

The Research Behind Inductive Learning

Inductive Learning is based on the pioneering work of educator Hilda Taba (Taba, Durkin, Fraenkel, & McNaughton, 1971). Concerned that education was placing too much emphasis on memorization of discrete facts and not enough emphasis on critical and conceptual thinking, Taba proposed a new instructional approach. In this approach, teachers shift from giving students information to helping students discover the relationships between the big ideas and key details that make up lessons, units, and disciplines. The process encourages students to develop their natural powers of inductive reasoning, moving from specific details to bigger ideas to broad generalizations.

Current research has finally caught up to Taba's inductive-based approach to teaching and learning. New meta-analytical research on effective teaching practices (Dean et al., 2012) suggests that teaching students how to classify information and how to generate and test hypotheses—two core skills built into Taba's model—both raise student achievement.

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Implementing Inductive Learning in the Classroom

1. Identify and distribute key words, phrases, items, problems, or images from a reading, lecture, or unit. Note that if you're basing the lesson on words or terms, students will need to assess their understanding of the terms and look up unfamiliar terms.
2. Model the process of grouping and labeling terms.
3. Have students analyze the items and explore the different ways they can group them. Encourage students to think flexibly and to subsume smaller groups into larger, more inclusive groups. Consider having students conduct the grouping process collaboratively, in small teams.
4. Ask students to devise a descriptive label for each of their groups.
5. Have students use their labels and word groupings to make several predictions or hypotheses about the reading, lecture, or unit. As students read the text, listen to the lecture, or participate in the unit, ask them to search for and collect evidence that supports or refutes their predictions. Students should write their predictions on a three-column Support/Refute Organizer (see below), with their hypotheses down the middle column, evidence that supports the hypotheses in the left column, and evidence that refutes the hypotheses in the right column.
6. Ask students to reflect on the Inductive Learning process, and lead a discussion on what they have learned from it.
7. Over time, teach students how to generalize and conceptualize by using the inductive process to identify key words, create groups, generate predictions, and test and refine those predictions against the evidence.

Planning Considerations

To develop an Inductive Learning lesson, think about the standards you expect to address, the deep understandings you want students to develop, how you will introduce the lesson, and how you will help students meet the cognitive demands of the strategy.

- Begin by asking yourself, "What standards do I intend to address? What are the big concepts in this lesson or unit of study that I want students to discover?"
- Select items to group by asking, "What 10–40 items (words, phrases, images, and so on) best represent these concepts?" Remember that students really need three items to make a stable group and that they will have an easier time making sense of new terms if the majority of the terms are familiar to them. Make sure that the items you select are specific, not general. For example, if you want students to discover that religion was important to colonial Americans, use words like *congregation*, *minister*, and *Sabbath* rather than words like *religion*.
- Establish a way for students to group items by asking yourself, "Will I provide an organizer or have students develop their own organizers?" You should also think about how you will model the grouping-and-labeling process for students who are new to the strategy. Try to model both obvious groupings (e.g., characters in *Romeo and Juliet*) and more subtle ones (e.g., a set of lines from *Romeo and Juliet* that suggests a central theme, such as rivalry).
- To ensure that the lesson runs smoothly, ask yourself, "How will I distribute the items? What is the best way to group students during this lesson?" Make sure that you are able to clearly explain to students what you expect of them during the lesson.
- To deepen understanding, develop some stretching questions to ask students, such as
 - What were your thoughts as you made that group?
 - If we were to move these items into this group, how would you change the label to accommodate the new items?
 - Look at the groups you have made. What do these groupings tell you about what we are going to study?
 - Can you form any other groups that we haven't thought about yet?
 - Why does this term belong in this group?
- To solidify understanding and promote transfer of learning, ask yourself, "What kind of synthesis task or closing activity can I prepare to help students apply what they have learned?"