

Introduction

Welcome to Inquiry-Based Learning Using Everyday Objects (Object-Based Inquiry)

Inquiry-based learning and *inquiry teaching* are phrases that mean different things to different people. For some, inquiry means turning students loose to investigate areas of interest to them. For others, inquiry means experimentation, even if the teacher provides all of the steps and students know the final outcome they are trying to reach—the so-called verification lab. Neither of these notions truly captures the essence of what inquiry teaching and learning is all about.

In this book, we seek to promote the notion of inquiry as a process, initiated by either teacher or students, in which students investigate central, essential questions while their teacher guides them through this process. Again, these essential questions can come from either the teacher or the students. Many teachers with whom we have worked believe that if the teacher poses the initial question, students are not truly engaged in inquiry. Certainly they are! Teachers must address curriculum standards and teach specific objectives. They cannot ignore these elements. But teachers can turn these standards and objectives into investigations which, while encompassing the concepts they must teach, honor the curiosity of the students themselves. Initial questions are just that—*beginning points* for student investigation. The students become responsible for the direction they go in pursuit of understanding the initial question.

Students' ability to pursue answers along different pathways does not occur naturally. We designed this book to help teachers begin to understand how to help students learn to truly engage in inquiry. We provide guidance in using an object-based approach to inquiry which will help

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students become more observant, more inquisitive, and more reflective. Teachers must train students in this type of thinking and in the development of their reasoning abilities. Through the sample lessons we have provided, we hope to give teachers user-friendly models of this process. We have structured the lessons to increase both teacher and student success with the process and have provided tips on how to move along the continuum from more structured to more student-initiated. This book is intended as a stimulus for change in both teaching and thinking, and we offer object-based inquiry as a tool for teachers to add to their existing repertoire of teaching strategies.

Along this line, it is important to keep in mind that object-based inquiry is not suitable for every lesson or every concept you need to teach. Object-based inquiry is simply a strategy to enhance your skills as an instructor. It is ideal for encouraging students' observation and critical thinking skills such as classifying and categorizing. It is also an excellent strategy for lessons in which you are teaching for conceptual change. It is clear that students enter our classrooms with conceptions and beliefs in place. Although many of these beliefs are erroneous, students nonetheless interpret all new information in light of these previously held conceptions (Driver, 1989). Believing that teachers should strive to help students come to more accurate conceptions, we feel that it is important that teachers understand how this change is accommodated.

An excellent model for teachers to use is Posner's process of "conceptual exchange" (Posner, Strike, Hewson, & Gertzog, 1982). In this model, four conditions must be in place before a student will engage in "conceptual exchange." First, the student must experience a sense of dissatisfaction with his or her original idea. This occurs primarily when the student finds the original conception inadequate to accommodate some new knowledge. Second, the student must find the new conception intelligible. In other words, the idea should make sense to him or her. Third, the new idea must be plausible or in line with the student's view of the way the world works, and finally, the idea must be fruitful in that the student has good reason to adopt it (Posner, Strike, Hewson, & Gertzog, 1982). Object-based inquiry accommodates these four conditions necessary for conceptual change. This process allows students to investigate their own ideas about a topic under the guidance of a teacher who understands both the misconceptions students hold and the power found in students investigating their own ideas.

We hope that you enjoy discovering the power of using object-based inquiry in your classroom and find encouragement in the growth you will see in your students' reasoning abilities, insights, and ability to make connections.

REFERENCES

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