Glossary: Lesson Segment Addressing Content

Academic Notebook: The academic notebook is a structured place for students to take notes, create non-linguistic representations of vocabulary and other academic concepts, and revise their thinking after they more deeply interact with new content. Academic notebooks have been adapted by Dr. Robert Marzano to include a systematic focus on vocabulary. . There are six steps involved in building academic vocabulary. The first three steps are to assist the teacher in direct instruction. The last three steps are to provide the learner practice and reinforcement.

Advanced Organizer: Information presented at the beginning of a lesson to be used by the students to link what is known with what is to be learned, or to help students organize material.

Analogy Activities: The process of identifying the relationship between two sets of items; identifying similarities and differences between relationships.

Anticipation Guide: A checklist of statements written by a teacher to activate existing knowledge prior to instruction. Students agree or disagree with the items on the list.

Attack Errors: Attempt(s) to disprove a point by discrediting the person making the point. Chunking Content: Presenting small parts of new material at a given time; the more students know about a subject, the larger the chunks can be.

Clarification Questions: Simple questions of fact, often answered with yes or no.

Classifying Activities: The process of grouping things that are alike into categories based on their characteristics.

Clear Claim: Students providing evidence to support an assertion of fact.

Comparison Activities: The process of identifying similarities and differences among or between things and ideas.

Concept Attainment: Leading students to a concept by asking them to compare and contrast examples (exemplars) that contain the characteristics (attributes) of the concept with examples that do not contain those attributes.

Critical Input Experience: When students engage in one or more of the following activities: read a section of the textbook, listen to a lecture, observe a demonstration, be part of a demonstration, or watch a video regarding content that is critical to a learning goal. If students understand the content provided in these activities, they have a good start toward the accomplishment of the learning goals. To increase understanding, teachers should facilitate students' actively processing the content.

Declarative Knowledge: Informational knowledge; for example: events during the Normandy invasion in World War II, characteristics of a cell, or the rules of baseball. Declarative knowledge is developed through review, revision, error analysis, and identification of similarities and differences.

Deepen Understanding: Extended processing of new information so that students do not lose knowledge they initially understand on a surface level.

Design Questions: Questions teachers ask themselves as they are designing learning experiences for their students.

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Distributed Practice: Practice sessions provided over longer periods of time to develop and maintain fluency of skills or processes.

Elaborative Inferences (Interrogations): An inferential question that has the following basic design: "Why would that be true?"

Errors in Reasoning: The four types of errors in reasoning are: faulty logic, attacks, weak references, and misinformation. Students should be apprised of these as they generate and test hypotheses about new content.

Facilitate Processing: Teacher designs a learning experience that helps students review or practice new content in order to deepen their understanding. The teacher's role is to guide the practice through the structure of the task or, by circulating, to check for understanding.

Faulty Logic: An assumption or conclusion that is incorrect based on incorrect reasoning or data. For example, assuming something that has occurred once will occur on a systematic basis.

Feedback: Feedback provides students with information regarding their progress toward a learning target. Clear learning goals are needed to give effective feedback.

Flow Chart: A graphic representation, using symbols interconnected with lines, of the successive steps in a procedure or system.

Fluency: Development of a skill or process to the level of automaticity or controlled processing.

Graphic Organizer: Any chart, graph, table, drawing, or other graphic device that is used for brainstorming, organizing ideas, or planning. Graphic organizers are one of the most popular ways for students to represent knowledge they have encountered in a critical input experience. Some examples include: story maps, Venn Diagrams, flow charts, matrices, histograms, and pie charts

Group Processing: One of the benefits of processing information in groups is that it can enhance the processing of new information because interacting in groups provides students with multiple reference points. Groups should be established to facilitate active processing of information during a critical input experience. Groups can be as small as pairs or as large as five. These groups should be guided by operating rules.

Guided Practice: Teacher designed practice sessions that provide well-structured learning experiences for students; this involves the gradual shaping of a procedure facilitated by teacher guidance. Students engage in the cognitive processing activities of organizing, reviewing, rehearsing, summarizing, comparing, and contrasting during guided practice.

Homework: Any teacher defined task intended for students to perform outside school hours. Independent Practice: Task during which students practice skills or processes with no guidance from the teacher or peers. Students have enough experience with the content to use it independently.

Inferential Questions: Questions that require students to elaborate on information they have experienced.

Informal Fallacies: An argument in which the stated premises fails to support their proposed conclusion.

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Instructional Strategy: Techniques used by teachers to facilitate students' independence using new knowledge. For example: previewing content by scanning a text, activating prior knowledge using a KWL activity, deepening understanding by using a comparison matrix, or generating and testing hypotheses by posing a problem to solve.

Interact with New Knowledge: Students are given the opportunity to process small chunks of new content in pairs, triads, or slightly larger groups.

Jigsaw: A cooperative learning technique in which students are assigned to four-person heterogeneous groups that are assigned topics on which they are to become experts. Students with the same expert topic from different teams meet in groups to discuss and research their topic. After they have become topic experts, they come back and teach the materials to their home group.

Key Junctures: The places in the content where teachers stop to check for understanding by having students process information in small groups.

KWL Strategy: A three column graphic organizer that helps students to think about what they already know about a topic, to decides on what they want to know, and to monitor what they are learning or have learned about the topic.

Lesson Segment: Parts of a lesson, each of which has important characteristics. Each segment contains different roles for teachers and students. Each segment has multiple goals, which can be successfully met by a variety of actions. The Marzano framework contains three general categories of lesson segments: lesson segments addressing content, lesson segments enacted on the spot, and lesson segments involving routine events. The ten design questions are organized under each segment.

Linkages: Connections between content previously addressed in class and content that is about to be presented in a critical input experience.

Massed Practice: Guided practice sessions provided frequently over time. Metaphor Activities: The process of identifying a general or basic pattern that connects information

that is not related on the literal or surface level. Misinformation: Confusing the facts.

Mnemonics: Techniques that help students memorize information such as facts. Students must understand information before a memory technique is employed.

Monitor: To oversee, supervise, or regulate students' depth of understanding of new content. New Knowledge: Content that students are unfamiliar with.

Non-linguistic Representation: Mental images associated with one's experiences; for example, a student who has studied and understands the defining characteristics of the cell will have mental images associated with that information. Activities that help students with non-linguistic processing of information include: creating graphic representations, making physical models, generating mental pictures, drawing pictures and pictographs, and engaging in kinesthetic representations of the content.

Note-Taking: Note-taking is closely related to summarizing in that it requires students to translate information for a critical input experience into their own abbreviated form.

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Overt Linkages: A previewing technique that points out the connections between content previously addressed in class and content that is about to be presented in a critical input experience.

Pictograph: A pictorial representation of numerical data or relationships, especially as a graph, but having each value represented by a proportional number of pictures.

Previewing: Any activity that starts students thinking about the content they will encounter in a critical input experience.

Probing Questions: Questions intended to provoke deeper thought about an issue at hand.

Procedural Knowledge: Knowledge that is oriented towards skills, strategies, or processes; over time, this knowledge is shaped by the learner. When fully developed, procedural knowledge can be performed at the level of automaticity or controlled processing. This is developed through practice over time. Some examples are: performing long division, reading a contour map, or editing an essay for mechanics.

Reciprocal Teaching: Reciprocal teaching refers to an instructional activity that takes place in the form of a dialogue between teacher and students regarding segments of text. The dialogue is structured by the use of four strategies: summarizing, question generating, clarifying, and predicting. The teacher and students take turns assuming the role of teacher in leading this dialogue.

Self-assess (Monitor): The act of paying attention to one's own work or understanding to make sure that it is clear and makes sense.

Summarize: The student's creation of a personalized, condensed account of the information gleaned from a critical input experience.

Weak Reference: Using sources that have no credibility. Word Splash: A strategy in which students write a story or paragraph using key vocabulary from a reading passage or unit of study.