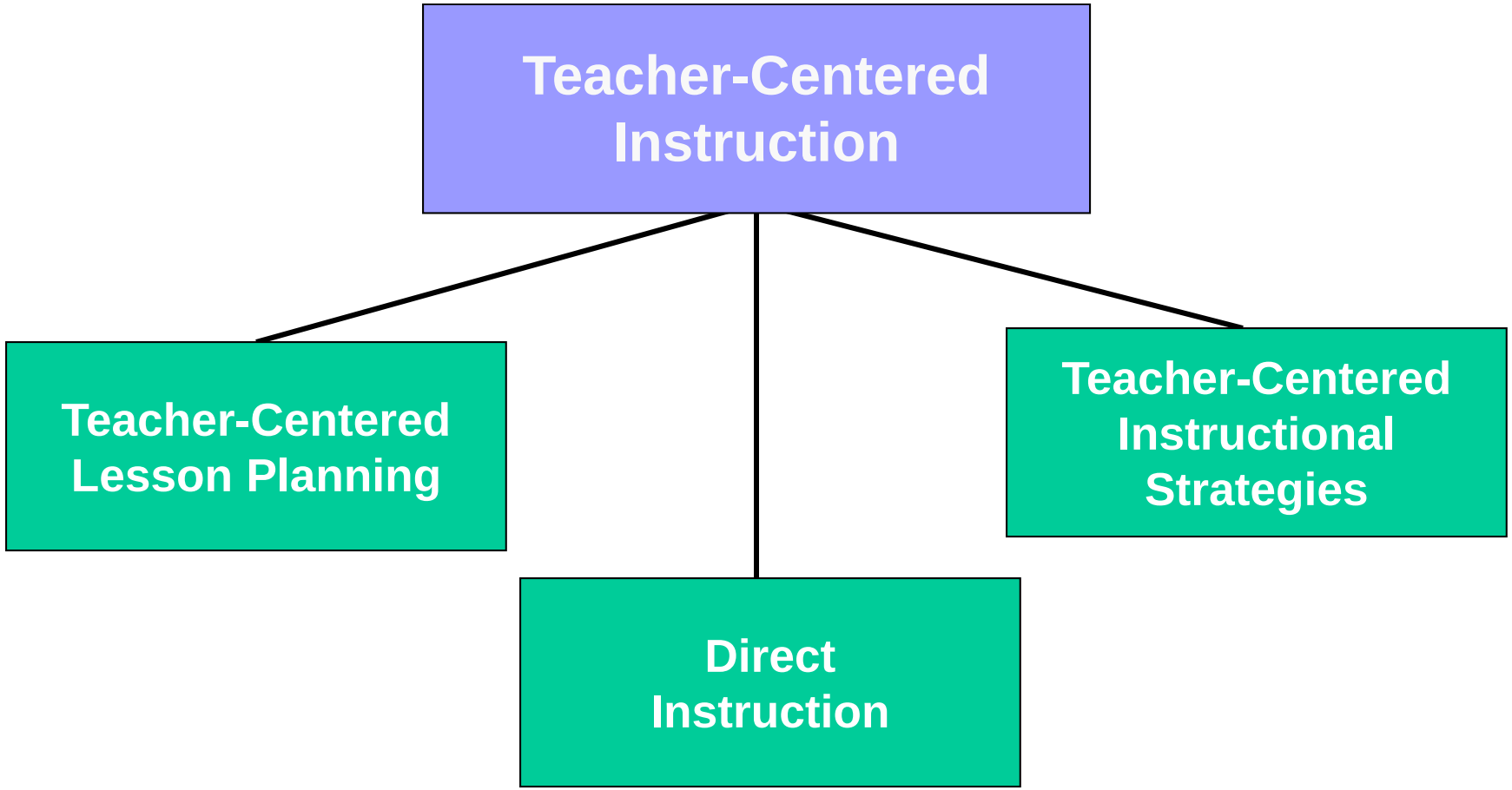
Teacher vs Learner Centered Instruction



Teacher-Centered Lesson Planning

- Behavioral Objectives

  - What will students do?
  - How will behavior be assessed?
  - What level of performance will be acceptable?

- Task Analysis

  Breaking down a complex task into its components

- Instructional Taxonomies

  Help classify educational objectives (see next slide)

Instructional Taxonomies

Knowledge Dimension

- **Factual:** Basic elements students must know to be acquainted with a discipline or solve problems in it
- **Conceptual:** Interrelationships among the basic elements framed within a larger structure
- **Procedural:** How to do something, methods of inquiry, criteria for using skills
- **Metacognitive:** Knowledge of cognition and awareness of one's own cognition (e.g., strategies)

Instructional Taxonomies cont.

Cognitive Process Dimension

- **Remember:** Retrieve relevant knowledge from long-term memory
- **Understand:** Construct meaning from instruction (interpreting, exemplifying, classifying, summarizing, inferring, comparing, explaining)
- **Apply:** Carry out or use a procedure in a given situation (e.g., use law of physics in an appropriate situation)

Instructional Taxonomies cont.

Cognitive Process Dimension

- **Analyze:** Break material into component parts and determine how the parts related to each other
- **Evaluate:** Make judgments based on criteria and standards (detecting inconsistencies or fallacies in a product)
- **Create:** Put elements together to form a coherent whole, reorganize elements into a new pattern or structure

Direction Instruction

A structured, teacher-centered approach focused on academic activity

- High teacher direction and control
- High teacher expectations of students' progress
- Maximization of time on academic tasks
- Keeping negative affect to a minimum

Cross-Cultural Comparisons

Why do Asian students outperform U.S. students in math?

- Asian teachers spend more time teaching math, maximizing “academic learning time”
- Asian students in school more days than U.S. students
- U.S. parents had lower expectations
- U.S. parents believe more in the effects of innate ability, Asian parents in effort and training
- Asian students more likely to do math homework, Asian parents more likely to help with homework

Cross-Cultural Comparison of Teachers

Problems of this type were given to elementary school teachers in the U.S. and China

Can you give an example of a concrete situation that corresponds to:

$$1\frac{3}{4} \div \frac{1}{2}$$

That is, create a simple word problem that could be solved by the above equation.

(try to do this yourself, sample answers - next slide)

Cross-Cultural Comparison of Teachers

Incorrect model: “If you have one pie and 3/4 of another pie to be divided equally by two people, how much pie will each person get?”

Correct model: “If a team of workers construct 1/2 kilometer of road per day, how many days will it take them to construct a road 1 and 3/4 kilometers long?”

Results: 96% of the U.S. teachers either could not describe an appropriate concrete situation or produced an incorrect model. 90% of the Chinese teachers produced correct models. YIKES!!!!!

Teacher-Centered Instructional Strategies

Orienting Students to New Materials

- Review the previous day's activities
- Discuss the lesson's objective
- Provide clear, explicit instructions about the work to be done
- Give an overview of today's lesson
- **Advance Organizers:** A framework for the new material, "big picture"
- **Expository Organizers:** New knowledge that can orient students, lesson's theme & its importance
- **Comparative Organizers:** Relate to what students already know

Teacher-Centered Instructional Strategies

Lecturing

- Be prepared, don't wing it
- Keep lectures short and intersperse them with questions and activities
- Make the lecture interesting and exciting (video clips, demonstrations, handouts, etc.)
- Follow a designated sequence and include certain key components:

- advance organizers
- verbal/visual highlighting
- relate new info to old
- elicit student responses
- overview at end of lecture
- connect to future lectures

Teacher-Centered Instructional Strategies

Questions and Discussion

- Use fact-based questions before thinking-based questions
- Avoid yes/no and leading questions
- Give students time to think
- Ask clear, purposeful, brief, and sequenced questions
- Monitor your response to students' answers
- Pose questions to whole class or individual students appropriately
- Encourage students to ask questions

Teacher-Centered Instructional Strategies

Mastery Learning, Seatwork and Homework

- Mixed reviews on mastery learning, depends on skill of teacher (see list of challenges in text)
- Learning centers as alternatives to seatwork
- ***How much and what type of homework?***

  - Positive link between homework and achievement, particularly with grades 7 to 12

  - For younger children, homework should foster a love of learning & hone study skills, short enough to be completed

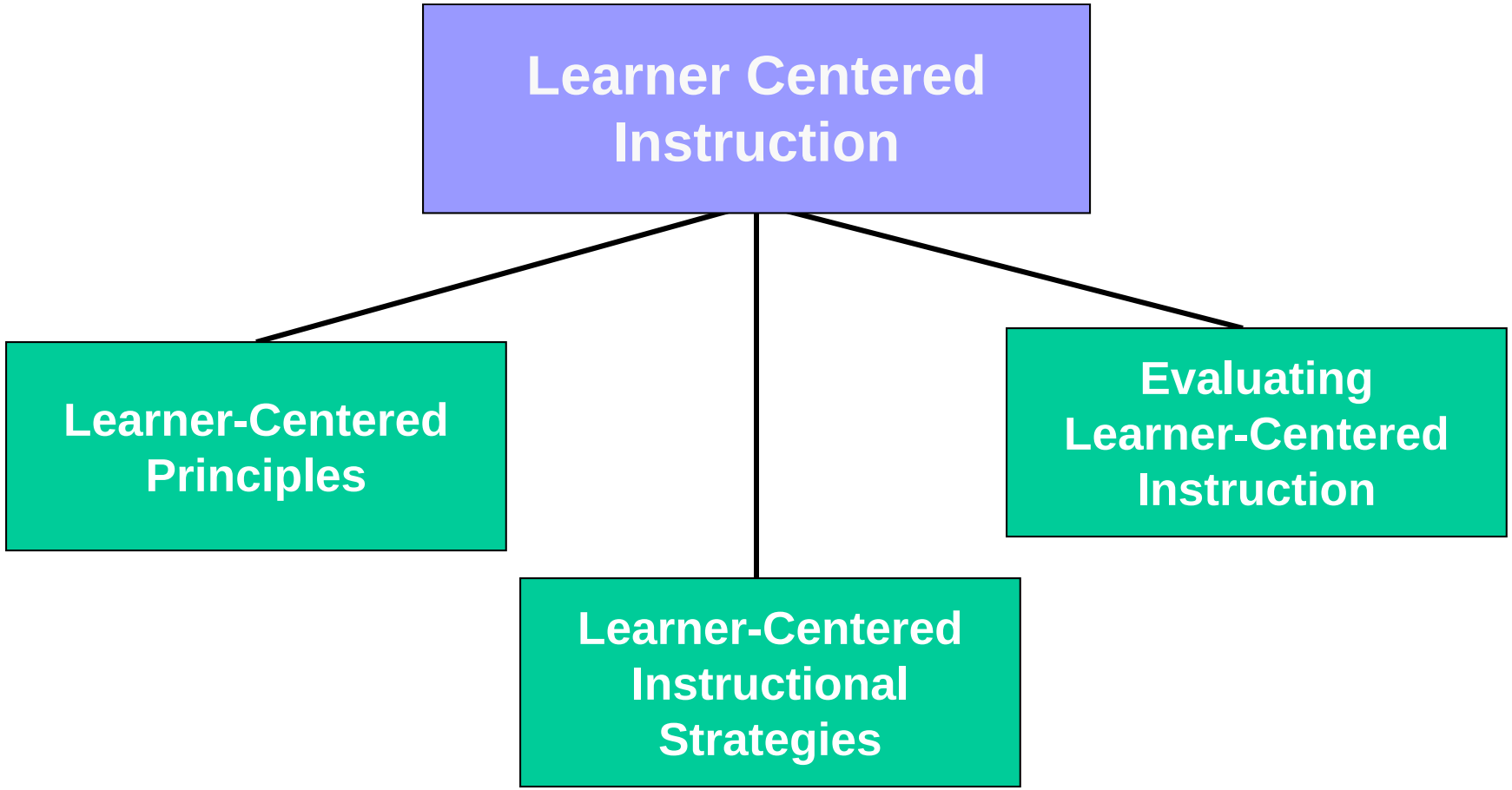
  - Homework should not duplicate material covered in class, should engage students in creative, exploratory activities

  - Homework should have a clear focus

Teacher Centered Instruction
Pros and Cons

- ***PRO:*** Best approach for teaching basic skills
- Often leads to passive, rote learning
- Too much reliance on paper-and-pencil tasks
- Produces overly structured and rigid classrooms
- Inadequate opportunities to construct knowledge and understanding
- Inadequate attention to students' socioemotional development, external rather then internal motivation
- Too little collaborative learning in small groups

Teacher vs Learner Centered Instruction



Learner-Centered Lesson Planning

Moves the focus away from the teacher toward the student, emphasis on students' perceptions of a positive learning environment & interpersonal relationships with the teacher

- Emphasizes active, reflective nature of learning
- Emphasizes the construction of knowledge, strategic thinking, and metacognition
- Internal motivation, the learner's natural curiosity
- Appreciation of developmental and social factors, acknowledgement of diversity

Learner-Centered Instructional Strategies

Problem-based Learning

- Exposes students to authentic problems like those that crop up in everyday life
- Students identify problems they wish to explore, then locate relevant materials/resources
- Students work in small groups and the teacher serves as a guide in their problem-solving

Example: 6th graders explore an authentic health problem in the local community - asthma

Students explore the causes, incidence and treatment, learn how environment conditions affect their health. They share what they learn with other students.

Learner-Centered Instructional Strategies

Essential Questions

- Questions that reflect the heart of the curriculum, most important things students should explore
- Questions that cause students to think, motivate their curiosity
- Essential Questions are creative choices, *"What was the effect of the Civil War?" vs. "Is the Civil War still going on?"*

Example: Students explore the question "What flies?" by examining everything from birds, bees, fish, planes

The initial question is followed by questions such as: "How and why do things fly?" "How does flight affect humans?" "What is the future of flight?"

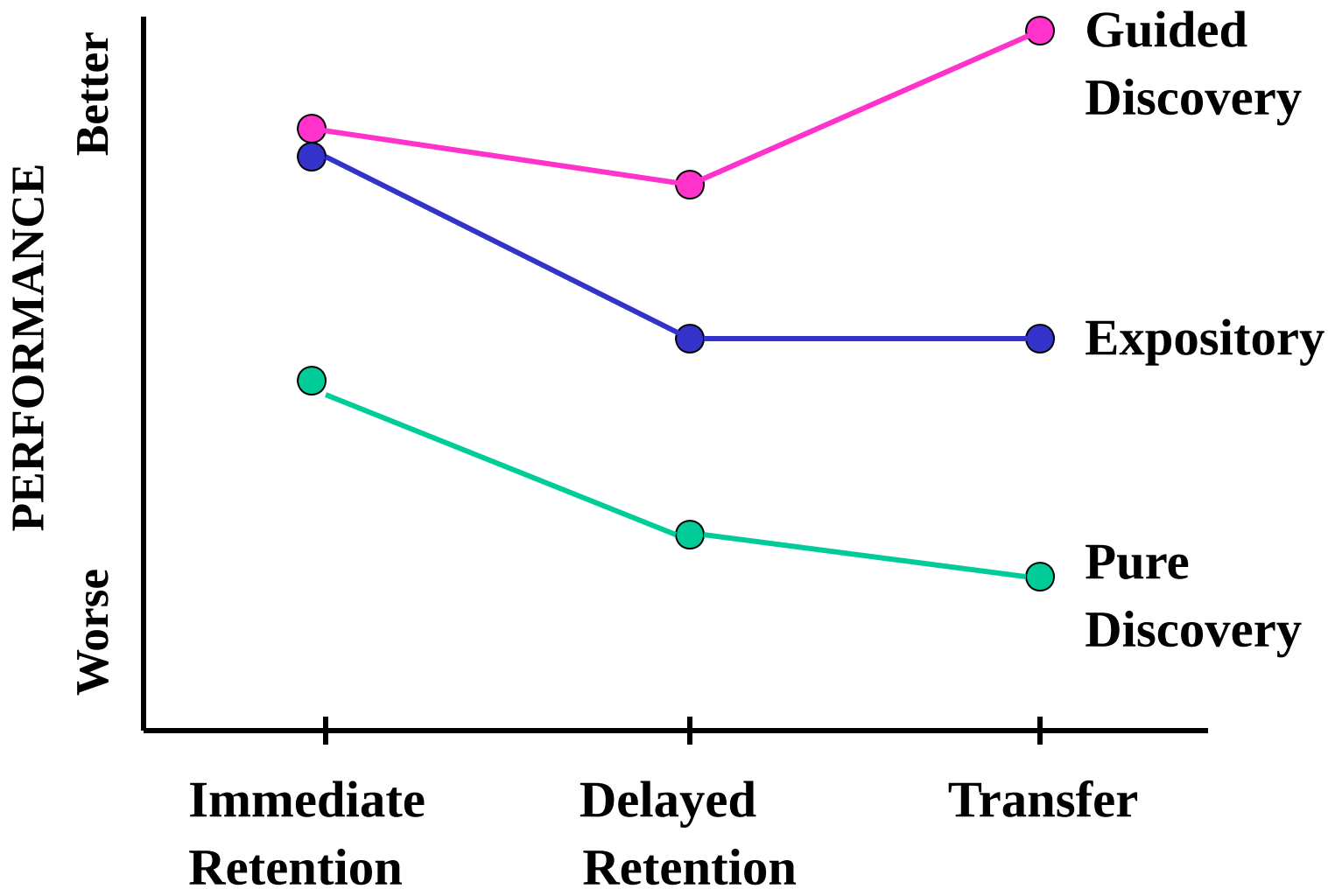
DISCOVERY METHODS

Pure Discovery
student receives problems to solve minimal guidance

Guided Discovery
student receives hints & direction along with problems

Expository Method
final answer or rule is presented to the student

COMPARING DISCOVERY METHODS



WHY IS GUIDED DISCOVERY BEST?

	Guided D	Pure D	Expository
• assures learning of rule/principle/concept	**yes**	**no**	**yes**
• encourages student to search for & activate	**yes**	**yes**	**no**
• teaches student about the art of discovery	**yes**	**yes**	**no**

Note: see earlier slide for the effects on retention & transfer

Learner Centered Instruction
Pros and Cons

- ***PRO:*** Students actively construct their understanding
- Too much attention to the process of learning, not enough to academic content
- In well-structured knowledge domains such as math and science, teacher-centered is better
- Less effective at the beginning level of instruction
- There is a gap between the theoretical level of learner centered instruction and its application, implementing it in the classroom is often more difficult than anticipated