

FOREWORD

It gives me great pleasure to write the Foreword for the third volume of *Inquiry-Based Learning*. As an educator, this topic has always been dear to my heart. It is a topic that is meaningful because this process of learning encourages higher level thinking processes for all learners at any level of study – thinking skills that are needed by all, for the 21st century. Inquiry is not a “method” of doing mathematics, science, literacy, or other subjects. Inquiry-based learning is an approach to tentatively explore, investigate, and discover answers to formulated questions. As Wells (1999) stated, equally important in an inquiry approach is that answers to questions are taken seriously and are investigated rigorously, as the circumstances permit.

In this volume, you will read about successful implementation of elements of inquiry that may be integrated in a variety of learning settings. I would suggest that as you read this volume you consider what inquiry should look like when the approach is used in your own educational setting.

As an educator, professor, teacher, and consultant, I continue to provide professional development for teachers and administrators that integrate the following inquiry components: (1) tap into the learners’ prior knowledge, (2) integrate collaborative work and hands-on experiences using materials, (3) follow the problem-solving process and strategies, (4) accept multiple solutions to problems, (5) encourage high-level thinking through open-ended situations, (6) create conversations around solving problems, and (7) reflect on ideas both in discussion and in writing (Cozza & Bonekemper, 2007). Unfortunately, I have found that an inquiry lesson is often falsely represented with teachers only focusing on asking students to perform hands-on tasks. I have also witnessed that inquiry is not usually an agenda to be integrated into an administrator’s vision action plan. What the reader should realize is that inquiry is not an all or nothing process. Like most instructional practices, it manifests itself along a continuum that shifts according to time, place, and circumstance (Audet, 2005) based on the influence of lesson topic and task, learning environment, and a student’s experiences.

Some factors to consider in an inquiry model are the following: the level of inquiry is based on the relative amounts of student versus teacher control

over an activity, and that the inquiry process skills are developmental in nature. Based on my experiences, choosing the inquiry model in a lesson should be influenced by the topic of study, age level of the learner, amount of experience of the learner, and the nature of the task. It is important to note that merging inquiry into programs should be a gradual process over-time. Teachers and students need to gain an understanding of just what inquiry looks like during a slow release of control over classroom events.

An important framework to consider for a continuum of inquiry learning from grades pk-16 includes the following elements: students at all levels should progress through a cycle from questioning and hypothesizing to data collection, analysis, application, synthesis, and evaluation. How do teachers sequence instruction when using the framework? Although teachers' approaches vary, a three series sequence of student performance occurs: messing around with materials, guided inquiry (Ritchart, Stone Wiske, Buchovecky, & Hetland, 1998), problem solving, and metacognitive applications (Cozza & Oreshkina, 2013). Teachers build on students' prior experiences with initial explorations of central questions, materials, and issues about a topic. For example, in a science electricity class, third graders brainstorm and hypothesize just how lights turn on and off considering materials such as a light bulb, electrical wire, and a battery. During guided inquiry, small collaborative groups solve problem and use the materials to test how a bulb lights. Students record through drawings which diagram lights a bulb and which does not. The students explore, investigate, question, synthesize ideas and draw conclusions. As a culminating task, students become metacognitive and reflect on the investigation to understand just how they met the lesson goals. The inquiry process moves the learners' performances from simple to complex thinking tasks, from structured to more open-ended activities, and from collaborative to more independent evaluations. This is the inquiry process that should be included in school vision plans, integrated into professional development programs for educators, and connected to all pk-16 classrooms.

Inquiry is the practice of extracting meaning from experience (Audet, 2005) and it is a habit that integrates naturally in the teaching and learning processes. High-level thinking skills (skills required for the 21st century) are interwoven through all inquiry endeavors. What I suggest is that readers of this volume consider the concepts presented and reflect on how such factors might influence and become meaningful for your own performance as a professional.

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