INQUIRY-BASED LEARNING

Inquiry-Based Learning

At SURGE Christian Academy, we utilize a learning process through questions generated from the interests, curiosities, and perspectives/experiences of our students.

Our Inquiry-based instructor believe that when investigations grow from our own questions, curiosities, and experiences, learning is an organic and motivating process that is intrinsically enjoyable.

Socratic Method of Questioning (Inquiry-Based Learning)

We always want to remind ourselves that questioning (inquiry-based learning) has a long and venerable history as an educational and a critical thinking strategy. The goal is to use questions and answers to challenge assumptions, expose contradictions, and lead to new knowledge and wisdom which will eventually become an undeniably powerful approach to analyze experiences and situations that may have positive and/or negative outcomes. Indeed, looking at an opinion, an argument, or an idea through various interpretations can provide knowledge that can last a lifetime.

A question is any sentence that has an interrogative form or function. In an academic classroom setting, a teacher's questions are defined as instructional or investigative cues or stimuli that convey to students the content elements to be learned and directions for what they are to do and how they are to do it. Questioning should become an intrinsic reaction that is proactive in it's initiation, rather than reactive. Waiting for an experience to occur for one to question it's validity or eventual outcome only places one on a defensive position. Questioning must be ongoing. It should happen from within, similar to how a child who without reservation innocently questions because of his or her innate curious nature to learn, but only to have the learning process halted by an adult's impatience in explaining, overprotection of what might be discovered, and/or fear of the power that might be gained through the acquisition of new knowledge. True knowledge allows a student to make an informed decision, rather than an innocent careless choice without forethought. It allows a student to clearly recognize the consequences of his or her choices.

Techniques of Effective Questioning:

A. **Establish an appropriate environment**. Only certain questions should be posed in front of the student; classroom questions should focus principally on knowledge and recall and to a lesser extent on comprehension.

B. **Create a climate conducive to learning**. A happy facial expression, nod, or verbal acknowledgement of a correct response encourages other students to participate in the discussion. Pose questions in a non-threatening way and receive answers in a supportive fashion. A harsh tone, especially when used to interrupt a response from the student, can be devastating for both the student and his or her peers.

C. **Prepare the students for the questioning session and discussion**.
Explain to students the format, expectations, and how this knowledge will help them.

D. **Use both pre-planned and emerging questions**. Pre-planned questions are those incorporated into the educational plan prospectively that are asked during the teaching session to introduce new concepts, focus the discussion on certain items, steer the discussion in specific directions, or identify student knowledge level on the topic. Emerging questions derive from the discussion itself and the specific answers given to previous questions. Think quickly and act decisively to phrase these questions accurately and pose them at appropriate times in the discussion.

E. **Use an appropriate variety and mix of questions.** One good strategy is to start with convergent questions and then continue with divergent questions, perhaps asking questions in hierarchical sequence and building from the recall of facts to higher levels of thinking and problem-solving. If a question requiring a higher level thinking skill stymies the student, go down to a question requiring a lower-level thinking skills and then work up the hierarchy.

F. **Avoid trick questions and those that require only a YES or NO response.** Trick questions should be avoided, as they frustrate students and tend to encourage frivolous responses. YES or NO questions encourage students to respond without fully understanding or thinking through the issue. When used, such questions should be followed by other questions to determine the thinking process of the student.

G. **Phrase the questions carefully, concisely, and clearly.** Improper phrasing and the use of multiple questions related to the same topic may result in unintentional cueing and inability to accurately assess student understanding.

H. **Address questions to the group, versus the individual.** Pose the question to the entire group and wait before identifying a student to respond. The wait time encourages all students to think about the response, as they do not know who is going to be called upon to answer the question. Select students at random to answer questions, as it tends to keep everyone attentive and involved.

I. **Adapt questions to the needs of the learners.** Assess the students' needs and tailor questions to maximize the number of correct answers while moving toward more and more difficult questions. Remember, no two groups of students will be alike or at the same level.

J. **Use sufficient wait time.** The teacher can significantly enhance the analytic and problem-solving skills of students by allowing sufficient wait times before responding, both after posing a question and after the answer is given. This allows everyone to think about not only the question but also the response provided by the student. Three to five seconds in most cases; longer in some, maybe up to seconds for higher-order questions.

K. **Respond to answers given by students.** Listen carefully to the answers given by students; do not interrupt students while they are responding to questions unless they are straying far off course, are totally unfocused, or are being disruptive. Acknowledge correct answers and provide positive reinforcement. Do not use sarcasm, reprimands, accusations, and personal attacks. Repeat answers only when the other students have not heard the answers; other repeats waste time. Keep questioning until the learning objectives for the session have been achieved; this may be the best opportunity to teach a particular concept. Handle incomplete answers by reinforcing what is correct and then asking probing questions.

L. **Use questions to identify learning objectives for follow-up self-study.** Pose questions towards the end of the teaching session to identify specific areas for additional learning opportunities that students can pursue on their own time.

TYPES OF PROBING QUESTIONS
Extension: Require students to elaborate on the response given to an earlier question. Such questions indicate to the learner that the original response was in the right direction but was not adequate.
Clarification: Useful when the student's response is unclear or incomplete.
Justification: Require the learner to provide rationale for the previously-given response. Useful in providing insights into thinking and reasoning processes of students and revealing errors in these processes.
Prompting: Useful when students do not respond to the original question
Redirection: Used to elicit a variety of opinions during problem-solving sessions or discussions.

Aristotle's Modes of Persuasion

Persuasion is clearly a sort of demonstration, since we are most fully persuaded when we consider a thing to have been demonstrated. Of the modes of persuasion furnished by the spoken word there are three kinds. Persuasion is effected through the *speech itself* when we have proved a truth or an apparent truth by means of the persuasive arguments suitable to the case in question (speaker's knowledge, comprehension, application, analysis, synthesis, and evaluation). Secondly, Persuasion is achieved by the speaker's *personal skill and character* when the speech is so spoken as to make us think him credible (speaker's skill acquisition). Thirdly, persuasion may come through the hearers, when the *speech stirs their emotions* (speaker's affect and emotion with what he or she conveys to the audience).

The modes of persuasion are devices in rhetoric that classify the student's (speaker's) appeal to the audience. They are: logos , ethos, and pathos. Aristotle's *On Rhetoric* describes the modes of persuasion thus:

1. The Development of the *Logos Mode of Persuasion* (knowledge acquisition on the subject area) *Logos* is logical appeal, and indeed the term *logic* is derived from it. It is normally used to describe facts, figures, knowledge that support the student's topic.

2. The Development of the *Ethos Mode of Persuasion* (skill acquisition on the subject area *Ethos* is an appeal to authority. It is how well the student (speaker) convinces the audience that he or she is qualified to speak on the particular subject.

3. The Development of the *Pathos Mode of Persuasion* (affect or emotion on the subject area) *Pathos* is an appeal to the audience's emotions. It can be in the form of metaphor, simile, a passionate delivery, or even a simple claim that a matter is unjust. Pathos can be particularly powerful if used well. Pathos is most effective when the author connects with an underlying value of the student (empathy).

When all three modes of persuasion are used together, a student, speaker or writer can create very strong arguments, debates, and questions that makes an audience think about its own interpretations, values, and beliefs on various concepts, topics, opinion, or most simple of ideas.

BRIDGING THE SOCRATIC METHOD OF LEARNING AND ARISTOTLE'S MODES OF PERSUASION WITH:

Bloom's Taxonomy of Educational Objectives

Bloom's Taxonomy is a convenient way to describe the degree to which we want our students to understand and use concepts, to demonstrate particular skills, and to have their values, attitudes, and interests affected. It is critical that we determine the levels of student expertise that we are expecting our students to achieve because this will determine which assessment techniques, class work, homework, and projects are most appropriate for each subject area. Bloom's Taxonomy and the words associated with its different categories can assist in the goal-defining process itself. Thus, Bloom's Taxonomy can be used in an iterative fashion to first state and then refine subject area goals (as they pertain to the Florida Next Generation Sunshine State Standards). Bloom's Taxonomy is unique in its framework. It can greatly assist the teacher in its application, to synthesize the Socratic Method of Learning and Aristotle's Modes of Persuasion.

A. Bloom's Taxonomy of Educational Objectives for:

For Knowledge-Based Goals *(monitoring the Logos training of the mind)*

Knowledge (Remembering: Remembering information**):** Exhibits previously learned material by recalling facts, terms, basic concepts and answers.

Comprehension (Understanding: Explain information or concepts**):** Demonstrating an Understanding. Grasping the meaning of information. Explain/restate ideas.

Application (Applying: Use information in new ways**):** Solving problems by applying acquired knowledge, facts, techniques and rules in a different way. Using learned material in actual/new situations.

Analysis (Analyzing: Distinguish different arts): Examining and breaking information into parts identifying motives or causes; making inferences and finding evidence to support generalizations

Synthesis (Evaluating: Defend concept or idea): Compiling information together in a different way by combining elements in a new pattern or proposing alternative solutions. Rearranging component ideas into new/establish new relationships

Evaluation (Creating: Creating new ideas): Presenting and defending opinions in making judgments about information based on internal evidence or external criteria, validity of ideas or quality of work based on a set of criteria

B. Bloom's Taxonomy of Educational Objectives for:

For Skill-Based Goals *(monitoring the Ethos training of the mind)*

Perception: Uses sensory cues to guide actions

Set: Demonstrates a readiness to take action to perform the task or objective

Guided Response: Knows steps required to complete the task or objective

Mechanism: Performs tasks or objective in a confident, proficient, and habitual manner

Complex Overt Response: Performs task or objective in a confident, proficient, and habitual manner

Adaptation: Performs task or objective as above, but can also modify actions to account for new or problematic situations

Organization: Creates new tasks or objectives incorporating learned one.

C. Bloom's Taxonomy of Educational Objectives for*:*

For Affective Goals *(monitoring the Pathos training of the mind)*

Receiving: Demonstrates a willingness to participate in the activity

Responding: Shows interest in the objects, phenomena, or activity by seeking it out or pursuing it for pleasure

Valuing: Internalizes an appreciation for (values) the objectives, phenomena, or activity;

Organization: Begins to compare different values, and resolves conflicts between them to from an internally consistent system of values

Characterization by Value or Value Complex: Adopts a long-term value system that is "pervasive, consistent, and predictable."

Using this pedagogy, student's learning is enhanced by developing a framework of general logic for reasoning since each subject area taught will be shared by all students who share the same framework, i.e., all students will:

- Share goals and objectives (mastering the subject)
- Share questions and problems (all want solutions)
- Share information and data (which they all can use)
- Share concepts and ideas (which helps them all to organize their data)
- Share common point of view (which enables them all to pursue common goals from a common framework)

At SURGE Christian Academy the purpose of teaching, we believe, is not solely to master factual material, but also *to teach the student how to think*, and *to encourage him/her to think*. The use of the

In addition, PEAK Teaching for Excellence Model will assist in increasing the motivation, engagement, to think and learn, because it is an effective integration of research-supported approaches to our Socratic Method of instruction and Aristotle's modes of persuasion curriculum, and assessment principles, strategies, and techniques that have consistently made positive differences in leaving no child behind. The PEAK Model integrates the effective works of the nations' leading educators, researchers, authors, school systems, and classroom teachers into a comprehensive approach with proven results. SURGE Christian Academy PEAK teachers or educators will utilize effective processes integrating our Socratic Method of Instruction, Aristotle's Methods of Persuasion, and Blooms Taxonomy of Educational Objectives driven curriculum then delivers it in a fashion and in an environment that empowers learners.