Inquiry as a Method of Implementing Active Learning

Budi Eko Soetjipto

Abstract: Inquiry teaching is a strategy or teaching methodology designed to meet the needs of children at their own developmental level with their understanding of concepts. It also puts children in charge of their own learning and gives them a sense of responsibility for their learning. Moreover, through inquiry teaching, children will be independent learners with their curiosity to know and explore something with guidance of the teacher. Finally, according to the definition, process and goal of inquiry teaching, it is clear that inquiry teaching can be used to implement active learning methods.

Key words: inquiry, active learning.

During the classroom visits at Primary schools in Victoria, Australia in 1996, the writer observed three advantages in the application of inquiry teaching. According to the findings gathered during visits to four primary schools in Victoria, it seems that inquiry teaching is suitable for primary school students, for the following reasons.

Inquiry teaching helps to improve students' impressions and appreciation. When the writer visited to Park Ridge Primary School, he met Mr. E, a teacher in grade 5. He was explaining about Koori Culture. He explained many things about the Koori culture, and also gave a picture of Koori people to the students. Then he asked the students to make a project about Koori people and their culture. While the students were working on the project, the writer tried to explore a student's opinion about Koori people,

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"Do you like Koori people?", "Who is Archi Roach?". He answered the questions very well. Mr. E also explained that he uses many types of media, e.g. library, newspaper, film, slides, museum, etc, so that the students are impressed and appreciate what they see and feel. Besides, he also showed a Koori's painting. I think that it will also strengthen their understanding and appreciation. From my point of view, Indonesian Primary Schools teachers can imitate the ways of Australian Primary School teachers by motivating their students to impress and appreciate their own culture.

Inquiry teaching makes the students busy and active. Another good example of the use of inquiry learning came from Mrs. J, a teacher of third year Trafalgar Primary School. The way she taught her students was interesting because she could motivate the students by encouraging them to explore specific answers about a problem. In that case, she was a good facilitator for her students. In line with the use of resources in inquiry teaching, she used a variety of resources. They were: ruler, body height, body weight, scale and thermometer. In my opinion, those resources were appropriate to support the learning process. At that time, she explained about many different types of measurements so that her students could easily measure some objects. All of her students were active in their learning process. It seemed they all understood what they would do. Some of them were measuring the height and weight, while some others were measuring both the temperature inside and outside of the classroom. In short, they were all very busy and active.

Inquiry teaching can stimulate students' interests and concerns. When I visited Park Ridge, Thomas Mitchell and Essex Heights Primary Schools, I was very impressed that there was an incubator tool in the technology room. Many students could see baby chickens inside. In my opinion this is a simple and cheap tool that can create interest in the reproduction of chickens and I think that primary school teachers in Indonesia can imitate this media to stimulate students' interest in technology areas.

Referring to the findings above, it appears that the inquiry teaching would be suitable for implementing the "active learning method" in the teaching of social education in the primary school in Indonesia. The findings of study will not only help my further understanding and familiarisation with this approach, but also are worth implementing and introducing to Indonesian primary teachers, especially on how to develop active-learning method in social education classes.

THE DEFINITION OF INQUIRY

There are many definitions about the inquiry approach. According to Elliott Seif (in Soetjipto, 1996), inquiry means to know how to find out things and to know how to solve problems. To inquire about something means to seek out information, to be curious, to ask questions, to investigate and to know the skills that will help lead to a resolution of a problem. In a rapidly changing and complex world, children need to learn to solve complex problems and to answer complex questions. This skill requires much practice over time, building from simple problems and simple answers to more complex problems and complex answers.

Inquiry has been used as synonymous for inductive thinking, problem-solving, discovery, and critical thinking (Marsh, 1991:100). Inquiry is a strategy of classroom instruction that requires the learner to use the same intellectual operations that he/she would use if engaged in an independent scientific investigation. Discovery refers to the "aha" aspect, that is, where there is intuitive breakthrough in the analysis of a problem. Inductive thinking emphasizes concrete examples and how students can use these to understand different concepts. Inquiry can involve both inductive and deductive proceszes. Critical thinking is a term commonly used to describe a student's ability to use convergent thinking processes, such as being able to examine the logical aspects of a problem and being able to make pragmatic judgements. Inquiry can contain a lot of divergent thinking elements, such as creative thinking, in addition to convergent thinking elements.

Problem-solving involves students in exploring and critically examining a problem. This involves a student in the tasks of applying critical thinking skills, confronting the problem and using a range of synthesising skills to come up with a solution.

Again, according to Seif, (in Soetjipto, 1996) inquiry includes four important characteristics. First, it includes a questioning approach to learning and an openness to new thoughts and ideas. Second, an inquiry-oriented person has a special kind of patience. Third, inquiry is based an assumption of "idea freedom", an assumption that individuals are allowed and expected to have their own "wonderful ideas". Fourth, inquiry is a process involving growth.

Thus, according to these opinions about the goals of inquiry, it is possible to conclude that in general inquiry is aimed at helping students

develop the intellectual disciplines and skills necessary to raise questions and search out answers by themselves so that they will be independent problem solvers.

THE ADVANTAGES AND DISADVANTAGES OF INQUIRY TEACHING

Inquiry teaching has many advantages. As stated by experts, inquiry teaching is probably most helpful in social studies with the investigation of a problem requiring evidence for knowledge (Fair & Kachaturoff, 1988:65). Through the inquiry approach, students are conditioned to think critically and creatively, and to generate their own conclusions based on observations they themselves collect. In effect, they can become scientist themselves. Inquiry based learning has marvellous implications in any classroom, allowing students to chart their own paths of discovery and investigation through in a class and library experiences can lead to the inculcation of valuable concepts (Fredericks, 1991:5). Hence, a teacher has a crucial role to make the children to be critical (Wright, 1995:13). There were many findings that supported the use of the inquiry teaching. It seemed to me that the application of inquiry teaching has many advantages in practice in almost all areas of discipline such as language, science, social studies, etc. Below are comments from researchers from different areas that support the use of the inquiry teaching.

Barufaldi concludes that inquiry skills, within a strong science content framework, are important if one wishes to develop critical thinking skills and enhance scientific literacy in children (Estes, 1990:686).

Wallington (1995) points out that two main goals of social education are promoting understandings about society and how to participate in it effectively. To achieve these goals, it is suggested to use a guided inquiry approach to develop skills such as questioning, researching, analysing and drawing conclusions.

Sweeney and Foster conclude that students will have a greater interest in investigating the issues. The class will have actively engaged in the process of inquiry and critical thinking (1995:34).

From the three comments above, it can be summarised that the application of the inquiry teaching in practice has many advantages: to develop students' critical thinking skills and enhance scientific literacy, to help

students become scientific themselves, and to encourage students' interest in investigating the issues.

Although inquiry teaching offers a challenging approach to teaching, there are also weaknesses in this approach. This discussion will now focus on the advantages and disadvantages of the inquiry approach. The advantages of inquiry approach are outlined in the five points following. It is economical in its use of knowledge-only knowledge that is relevant to an issue is examined rather than a mass of facts being learnt as an end in itself. It enables students to view content in a more realistic and positive way as they analyse and apply data to the resolution of problems. It is intrinsically very motivating for students-students are self motivated to reflect on certain issues, to search out relevant data and to make decisions that are meaningful to them personally. It enables teacher-student relations to assume a healthier tone as the teacher becomes more a facilitator of learning and less a director of teacher-dominated activities. It provides superior transfer value when compared with other methods. (It is difficult to find unequivocal evidence on this assertion, although it does appear to be likely).

On the other hand, the disadvantages of inquiry approaches are as follows. It takes an inordinate amount of class time and out-of-school time compared with other teaching methods used in the typical school program, with its rigid scheduling of classes. It requires different mental processes, such as analytic and whole-field cognitive sets. It may not be useful for all areas of teaching. It can be professionally hazardous to deal with some inquiry problems, especially controversial issues. Students prefer the traditional chapter (chapter approach). They don't want to be involved in thinking. Involving students in inquiry deludes them into thinking that they can solve all or most societal problems. It is difficult to evaluate using traditional achievement tests. For example, how do you evaluate the thought processes used by a student when undergoing an inquiry program? (Marsh, 1991:100-101).

THE INQUIRY PROCESS

Naylor and Diem (1987:251), state that the process of inquiry consists of the following elements: (1) perceiving and defining a problem, (2) formulating hypotheses, 3) gathering data to test hypotheses, (4) analysing

and evaluating data, (5) using data to confirm or reject hypotheses, (6) formulating a tentative explanation or conclusion.

Perceiving and Defining a Problem

Inquiry allows teacher to take advantage of students' natural curiosity and their desire to seeks explanations for puzzling situations. The process begins when students perceive and identify a problem that needs an explanation. The more interesting the problem situation, the more likely it is that students will want to find an explanation for it (Naylor & Diem, 1987:257).

Developing Hypotheses

After the puzzling situation has been presented, students begin to suggest possible explanations (hypotheses). Once the children have developed adequate interest in the problem, they must be able to risk an "educated guess" about its solution. A brainstorming session in a large-group setting is a common approach. Potential hypotheses are written on the chalkboard, then analysed and discussed, and judgements are made about which hypotheses seem worthy of consideration. Hypothesising may also occur in small-group settings, an approach that provides for greater student involvement (Naylor & Diem, 1987:257-258).

Gathering the Data

After hypotheses have been established, the students gather data to test the hypotheses. The teacher makes a crucial decision. To what extent should students be expected to find the data themselves?

Some educators believe that students should be given total responsibility for gathering all the relevant data themselves. They cite the enhancement of data gathering skills as one of the major advantages of this approach. To gather data on their own, students would need to consider the use of textbooks and other materials found in the room: magazines, newspaper articles, books; in the school or community library; personal interviews; a historical society, and so on. Beyer suggests that teachers supply students with the data they need to test hypotheses. Moreover, he favours placing limited demands on students for actually locating relevant information. He uses the following arguments to support his position: (1)

gathering data is time consuming and is likely to detract from the development of other important inquiry skills; (2) students can become easily overwhelmed by the task of gathering relevant information and experience difficulty in trying to use and interpret it; and (3) some of the kinds of data students need may be inaccessible to them (Naylor & Diem, 1987:259).

Hypotheses Testing

After the data has been gathered and examined, the next stage of inquiry is for students to distinguish between merely plausible explanations and sufficient explanation. On the basis of the evidence they have obtained, students need to identify a defensible conclusions or explanation. Here students must use the thinking skills of analysis, synthesis, and evaluation. They must relate the data to the hypotheses, or reject the hypothesis (or hypotheses) that appears warranted by the evidence examined (Naylor & Diem, 1987: 259-260).

Drawing Tentative Conclusions

The entire inquiry process is not considered complete until the children interpret and evaluate information while developing their solutions so that the one selected is most solidly supported by the evidence (Dewey in Maxim, 1983:166). This process involves a student in making conclusions about his/her inquiry project; they have to directly related to the original questions/hypotheses (Marsh, 1994: 153).

INITIATING INQUIRY

Although the steps of inquiry seem lengthy and hard to implement in practice, they can also be simplified by initiating inquiry. At each stage of inquiry, students are actively involved. Teachers must initiate inquiry by asking these questions.

Firstly, the teacher has to provide a FOCUS QUESTION, then he explains the main idea, and gives some contributing questions. Below is the example of initiating inquiry that is cited from Faichney and Needhams paper presented at the International Social Studies Conference, Nairobi (1994). *Focus question*: how do people use the sea? *Main idea (answer to the focus question)*: The extent of the World's oceans have isolated communities of people and led to exploration of the earth for raw materials

and new regions for settlement. People have traditionally used the sea to obtain their food and in order to transport people and goods from region to another. Contemporary use also involves the development of energy sources and the search for minerals and for recreational activities. *Contributing Questions*: What is the sea like? What do we get from the sea? Why do people live near the sea? How do people use the sea for food, transport, leisure? Which groups of people use the sea? Who helps these people? How do people obtain the resources of the sea? Who keeps the sea safe? *Children's Questions*: Initially a teacher asks - What puzzles you about the sea? about sea food? about boats? Questions to which the children wish to know answers are collated.

This clear process of inquiry comes from work by Faichney and Needham who have undertaken the inquiry process with students in pre-service training at Deakin University. The inquiry process consists of teaching strategies and learning activities that encourage systematic student investigation. It is through this process that the students develop their knowledge as they seek the answer to their questions, and their ability to participate effectively within a variety of social settings as they develop their skills whilst pursuing their investigations. The teacher's role in this process is to facilitate and to guide the ongoing inquiry. Inquiry means that one is finding out information ie. carrying out an investigation.

Faichney and Needham also note, in order to assist elementary children to pursue an inquiry that is based on a series of questions, we need to structure those questions into a useful format. *A focus question* might be used to focus the children's attention on what they are going to find out as a result of their inquiry into this topic. Then for each part of the topic to be investigated, the teacher develop *contributing questions* which will allow the children to explore that aspect of the topic (1994).

Each of these *Contributing Questions* activities will be planned by the teacher to allow the children to investigate that particular aspect of the topic (Faichney, 1996). *Contributing Question* may also be raised by the children themselves. To stimulate the children's questions the teacher might initially asks: What would you like to know about? What puzzles you about?

The questions to which the children might wish to find answer can be collated and then used in one of the following ways: as additions to and/or replacements for the planned *Contributing Questions*, as a means

for individual research, as a compilation of a Question Bank for use in evaluation.

Whatever their source, *Contributing Questions* form the initial point from which the investigation of the topic commences. It is the children's attempts to find an answer to these questions that involves them with the content of the topic which they are investigating. Whilst a teacher may plan a topic around some specific questions, the children will be motivated by the experience of the investigation. This will allow children, in answering the question, to develop an understanding of the organising ideas illustrated by the content (Faichney & Needham, 1994).

Having selected a topic for study, preferably from the school course of study which details the range and sequence of studies planned for the elementary school life of the children to allow for the development of knowledge and skills over seven years of their primary school experience, the first step is to express that topic in the form of a *Focus Question*.

For example, Topic for Year 4: Transport in our Community. *Focus Question*: How are People and Goods moved from place to place? The next step is to develop a *Main Idea* —a written statement— that provides an answer to the Focus Question and thus expresses the knowledge about the social world that the children will develop as a result of their inquiry into the topic. The Main idea in fact identifies and links together the social science concepts illustrated by content of this investigation.

Main Idea: In our community, people use both public and private transport to move from one location to another to obtain employment, goods and services and meet their leisure needs. As well transport is important to produce and distribute goods within and between regions and over distances. An analysis of this Main Idea identifies following social science concepts location, goods and services, needs, production and distribution, which will be illustrated by the content of this study and about which the children will develop a better understanding.

The next step is develop a Flow Chart of the aspects for study in this unit of work. This Flow Chart should include all the possibilities that the planning teacher(s) can identify- use a "Brainstorming Approach" to list these. Having listed all possibilities in terms of specific content, the teacher selects from the possibilities, those aspects which will be of most relevance to the children. Factors like the interest of the children, their needs in terms of both knowledge and skill development, the ability of

the content to illustrate the chosen concepts, together with the availability of resources will need to be considered in making the decisions.

Having decided which aspects of the topic will be explored by the children, the teacher then structures these aspects into investigations that the children can pursue. This is best achieved by framing the aspects in terms of Contributing Questions to which the children are most likely to respond by seeking answers. Some possibilities for such questions are as follows.

Contributing Questions include: What is Private Transport? What is Public Transport? How are goods transported to the shops? How is produce transported from the farm to the factory? How do People get to work? How does our family travel on holidays? Will transport be the same next century?

The final stage is to plan a sequence of activities that allow the children to explore each of the *Contributing Questions*. One way of organising these activities is to use the arrangement suggested by Fraenkel (in Faichney, 1994).

THE TEACHER'S ROLE IN THE INQUIRY TEACHING

There are many opinions about the teacher's role in the inquiry teaching, Kaltsounis, for example, pointed out that in an inquiry-oriented classroom the teacher's role is to manipulate the environment to create appropriate problems and stimulate questions and investigations among children. Instead of being the main source of information for the children the teacher guides them in finding the information for themselves and in addressing it to their questions (Faichney, 1996).

Naylor and Diem argued that the teacher's role is multifaceted; Instead of providing information, he or she is in the role of guide. That role requires: (1) stimulating inquiry and hypothesis development; (2) facilitating the students' search for and acquisition of relevant data; and (3) guiding students in understanding and using the inquiry process.

The main role of the teachers during conducting the inquiry teaching is as a resources person and a facilitator for his/her children. The inquiry approach puts the teacher more in the role of resource person. The class will focus on the topic being investigated, and group support will become more important than the traditional teacher focus (Mathias, 1988).

Other authors like Willen and Mc Kenrick (1989), pointed out that the teacher helps by being a resource, but not by providing answers. The teacher should also provide classroom references such as encyclopedias or magazines. The teacher's role in the community of inquiry is a complex and a changing one: here the teacher is a guide, there a conductor, and perhaps an ordinary contributor on some other occasion (Cam, 1995: 17-18). Clear explanation about the teacher's role in the inquiry teaching comes from *The Social Education Framework P-10* in which it is stated that the teacher's role to encourage independent learning by arousing curiosity, asking open-ended questions, asking questions which emphasise decisions the students need to make, encouraging individual's participation in discussions, keeping discussions relevant to the topic, acting as a challenger, promoting the use of several sources of information, and encouraging students to be creative and speculative in their thinking (Wood, 1987:23).

Teachers can also foster the problem-solving ability of students with teaching strategies which encourage students to consider alternatives, make rational decisions, identify previous stage and plan ahead, work in situation where they gain feedback as they require it, consider how they can effectively communicate what they are doing, and see purpose in what they are learning (Wood,1987:23).

In accordance with the teacher's role in the inquiry teaching method, we can also see how far they are involved in the process of inquiry. Teachers often wonder whether they are using the inquiry approach or not and to what extent. There are various patterns of inquiry teaching. The patterns depend on whether the teacher or the student controls the steps of the inquiry. The chart below lists the steps of problem solving and indicates who directs each step within the various patterns. Birnie and Ryan (1984) provided a continuum of inquiry learning patterns, illustrated in Table 1. (A "T" indicates that the teacher is in control; an "S" shows that the students have control).

In pattern A, the teacher controls all steps except for performing the activity and gathering the data. The teacher formulates even the conclusion because the problem reveals the conclusion. In pattern E, the students do all the steps of inquiry, the students have an opportunity to state the problem, to consider a broader range of hypotheses independently and to apply research methods. It is this pattern of inquiry that develops independent learners. This pattern gives more freedom to children as it allows children

to develop as an independent learner. However, this pattern is probably rare used.

Table 1. A Continuum of Inquiry Learning Patterns

No.	Steps	A	B	C	D	E
1.	Stating the problem	T	T	T	T	S
2.	Formulating the hypotheses	T	T	T	S	S
3.	Developing a working plan	T	T	S	S	S
4.	Performing the activity	S	S	S	S	S
5.	Gathering the data	S	S	S	S	S
6.	Formulating the conclusions	T	S	S	S	S

THE TEACHING RESOURCES FOR THE INQUIRY TEACHING

The availability of teaching resources is important topic in line with the use of the inquiry teaching method. This is an important aspect of the inquiry method because on one hand, teachers should know what kind of materials or resources must be provided, on the other hand what kind of resources can be obtained by students themselves both in the classroom and outside the classroom. In this case, teachers should facilitate the collection of data.

According to Fair and Kachaturoff (1988:68) instructional materials of all kinds should be readily accessible to students at their development level. Teachers should expand their teaching resources to include graphic materials, trade books and reading work, learning kits of relevant materials, maps, reprints, pictures, pamphlets, television programs, video tapes, film strips, films, and guest speakers. Resources and facilitates in the community such as museums, historical buildings, archaeological sites, factories, mines, cemeteries, banks, and concerts can complement textbook material and classroom activities.

Textbooks or literature played very different roles in students' inquiries. They used literature as the central focus of their inquiry, as another reference source, or as part of a related study. When literature was central

to the inquiry, it became the major focus for allowing students to think through their questions and issues. They met to discuss and explore this literature in depth through either whole-class discussions or small-group literature circles on text sets and shared book sets. Sometimes literature was not central to their inquiry, but became part of a larger set of resources they explored. In this case, students used books as references to find specific pieces of information or establish a background context but did not engage in intensive discussion of the issues they contained (Short & Klassen in Crawford et al, 1993:185-187).

From the Fair and Kachaturoff's view about the learning resources, it can be summarised that learning materials can be available both in and outside of the classroom (in the community). Duckworth, cited by Goldhaber, said that the activities that support scientific inquiry must include materials that can be manipulated, transformed and perhaps broken. It must invite open and free dialogue so that ideas and hypotheses can be shared and challenged; it must be supported by a teacher who observes, encourages, guides and attends. The learning environment also must allow ample time for questions and theories to be explored, set aside, rediscovered and expanded (1994:26).

Students should be encouraged to gather their own data from secondary sources, or to collect their own primary data by counting and observing things in their own local area. Questionnaire surveys, traffic counting, cemetery data bases and shopping habits are popular student activities that generate quantitative data. A simple class discussion about issues of relevance to a particular class is often all that is needed to identify an appropriate topic while a topic chosen by the teacher can guide the collection of appropriate quantitative data.

Each of the data sources used in the teaching the social studies, has unique characteristics which make it effective for some instructional purposes and ineffective for others. The most important criteria for deciding which data source to use for a particular lesson is the lesson's objective and the nature of the learning activity. It can be said that no one data source is "perfect" for each learning situation and purpose. Each data source has strengths and weaknesses, and is appropriate for specific learning activities, purposes and goals.

Visual materials, such as pictures, illustrations, and charts, are often used in the social studies to introduce concepts, to reinforce learning, and

to extend understanding. Charts, tables, graphs, and diagrams are powerful learning devices. Graphic images have particular relevance to the social studies teacher's quest to cultivate problem solving skills (DuPlass, 1996:32-38). Pictures can be used to update the content of textbooks. Audio materials such as records, tapes, and radios can be used to enrich the social studies program. Materials which are the combination of sound and pictures, such as film strips, can also be used to enrich social studies learning. Sound films can help students to experience powerful examples of concepts, value dilemmas, and decision-making opportunities.

Television is a salient part of most students' lives. Teachers should help students become more critical viewers of television. Teachers should use television as an instructional medium when it is an effective and feasible alternative. Computers can be used to tutor students, to reinforce skills and concepts, and for simulations and demonstration. Students can also use the computer to manipulate and analyse data.

When a teacher decides which form of material is going to be used and how it is going to be used, the objectives for the lesson should be the major consideration. They should prepare for using an item which is designed to attain these objectives, previewing it, developing questions and activities related to it, and arranging for the delivery of the item.

CONCLUSION

Although the aims of inquiry teaching are to make children independent problem solvers by providing research or investigation skills, my belief is that inquiry teaching more emphasizes on how to make children active in their own learning. I also realize through inquiry teaching, children will be independent learners with their curiosity to know and explore something with guidance of the teacher. Nevertheless, the degree of the use of inquiry teaching will largely depend on children's own development. For example, the steps of inquiry teaching, such as perceiving and defining a problem until drawing conclusions, probably can not be completely done by the children themselves. These steps probably need more teacher's guidance. Moreover, through inquiry teaching, children will be independent learners with their curiosity to know and explore something with guidance of the teacher. Finally, according to the definition, process and goal of inquiry teaching, it is clear that inquiry teaching can be used to implement "active learning methods".

REFERENCE

Birnie, H.H. & Ryan, A. 1984. Inquiry-Discovery Revisited. *Science and Children,* 21 (7): 31-32.

Cam, P. 1995. *Thinking Together: Philosophical Inquiry for the Classroom.* Maryborough, Victoria: Australian Print Group.

DuPlass, J.A. 1996. Charts, Tables, Graphs, and Diagrams: An Approach for Social Studies Teachers. *Social Studies*, January/February, 87 (1): 32-38.

Estes, Y.B. 1990. Break Out: Catch a Wave in Science. *Phi Delta Kappa*, 71 (9): 686-91.

Faichney, G. 1996. *Integrating New Ideas into the Primary Social Studies Program.* Geelong: Deakin University.

Faichney, G.W & Needham, R.L. 1994. *Initiating Inquiry with Pre-service Elementary Teachers.* Paper presented at the Third International Social Studies Conference, Nairobi, Kenya.

Fair, J. & Kachaturoff, G. 1988. Teaching Thinking: Another Try!. *The Social Studies*, 79 (2): 64-69.

Fredericks, A.D. 1991. *Social Studies through Children's Literature: An Integrated Approach.* Englewood, Colorado: Teacher Ideas Press.

Goldhaber, J. 1994. If We Call It Science, then Can We Let the Children? *Childhood Education*, 71 (1): 24-27.

Marsh, C. (Ed.). 1991. *Teaching Social Studies*. Sydney: Prentice Hall of Australia Pty, Ltd.

Marsh, C. (Ed.). 1994. *Teaching Studies of Society and Environment.* Sydney: Prentice Hall of Australia Pty, Ltd.

Mathias, L. 1988. Mathematics, Computer and the Real World. *The Australian Mathematics Teacher,* 44 (4): 2-6.

Naylor, D.T. & Diem, R. 1987. *Elementary and Middle School Social Studies.* New York: Random House, Inc.

Soetjipto, B.E. 1996. *The Use of Inquiry Teaching for Teaching Studies of Society And Environment in A Victorian Primary School.* Unpublished Research Paper. Geelong: Faculty of Education, Deakin University.

Wallington, A. 1995. A Nation through Diversity: A Unit of Work for Junior to Middle Secondary Students. *Ethos*, March 1995, pp. 24-43.

Wood, F. 1987. *The Social Education Framework P-10.* Victoria: Ministry of Education (School Division).

Wright, I. 1995. *Teachers, Critical Thinking and Global.* National Council for the Social Studies 75th Annual Conference, Chicago, November 9-12, 1995.