Direct Instruction (learn about)

Type	How to do it	When is it best used	Avoid it when
Structured overview	A structured overview is designed to clarify the main concepts or process to be learned. An educator describes the outcome or outcomes, then the relationship between ideas on outline, concept map, or other visual like a diagram of a system.	• Start or end of the unit, new concept • To give enough information for educated choice • Revisited to remind students of the main concepts or relationships between parts of the process	• Substitution for deep learning • In the middle of the learning
Lecture/ Storytelling/ Video	Verbal (and sometimes visual) sharing of information from one person to another. Good versions always include vivid description or visuals and purposeful organization to aide retention. The main points, concepts or process in a lecture or video should be checked with formative assessment before additional new learning is introduced.	• Information must be shared rapidly but is not expected to be retained over time (introduction or nuance) • Intellectual or emotional connections must be made before deep inquiry	• Substitution for deep learning • Information is critical or must be used • Students are tired or distracted (ideally keep under 7 mins. without interruption)
Explicit Teaching/ Gradual Release of Responsibility	Explicit teaching is a formula for transfer of skills or information that provides for both recall and application. Educators do the following 1. state the purpose of the learning (outcome) 2. tell students what to do 3. show them how to do it 4. do it with them (whole class) 5. have student try it in small groups or with partners 6. have students try it individually	• when skills and content must be applied together and/or the learning is conceptually complex (i.e. solve a complex problem, use a specific process in a lab) • in areas of common error or misconception • in areas that need support for metacognition (how to ensure you are thinking about it in a disciplinary way)	• Reviewing • Summary is enough • Learning is not formulaic, or is interactive • You plan to skip steps 4 and 5 (it is much less effective without them)

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Direct Instruction (learn about - continued)

Type	How to do it	When is it best used	Avoid it when
Purposeful Practice	Individually or in small groups, the learners practice already taught content or skills that require decision making and conceptual depth. The educator circulates, corrects questions at the front and answers questions. This technique is commonly used in "flipped" classrooms so that student get immediate feedback and correction, and never practice mistakes.	• For things where quick recall and conceptual understanding is needed for correct responses • For things that need to be understood and applied repetitively	• Open ended tasks • Interactive and higher level tasks in combination
Didactic Questions	Educator uses whole class questions to determine quality of recall and automaticity, or to check for common errors. Tools like Top Hat facilitate checking with the whole class, not just individuals. The questions are low level (application at highest) with correct and incorrect responses	• To determine depth of student understanding in foundational knowledge before moving on • To check comprehension for something just learned	• Anything above the applied level on Blooms
Demonstration	Educator shows a skill and describes verbally the process being used (i.e. think aloud, talk aloud, showing a technique in a lab). The educator makes connections about his or her thinking process, and describes common errors or criteria overtly to avoid student repeating them	• Making the thinking process of experts explicit for others • Making the decision making process of students explicit for others • Illustrating points of difficulty • Very strong when paired with students and educators making criteria for high quality together, in student friendly-language	• Problem and solution or creative thinking • Indirect connections

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Indirect Instruction (think deeply)

Type	What is it	When is it best used	Avoid it when
Case-based/problem based	A specific real-world problem is posed, sometimes to a small group of students working together, and sometimes to an individual. Over time, more details about the problem may be revealed by the educator as students research and ask questions. Students write up or present their proposed solution based on what they have learned.	• Once students already have basic knowledge • When studies connect basic knowledge in more than one area • To help students empathize or connect to learning (relevance) • Once research skills have been taught	• When students are just learning about something (like frogs) • If research and basic content are not in place • If learning is mostly conceptual
Reading or viewing for meaning	Students are assigned a reading within that is appropriate to their background knowledge, discipline specific vocabulary, and the acquisition of information they will need to learn. Readings are much more effective if the student sets a purpose, predicts, uses receptive skills, and organizes information found in reading or video in note form.	• For students to find information and assess it or relate to it • To build basic knowledge and make connections	• Complex connections are the focus • The learning is procedural or needs to be automatic
Reflection	Reflection is the process of writing, thinking or talking to deepen learning or connect it to other learning, particularly about personal thinking process (metcognition), values, or applications of something just learned. Reflection is most effective given specific criteria or examples to compare to, and least effective if very open ended.	• At intervals through the learning when experience needs to become explicit understanding • As a part of a portfolio, journal, or critique • As peer, self or formative assessment • To help students empathize or connect to learning (relevance)	• Learning is rote • Student experience is not complete enough to generalize learning as reflection • Students have no control of outcomes • The learning purpose is value

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Indirect Instruction (think deeply - continued)

Type	What is it	When is it best used	Avoid it when
Concept mapping and graphic organizers	Concept mapping is a process where students take a series of concepts and create a visual of the relationships between them. Students brainstorm (or are given) a series of ideas. They group them and create categories, then choose words that describe the relationships between the categories. Images, links and different types of lines are used to provide depth and describe relationship. More effective concept maps are added to throughout the learning.	• To help students connect prior and learned concepts • To help students retain learning long-term • To make the relationship between concepts explicit	• When the learning is a skill or procedure • When learning is rote and designed to be forgotten quickly • Before the learning has occurred, or only once in the learning
Concept Attainment	Concept attainment is a process where students come to understand a concept because they classify data or examples based on definitions of concepts. The teacher provides categories for classification or descriptions of specific concepts, then gives students a variety of data or examples and non-examples (often in a powerpoint, spreadsheet etc.). Students classify the examples/data into the correct categories, refining their understanding of concepts.	• To help students become familiar with a concept or deepen personal understanding of the implications of a concept • To highlight similarities and differences • To prepare for research, inquiry or deep learning	• After learning is completed • When the learning is a skill or procedure • When learning is best done in context

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Experiential Instruction (learn by doing)

Type	What is it	When is it best used	Avoid it when
Best place learning or experiential learning	Learning occurs outside the traditional classroom when the learning is best because of the specific other location. Students work with experts, or work on real world task with a genuine audience. In large classroom, smaller group like lab groups or tutorial groups are the only groups small enough for doing this type of learning easily.	• Students have a complex problem to consider or solve (informed judgement) • Students have already gained basic knowledge on a topic and can at least synthesize • To help students connect to the community, the world of work or service to others	• There is no clear thing students will do to show you what they have learned • You want students to learn about something rather than act on learning (rote not inquiry)
Role play	Students (and sometimes the educator) pretend to be characters in order to experience something or communicate with an audience. In a large class, one can do this with pairs role playing a patient and clinician, or via digital tools like Twitter. Role play is used to help student apply learned concepts in the type of scenario where they will be required to use those concepts later.	• To help student empathize • To practice interpersonal skills need for the transition to work • To apply conceptual learning • To allow student the opportunity to be something other than themselves and learn accordingly	• You have not pre-taught character skills or rules for appropriate interaction • You want students to learn specific content rather than experience ideas, application, or emotions
Simulation or gaming	Students divided into smaller groups of 3-5 people. They are given a context (often a historical or "what if" scenario) and asked to take specific perspectives or represent a position, group, or person. The educator plans a series of events that occur in the scenario or game, and the players respond. Some games are fully digital, some have digital files, and some are mainly just text based. At the end, players reflect explicitly on what they have learned. In some disciplines, (like medicine) single person simulations in a simulation lab are more common.	• You want to teach a concept with more than one point of view • You want students to empathize (connect emotionally with an issue) and intellectualize (cognitively understand an issue) • You want complex, nuanced understanding	• You don't have carefully scripted events that all players can be equally involved in • The class is still learning terminology and been introduced to the main concepts

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Independent Instruction (make sense for yourself)

Type	What is it	When is it best used	Avoid it when
Research	Given a question or set of questions, students use a variety of types of text (video, online, print, interview) and data collection to determine required information. In larger classes, undergraduate research projects are often presented in symposium format and may be peer assessed	• When students need to practice academic research skills, but specific topics can be driven by student interest • When the potential research question require synthesis and evaluation	• You are have students research "about" rather than answer a question
Journal, Log, Portfolio or Blog	In a journal, log, portfolio or blog, students record reflections, observations and questions to support their own learning. In larger classes, blogs are more effective, as students can peer assess or comment on each other's blog. Students also learn through the comments and suggestions of those who read/view their work. Portfolios are often too time consuming without additional people helping mark.	• As a part of an extended process where reflection or observation makes the learning more specific or deeper • As part of an extended conversation with the teacher/peers/others	• Students don't have a major theme for their reflection and observation • The act of reflecting or observing is mostly for the purpose of grading, rather than the demonstration of growth

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Interactive Instruction (Learn by doing with others)

Type	What is it	When is it best used	Avoid it when
Brainstorming	Like many interactive activities in a large class, brainstorming requires small table groups (ideally no more than 5, but up to 8) Students collectively say everything they know, wonder about or imagine about a topic. The recorder records all ideas (even if some are rejected by the group) and the ideas are sorted into like groups and some are rejected. Digital tools like multiple screens or google docs may be useful for this.	• To introduce new concepts • To help all members of the group learn the prior knowledge only some members have • To explicitly communicate how concepts are connected	• Students are telling facts rather than generating ideas • Conceptual understanding needs depth and experience
Partnering	Partnering is essential to ensure students are actively processing learning in large classrooms. There are a variety of methods that: • Ask students to respond to a specific prompt by speaking to one or two other people • Use a specific structure to promote the learning like think-pair-share, jigsaw, 3 before me etc.	• You want students to think and speak about an idea you've just introduced • You want to provide security in practicing something new with a buddy • You want students to think aloud in the language of the discipline • You want to use the pressure of speaking to a peer to increase time on task	• You need to know exactly what each student knows (evaluation) • You have yet to establish an environment for on-task partner work
Discussion	Open discussion is not as effective in a large class because students are more concerned about speaking. It can be done well if good norms are set or students discuss in small groups (better because more students get to speak). The common steps are: • Students share ideas orally in response to questions • Educators or table leaders probe for additional clarity or other viewpoints • Summary to key points is provided to wrap up discussion	• Educator/leader ensures good distribution of participation • Not all participation is voluntary • Concepts are being fleshed out through details or examples	• Specific content is required • High level critical or creative thinking is required

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