

Questions are the Answer to Understanding

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Learner Audience: Anesthesiology residents in lectures and in clinical situations.

Background: The resident is encouraged to read more. Frequently what he reads does not relate the basic and clinical sciences to what he read. He learns factual answers. Formulating questions requires acquiring factual knowledge and thinking about it at a deeper level in order to understand “how” and “why” the facts interrelate.

Needs Assessment: A specific learning program is needed to help the resident learn to ask questions. The resident needs to learn to ask the correct questions to facilitate competence in-depth.

Hypothesis: Asking the correct questions takes resident learning to the level of understanding.

Curriculum Design: 1) **Knowledge Questions:** These are “what” questions. First, the resident is given a fact (answer) from his reading or clinical situation. Then the resident is encouraged to ask any other “what” questions stimulated by this fact (answer). For example, a current of electrons causes the depolarization of the nerve and subsequent twitch of the muscle with the nerve stimulator. What is the amplitude of the current in milliamps that should be used? 40 mA in the normal patient. What is the best location for the nerve stimulator? Ulnar nerve. 2) **Skill Questions:** These are “how” questions. They give the steps in a process. For example, how is the appropriate current evaluated clinically? Before muscle relaxant is given. 3) **Competence:** Knowledge and skills are competence; however, competence may not mean understanding. 4) **Understanding Questions:** These relate knowledge and skill (competence) to the basic and clinical sciences. They are “why” questions. For example, why is 40 mA the correct current amplitude? 40 mA of current releases the “easily released acetylcholine (Ach)”; higher currents release the “reserve stores of Ach” causing an over-estimation of the muscle relaxant dose that is needed.

Outcome: The resident will know how to ask the questions needed to gain competence and understanding. He will understand a process which will relate his knowledge to the basic and clinical sciences.