

14. **Ticket out the Door** is where, at the end of class, ask students to summarize the session in 3-5 sentences and give the response as an exit ticket. The instructor reviews and summarizes key misconceptions to discuss at the next class.

Examples of how ChatGPT can enhance:

- Instead of submitting their response on paper, students can input their summary into a shared digital document. The instructor reviews the exit tickets and identifies key misconceptions, then engages in a conversation with ChatGPT to analyze the key misconceptions.
- ChatGPT example responses might include noting that the student found the relationships between concepts to be a major takeaway. However, they mentioned some challenges with the naming conventions. It could be helpful for the instructor to address the naming conventions in the next class and provide additional examples to clarify any misconceptions.
- Students can continue the conversation with ChatGPT, discussing other exit ticket summaries, exploring specific misconceptions, and seeking additional insights or suggestions for the instructor to address in the next class.
- By using ChatGPT, students can receive instant feedback and engage in discussions to gain a deeper understanding.

15. **Gallery Walk** where stations are created across the room, and students walk around to each station, completing a task to each prompt. A method to capture their responses is created and curated for the instructor to review and debrief.

Examples of how ChatGPT can enhance:

- At each station, students can engage in a conversation with ChatGPT to clarify the task or prompt associated with that station.
- Students can brainstorm ideas at each station and ChatGPT can offer suggestions, prompt critical thinking, or provide additional information.
- After completing each task, students can discuss with ChatGPT to reflect on their responses, seek feedback, or discuss their findings.ChatGPT can provide insights, offer alternative perspectives, or guide students in analyzing their ideas.
- ChatGPT can create the stations and generate research-based prompts related to a concept for the instructor.
- ChatGPT can create a measurement rubric which contains criteria and details for Task completion, Engagement, Collaboration, Critical thinking, Reflection, Debriefing and Feedback.

16. **Haiku** is where students write a haiku (a three-line poem: 5-syllables, then 7, then

5) on a concept, and then discuss and connect with learning outcomes.

Examples of how ChatGPT can enhance:

- After generating haikus, students can discuss the underlying meaning, symbolism, or connections to the learning outcomes.
- Students can use haikus to explore the relationships between different concepts and how they interconnect within a broader context. They can create haikus that incorporate multiple concepts and discuss the connections and implications.
- Students can collaborate with ChatGPT to refine their haikus and enhance their expression of the concept.
- ChatGPT can create an analytical rubric with criteria and points that include Syllable count, Theme and relevance, Creativity and originality, Emotional impact and Expression and language.

17. **Advice Letter** is where students write a letter of advice to future students on how to be successful in that course.

Examples of how ChatGPT can enhance:

- Students can collaborate with ChatGPT to brainstorm key points and advice to include in their letter.
- Students can seek guidance from ChatGPT on how to structure their advice letter effectively. They can discuss the appropriate introduction, body paragraphs, and conclusion, and ChatGPT can provide suggestions on organizing their thoughts and conveying information coherently.
- Students can share their experiences and insights gained from the course with ChatGPT. They can discuss specific challenges they faced and how they overcame them, providing authentic and relatable advice for future students.
- Students can seek feedback from ChatGPT on their drafted letter. They can ask for suggestions to improve clarity, coherence, or specific sections of the letter.
- Students can discuss effective study techniques they discovered during the course and seek suggestions from ChatGPT on how to present them in their advice letter. They can share strategies for note-taking, active learning, or exam preparation.
- Students can seek practical tips which can be related to resources, time management apps, online platforms, or helpful websites that assist them.
- Students can reflect on their personal growth and development throughout the course and seek guidance from ChatGPT on how to convey that. They can discuss the skills they acquired, their increased confidence, or their broader perspective on the subject matter.

18. **Harvesting** can happen after a class activity by asking students to reflect on “what” they learned, “so what” (why is it important and what are the implications), and “now what” (how to apply it or do things differently).

Examples of how ChatGPT can enhance:

- Students can discuss with ChatGPT the connections between the class activity and other topics. They can seek insights on how the concepts learned relate to broader contexts, interdisciplinary perspectives, or future courses.
- Students can engage in a conversation with ChatGPT to explore real-life applications. They can discuss how the knowledge gained from the class activity can be applied in practical scenarios or professions.

- Students can engage in a discussion with ChatGPT to challenge their own assumptions or biases revealed. They can seek guidance on how to critically analyze their perspectives and develop a more nuanced understanding.
- Students can seek guidance on setting goals for future learning based on their reflections. They can discuss areas they want to improve, skills they want to develop, or topics they want to explore further.

19. **Psychoanalysis** are where students get into pairs and interview one another about a recent concept. Sample questions include, “Can you describe the topic that you would like to analyze today? How did your approach change after learning about this topic? How will your actions be altered based on your learning?”

Examples of how ChatGPT can enhance:

- Students can engage in a conversation with ChatGPT to explore different interpretations or theories related to the concept. They can discuss how various perspectives contribute to a holistic understanding of the topic.
- Students can discuss how their learning about the concept contributes to their personal growth and development. They can reflect on how the knowledge gained has the potential to shape their beliefs, values, or behavior patterns.
- Students can discuss the broader societal implications of the concept they are analyzing. They can explore how the concept relates to social issues, cultural contexts, or ethical considerations.
- Students can seek guidance on additional resources, readings, or avenues for further exploration related to the concept. They can discuss their curiosity and desire to deepen their understanding beyond the classroom.

20. **Student Learning Communities** are similar to faculty learning communities, these communities of practice are meant to invest the participants with ownership and a focus on sharing and joint discovery.

Examples of how ChatGPT can enhance:

- Students can explore real-world applications of the concepts they are learning through collaborative conversations with ChatGPT. They can discuss how the course material translates into practical settings and share examples from their own research.
- Students from different disciplines can come together facilitated by ChatGPT to engage in cross-disciplinary discussions. They can explore the connections between their respective fields, share insights, and collaborate on interdisciplinary projects or research.
- Students can engage in debates and discussions on controversial topics within the learning community, facilitated by ChatGPT. They can explore different perspectives, present arguments, and engage in critical thinking to foster a deeper understanding.
- Students can use ChatGPT to collaboratively create concept maps, visualizing the connections between different ideas, theories, and concepts. They can collectively build knowledge frameworks and identify relationships.
- Students can take turns delivering mini-presentations on specific topics. They can prepare their presentations and use ChatGPT as a platform to share, engage in Q&A sessions, and facilitate discussions.

- Students can form virtual study groups and use ChatGPT for collaboration. They can set study goals, discuss challenging concepts, share resources, and support each other's learning process.

21. **Annotated Portfolios** is where a student adds an explanation of the thought process while completing the work in relation to the learning outcomes.

Examples of how ChatGPT can enhance:

- Students can use ChatGPT to explain the problem-solving strategies they employed when tackling complex assignments or projects. They can discuss the steps they took, the resources and the reasoning behind their approach.
- Students can use ChatGPT to highlight how the completed work demonstrates their ability to transfer knowledge from one context to another. They can discuss how they applied concepts learned in the course to real-life situations, projects, or interdisciplinary settings.
- ChatGPT can create an analytical rubric with criteria and points that include Prompt analysis, Feedback on annotations, Reviewing learning outcomes alignment and Language and grammar.

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Acknowledgement: This list began in 1992 by Kevin Yee. Many people have contributed ideas from their teaching practices. They are listed in alphabetical order: Melody Bowdon, Oana Cimpean, Tace Crouse, Kenyon Daniel, Andy Dardini, Sara Friedman, Kristen Gay, Gail Grabowsky, Jace Hargis, Amanda Helip-Wooley, Autar Kaw, Vicki Lavendol, Eric Main, Emad Mansour, Lianna McGowan, Sommer Mitchell, Christina Partin. Kingsley Reeves, Kenyatta Rivers, Erin Saitta, Anna Turner, Nicole West, John Williams.