

# READING AS EXPERIENCE IN INQUIRY

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INQUIRY is fundamental to reading. When a person reads he is gathering and processing information; and this is inquiry. A reader who raises questions, builds hypotheses, reads and processes data, and tests findings to determine validity is actively involved in inquiry. To be able to inquire is a necessary condition for independent research-type reading that results in learning.

A reader who cannot perform as an inquiring reader needs to have all of his reading programmed for him. Material has to be fed to such a reader. Questions have to be raised for him; inferences have to be drawn for him; and he must be told what conclusions should be reached. Such a reader is obviously a totally dependent reader and learner.

Since inquiry is fundamental to reading, the method of teaching reading must be such that inquiry is fostered. When a person tries to promote conceptual changes in another by giving him something to read and showing him how to read it, he is engaged in teaching reading. When a person tries to promote these changes on his own by gathering

and processing information through reading, he is engaged in inquiry.

## **Schemata**

Inquiry is native to the mind. As an infant a child is busy gathering data from his environment in order to conceptualize it (3). When an infant learns that rubber rings may be sucked as well as thrown, pulled at, pegged, and so on, he is internalizing properties in his environment. Such interactions with environment occur long before formal education begins and help a child to form intuitive schemata or some sort of structure system.

Schemata are plastic organizations that adapt and change as man's ability to understand and control his environment increases. As a child grows older he learns to become more systematic in making his conceptual systems correspond to reality. His searching and collecting and processing of data become broader and more complex. His schema becomes more sophisticated and reflects more closely the complexities of the real world. The developmental changes that

occur as schemas are not only generalized but also differentiated and may best be described as a process of assimilation and accommodation (3).

The first of these two basic processes consists of taking in and incorporating what is perceived in terms of what is known and understood at the time. When a child begins to discriminate objects that are to be sucked when he is very hungry, an element of recognition occurs. He has assimilated his perception of the objects in terms of his established schemas related to sucking. As long as events encountered do not differ too sharply from concepts which are known, assimilation occurs without difficulty.

When, though, a child faces an experience that he cannot readily assimilate—a discrepant event—he needs to examine more carefully and perhaps create new schemas. Thus he may have to reshape and reorganize conceptual structures until they fit and account for the new circumstances. This is known as accommodation. It paves the way for conceptual reorganization and the subsequent assimilation of a formerly discrepant event.

Inquiry involves both assimilation and accommodation in complementary roles. The inquirer, faced with a discrepant event, may first attempt to break it down into component parts, to analyze it in terms of variables which he has already conceptualized . . . and use them in finding greater meaning and unity in experience (6, p. 60-61).

### **Inquiry and Directed Reading**

Inquiry being native to the mind and fundamental to reading, particularly critical and creative reading (4), it follows that the processes of assimilation and accommodation operate in both cir-

cumstances. Therefore, a person reading needs to know how to deal with concepts that are readily assimilated and with discrepant events that require accommodation as well as assimilation.

*Directed reading-thinking activities* can be accomplished on a group basis or an individual basis. In both, the process of inquiry can and should be incorporated (5).

In a group-type directed reading-thinking activity, four requirements need to be met. First, the number of children in the group should not exceed a range of eight to twelve. This size will permit each pupil to be an active participant in the activity. Second, the children in the group should have about the same reading ability. Third, all should be required to deal with the same selection at the same time. Fourth, the teacher must direct the activity in such a way that the major responsibility for purposes for reading rests with the children, and the tyranny of a right answer resides in the text. This demands devotion to the belief that inquiry is native to the mind and that children are curious, will inquire, and will be interested if they are permitted to inquire.

In an individual-type directed reading activity, certain requirements have to be met, too. First, even though there may be thirty children in a class, each is required to be on his own. Each pupil operates as an individual. Second, each pupil decides what topic of interest he wants to pursue or read about, and why. Third, he selects his own material and is limited in his choice primarily by the library available. Fourth, the teacher is a resource person and is available to give help and encouragement as needed and as requested. Fifth, what a pupil

does with what he reads and learns is paced largely by the process of assimilation and accommodation required to incorporate the ideas within his conceptual system and by the experience of sharing these attainments with his peers.

*Inquiry* can be accomplished with or without teacher direction. Primarily, though, when the mode of learning is inquiry, the person proceeds on his own. "When the mode of learning is inquiry . . . the process of data gathering, analysis and experimentation is under the control of the learner himself." (6, p. 60). The person is free to reach out in whatever direction he chooses. He decides on the topic of interest he wishes to pursue and how thoroughly he needs to investigate it. He decides what conceptual changes he wishes to accomplish and how discrepant they are. He gathers and selects data and processes the information in whatever sequence is meaningful to him. He programs and paces his own learning and does so in terms of his own cognitive needs as dictated by his style of learning.

It is possible, of course, for one person to shape the concepts of another by programming a series of experiences and engineering a child's conceptual reorganization. This is called teaching. In order to be effective, though, the teacher must be thoroughly acquainted with a learner's existing conceptual structures so that he may start at the level of the learner with an event that is not too discrepant. In addition, he must keep a constant check on the conceptual modifications that are occurring and must do so at every step along the way.

In the preschool years the schemata formed largely represent by-products of a child's attempts to manipulate and

control his environment. Later the data gathering and processing take on a more organized form as he shifts his concern from producing effects to seeing relationships. When he sees his operations as experiments that can be done or undone or replicated, and as tentative and reversible, his inquiry takes on more the character of research. Now he can experiment in a more or less controlled fashion. At the stage where he reaches mental maturity, he is capable of going beyond concrete operations to the point where he can declare and test hypotheses by means of formal logical operations. The older child constructs or invents conceptual models of causality by obtaining the data needed to try out his concepts. He does so by testing and revising and learning how ". . . his manipulations as causes correlate with outcomes as effects" (6, p. 63). The mature mind can bypass even the empirical or concrete operations and can test the validity of an hypothesis logically.

If a child is going to reorganize his conceptual systems by reading, he must be given the opportunity to try out his store of conceptual models by using them to make predictions and design objectives. Then he must be free to gather the data he needs to resolve his predictions or cognitive conflicts. This he must do until he can assimilate what he reads or evolve a conceptual system by restructuring his models and accommodate to the new data.

It should be apparent that the process of inquiry as well as the process of inquiry-type reading has a large creative component. Even so the reader cannot depart from the realm of logic or reason. In turn the problem of how to develop inquiry-type reading in the elementary

school becomes basic to all learning. This is why the process of directed reading-thinking activities—both group-type and individual type—assumes paramount importance. Children need to be taught to read in such a way that their conceptual growth is engineered by them and not by their teachers, and so that they know how to achieve this autonomy by asking questions to gather information. Since inquiry is fundamental to human behavior from its earliest stages of development, reading instruction must be done in a manner which exercises rather than denies this talent.

### **Means of Promoting Inquiry-Type Reading**

A group-type directed reading-thinking activity serves many useful purposes and, in a way, provides training that is fundamental to individual activities. Performing in a group permits an individual to compare his questions, the efficiency of his data processing, and the effectiveness of his validity yardstick with those of others. He can observe at firsthand some of the effects of various strategies of data gathering and processing as used by different children. Henderson (2) noted that comprehension is influenced by the capability of children to set individual purposes for reading, that pupils who set better purposes for reading on their own are likely also to be more successful in attaining purposes supplied by someone else, and that good and poor purpose setters differ in the comprehension of story material even when the material is at their independent reading level.

Whatever story or selection is used, it should be real and meaningful to the

children. At the primary level such materials may be largely of the story type—filled with human interest factors, and with an evolving plot that leads to a plausible and, preferably, unique climax.

Story type material can be used in such a way that problems are posed that puzzle the children. To obtain a discrepant event, the children should be asked to speculate about the story plot and its likely outcome. Speculation can be based on different amounts of information, thus requiring inquiry strategies that are flexible and can be adjusted to the demands posed when little is known or when much is known. For example, pupils may be asked to speculate after seeing only a story title ("A Newspaper Helps," "Stopping an Airplane"); after reading a third of a selection; or a half of a selection; or all except the last page. Greater divergent (creative) responding is invited when the amount of data available is limited. When, however, almost all of the data has been processed, convergent-type thinking is required (1).

The children must be given the freedom to use the data or story facts to speculate as they desire, and as *they* see fit. Teachers must not impose their predictions and must avoid giving their speculations or summations. These conditions allow each child to pursue his own summations as he follows the consequence of ideas, and in the end satisfies his own cognitive needs.

Beginning readers who can read comfortably at a first reader level can be taught to react to story content by using it to speculate about plot direction and plot outcome. They can do this if the plot, its characters and setting, are within their range of experience. The human

factor of people doing things and interacting makes the drama of everyday happenings a ready source of conceptual systems which children can use to speculate and conclude. Their interactions with their environment provide schéma whereby children internalize the properties and events of their environment.

As they grow older and become more mature readers, the children learn to deal with more complex plots and do so in a more sophisticated way. Reading provides an early opportunity for the young minds to learn how to go beyond concrete operations and manipulate ideas and hypotheses through increasingly more logical operations. As a result, through reading they are able to build increasingly more elaborate and accurate schemata which reflect more and more closely the realities and complexities of their real world.

From plots to accounts of events in the social sciences and the humanities is a ready transition. Human interest factors predominate and permit the reshaping and reorganization of conceptual structures until they are understood anew. Truth becomes stranger and as fascinating as fiction as the course of human events provides the opportunity to relate new meaning to old conceptual structures.

Mathematics and the sciences are dealt with in much the same way. The reader deals with the data provided, abstracts relationships, tries out hypotheses, and adjusts his conceptual models by the causality observed and by the operations used.

All this is done in a group situation where one reader-thinker can compare his inquiry performance with that of others. He sees how others deal induc-

tively with a story or an account. He sees new understandings come to light through the forum of discovery-type reading.

Such group-type directed reading-thinking activities can provide the reading-inquiry training needed for the learner to perform through self-directed actions. Then the autonomy of the learner, his interests and tastes and ambitions, can be translated into plans and actions—as problems are posed, materials are identified, answers are sought, and new concepts are developed. The individual reader goes to the library and selects the materials he needs, or produces the data he needs for his conceptual reorganizations. He does not have a group to rely on. Neither does a teacher program his conceptual reorganization by selecting material, explaining data, and demonstrating relationships. He does research type reading by experimenting and gathering his own data, by trying out various combinations of schemata, and by testing each until he has found a proper solution. Of course, the teacher is engaged in teaching reading—research and discovery-type reading—with the universe as the boundary for pupil interests and the library as the source of materials.

In this type of individualized reading instruction, the teacher keeps a constant check, even though the gathering and processing of data are under the control of the learner. In turn, the learner not only programs his own reading in terms of his own cognitive and informational needs of the moment, but also is influenced by whatever sharing he does with the group. A principal feature of individualized reading *instruction*, where the learner is autonomous, is the sharing he

does with and for his classmates. The activity of gathering and processing information is exciting and pleasurable in its own right; but it becomes even more so when pupils are given the opportunity to share their findings with their classmates.

How to organize material and present it to a class in such a way as to be both clear and attention-holding poses a real challenge. But it is just this type of demand for planning and constructing that creates in the learner a sense of power. The group serves as auditor, asking questions, censoring presentations, and seeking clarity. The presentations are either oral or written or both, are illustrated or dramatized—as the occasion demands. The satisfaction derived has immediate consequences. It serves to motivate further reading because it occurs in this kind of inquiry-research type context. Individualized-type directed reading-thinking activities, just like inquiry training, are, borrowing Suchman's words: "a joyous experience of discovery" and "a highly satisfying and stimulating activity."

In conclusion, when inquiry-type reading instruction is the dominant mode of learning, school libraries become the heart of the school's reading program, and basic readers are used as auxiliary training aids. Individualized reading-inquiry training is paralleled and supported by group-type training. Both teaching procedures are essential.

By providing both the climate and the training for reading-inquiry and reading-thinking, the teaching becomes a

motivational force that promotes curiosity and builds up irresistible learning pressures. Pupils are constantly seeking answers. School and classroom libraries are filled with inquiring minds gathering data and satisfying interests. They will find ways to assimilate and accommodate discrepant events because each is being taught how to adapt the reading-learning process to his own cognitive needs.

If a child is going to learn how to read in accord with his own cognitive needs, he must have the opportunity to ask questions, make predictions, and gather and process data. In short, he must be taught to be an inquiring reader. ☞

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