Metacognition and Philosophical Discussions

Introduction

In this paper I will focus on how discussion and questioning can relate to metacognition. First, I will contrast the discussion method with the lecture method of instruction. Second, I will consider how questions are typically used by teachers and what alternatives we have to questioning, according to J.T. Dillon. Third, I will move beyond Dillon by showing how questioning can be used in a positive and constructive manner in metacognitive training (cf. Raphael and Palinscar). Fourth, I will try to support the assumption that "philosophy" is especially well fitted for instruction that aims at awakening students' awareness of the metacognitive aspects of their thinking. "Philosophy" is neither meant to represent a particular school of philosophy nor the teachings of a particular philosopher, the emphasis is on philosophy as "good thinking in dialogue." This will be done be a thorough introduction to the Philosophy for Children program by Lipman.

The main point of the paper is that, beside reciprocal teaching or metacognitive training in detecting question-answer relationships and in using the appropriate answering strategies, we also have the option of fostering metacognition through whole group discussions.

Discussion as access to inquiry

My starting point is not from research, but from practice and tradition. I am not taking you back to Plato as you might expect, but only to the article, "What is a Discussion?" written by Buchler in 1954.

Buchler claims (p. 4) that we can transmit more quantity in a lecture than in a discussion. What is transmitted is also not as easily assimilated by the student as what is established through personal labor and inquiry during a discussion. He emphasizes that it is not the mere quantity of ideas that is of importance, but the cumulative process of the discussion itself. Such a process can come to a product of inquiry that the students themselves earn and establish. Buchler's concern is with the quality of the discussion, not with how many participate in it. He sees participation as depending on the "wide differences in the emotional makeup" (p. 12) that every group of students exhibits. So, you can have silent members in a discussion group, just like during lectures, but Buchler sees a fundamental difference in that the lecture "cannot reproduce the conditions of actual inquiry" (p. 13). Students have direct access to actual inquiry during a discussion as the dialogue moves forward. The lecturer can dramatize the inquiry, but he cannot give students direct access to inquiry in process. (Neither can meaning be given, inquiry must be done by students and meanings must be found by students themselves.) Beforehand, the lecturer usually knows the final product of the lecture.

Although the situation is different for elementary or secondary teacher from the college lecturer, it is similar in the sense that most frequently it is assumed that the job is to deliver a product (answers), that the teacher already knows or has direct access to. They are not supposed to model the process of how we can reach out to the unknown from what we do know. But that is sometimes the end product of a good discussion. The end product can also clarify exactly what it is that we don't know or what it is that puzzles us and this might very well be something that we had assumed having knowledge of. That is to say, quite frequently it is during discussions that we come to realize flaws in our background information and/or in our arguments. We might just run short of adequate reasons for a position, or realize that our reasons are not good enough when presented with alternative arguments.

Questioning

It is appropriate at this point to give some attention to questioning since it is hard to imagine a thoughtful discussion without some driving questions. J.T. Dillon (1978, 1979, 1981a, 1981b, 1981c, 1982) has done considerable research on the factual side of the issue: How and for what purposes are questions used in classrooms.

Dillon draws the following picture of classroom questioning from numerous studies:

> The picture is of one person in control of the discourse of many. Typically the teacher is found to speak more than all others combined, and the teacher typically speaks in questions. Students speak in answers ... Students rarely speak to one another and rarely ask questions (but always of the teacher) ... Immediately following upon the response the teacher speaks again, noting the answer and putting another question (1981b, p. 51).

There is hardly anything that this picture has in common with the picture that Buchler draws of a good discussion.

Dillon's overall conclusion can be paraphrased as follows: Instead of stimulating students to think for themselves, on their own or together with their classmates, and to express themselves, questions are used to depress their thought and make them shut up! As Dillon sees it, a considerable part of the problem is simply teachers' overuse of questions for purposes that have nothing to do with inquiry (cf. 1982, p. 158 & p. 160). Dillon states his advice to teachers in simple terms: *"If not perplexed, do not ask a question"* (1981b, p. 55).

Ordinarily, students are more inclined to ask questions of their fellow students than of their teachers, but in any case, their classroom-questions are not so much concerned with "inquiry" or "thinking" as with "clarifying ... factual and procedural matters presented to them" (Dillon, 1982, p. 160). According to Dillon we don't need a continuous line of questions to have a thoughtful classroom discussion, instead he suggest the following alternatives to questioning (1979):

First, when a student finishes an answer the teacher can make a *Declarative Statement* instead of bombarding the student(s) with another question. According to Dillon, such statements "declare what is on the teacher's mind as a result of what the student has just said" (1979, p. 218). In other words, the exchange of thoughts in the classroom is not only an exchange of questions and answers, but also a factual description of the grounds that supports our questions.

The second technique falls under *"Declarative Restatements"* (1979, p. 219). Restatements should help both the teacher and the other students to comprehend the contribution of the student that just spoke up.

The third technique is concerned with *"Indirect Questions"* and it "is probably most useful when the sentence truly represents the teacher's thinking" (p. 219). In this state the teacher is wondering to him- or herself, and implicitly Dillon is saying that he should share the wonderment with the student(s).

The fourth technique is classified as *"Imperatives"* and includes such statements as "Tell us more about that" or "Explain why that happens" (1979, p. 220).

The fifth alternative technique is *Student Questions* which he claims are more likely to evoke involvement and participation on behalf of the students.

The final alternative to questioning that Dillon enumerates is *Deliberate Silence.* He talks about this alternative as a "powerful but neglected technique in classroom discussion" (p. 220). He points out that a student might take a pause while reasoning or justifying his argument. In such cases the teacher should, by all means, remain silent.

To me Dillon's alternatives are *dialectical tactics* which reflect a questioning or inquiring state of mind. Evidently, a mere quantity of questions does not guarantee a good discussion. Rather, it is the quality of questions and the considerations that are brought up during a discussion, that is of primary importance.

Metacognitive Reflectiveness

In my opinion, Dillon's approach can be criticized on one main ground. That is, although research has suggested that questions are used negatively, to depress students' thinking and expression, it does not follow that questions cannot be used in a constructive manner. Dillon's advice, 'do not ask a question, unless perplexed,' may be a good rule of thumb applicable where teachers tend to ask questions just to pass the time. One way to move beyond this situation is to train students in asking themselves questions that cannot be answered without them reflecting on their thinking.

One of the differences between ordinary question-answer bombardment, or stimulus-response process, and a reflective use of questions is that in the former case the exchange of information is mostly, if not completely, on a cognitive level. By this, I mean that the questions and answers are a direct output of one's knowledge and/or memory. A question of this kind might be: "How much is 2 + 2?" As stated, the question does not reinforce inquiry, reflection or discussion; students might use metacognitive strategies in answering it or they might not. In the latter case, the question would be brought to a reflective level by asking instead: "How can you figure out what 2 + 2 equals?" Answering this latter question, a student cannot help bringing his thought processes to a metacognitive level. But Flavell (1981, p. 37-8) defines metacognition as "knowledge or cognition that takes as its objects, or regulates any aspect of any cognitive endeavor."

The key aspects of Flavell's definition are twofold: (1) knowledge or awareness of one's cognition, and (2) regulation of one's cognition or thought processes. The question that immediately comes to one's mind is, how can metacognition be taught?

Metacognitive teaching

Raphael's (1982; Raphael and Pearson, 1982) training of children's metacognition can be taken as a primary example here. Raphael instructed students how to detect three basic relationships between questions and answers (1982, pp. 7-9). The first relationship is "text explicit" where a student can find a answer to a question within a single sentence. The regulative strategy is to look: *right there:* at the sentence. The second relationship is "text implicit," the student must search across the text to construct an answer. The strategy is to *think and search* for the answer. The third relationship is "script implicit" which means that the students must move beyond the text itself to their background knowledge in order to construct appropriate answers. The student's strategy is to think of the answer *on my own.*

This approach clearly moves beyond giving up on using questions since they are not used in the best possible manner in current instruction. Raphael's approach should both be applicable on a group instruction basis as on an individual basis where students ask themselves of those questions. Where Raphael's technique falls short is exploring the answers that students come up with in this simple but powerful approach of detecting question-answer relationships.

Reciprocal teaching (Palincsar & Brown, 1984) is another example of an approach that stresses the importance of metacognitive aspects of ordinary classroom teaching and learning. Reciprocal teaching consists basically of four components: questioning for information from text (review); summarizing text; predicting from title and other clues; and clarifying. The goal of these activities is to enable the students to understand and to remember the text content. The authors emphasize that the teacher has to start out modeling this fourfold process step by step. But the idea is that students take this activity gradually over, as they get to "play teachers." Brown and Palincsar cite Vygotsky (1978) as giving psychological support to the idea of "allowing" students to take over responsibilities for leading the reciprocal technique while the ordinary teacher becomes sympathetic and supportive onlooker.

So far reciprocal teaching has only been studied in small reading groups but the results are impressive; for example, quality of students' dialogue and their comprehension has improved. But despite impressive findings, I wonder where the reciprocal teaching can be taken. It can hardly be a long term goal to work only with its four basic features. As the technique is presented its goal is to increase comprehension and memory. The emphasis is on extracting from the text; what is the author trying to tell us? What is in the text? Those are the main aspects that the reciprocal teaching addresses. The underlying assumption seems to be that there is knowledge out there that students need to master, and when that is indeed the case reciprocal teaching certainly seems to be of great value. But the weak spot seems to be that, as presented, the technique is convergent, it is a search for the answer as found in the text. Divergent thinking that opens up different options of interpreting texts are not

emphasized. In short, in my opinion it lacks a more vigorous reasoning and interpretive dimension.

Metacognition and Discussions

After giving the reader the broad definition of metacognition that we cited above, Flavell (1981) goes on and cites various scholars which claim that metacognition plays an important role in the following domains: oral communication of information; oral persuasion; reading comprehension; writing; language acquisition; attention; memory; problem solving; social cognition; and diverse form of self-control and self-instruction. The spectrum is evidently very broad and relates to many aspects of instruction. But this brings us to a different option of teaching metacognition, that is, through discussion. I am not referring to any kind of discussion but to a reflective discussion like the one Buchler describes and Dillon indirectly is concerned with. Consider the following description of a reflective dialogue. Notice how it describes metacognitive thought processes, although not using that very term:

> It is in dialogue, that speakers take up statements that have gone before and develop them: one adds a qualifying condition, another suggests a cause or a result, another negates the whole statement, another reformulates it, and another qualifies one of the objects which it refers to . . . such a dialogue can be synthesized into a complex cognitive structure. Out of many such discussions comes the ability to think unsupported by the other participants in dialogue. (Barnes, 1977)

It would be of most interest to combine Raphael's approach and the reciprocal teaching technique with more of a open discussion approach which emphasizes reasoning and interpretation. In terms of instruction there is more of an explicit structure to the metacognitive techniques, presented here, than to most discussions. It is, however, common to the alternatives presented in this paper to look at the activities of the student as being central to the learning process. Answers cannot be constructed nor discussions pushed forward in inquiry without active involvement of students.

Metacognition and Philosophy

It might not be realistic to expect every lesson to be on a metacognitive level, although every discipline has potentials for such discussions. One discipline, philosophy, seems to be especially well fitted for such discussions since no other discipline comes as close to being thinking about thinking.

The Philosophy for Children program (Lipman, *et al.*, 1980) attempts to foster metacognitive awareness among children. Although metacognition is not sufficient for leading or having a philosophical discussion, it is necessary and an essential component of it. Lipman states that, "since metacognitive acts are essential to intellectual inquiry, for the very nature of inquiry is to be self-corrective" *(The Thinking Skills,* p. 94).

Before proceeding further, I want to introduce Philosophy for Children in more detail.

Novels and Literature

Since the novel *Harry Stottlemeier's Discovery* was first published in 1971, Lipman has written five other novels; *Lisa Suki, Mark, Pixie,* and *Kio and Gus,* each of 77 to 148 pages in length and intended for use in K-12th grade. Each novel is accompanied by a circa 400 page manual. The manuals' names give a good indication of what is at stake; they are, in the same sequence as above: *Philosophical Inquiry, Ethical Inquiry, Writing: How and Why, Social Inquiry, Looking for Meaning, and Wondering at the World.*

Each novel stays away from traditional philosophical terminology, but the puzzlement of our everyday experience is emphasized instead. In the novels, we are provided with alternative examples of how different participants view their experiences and how they make sense out of it. The characters have many different style of thinking with no one style portrayed as the correct one.

Instructional Features of Philosophy for Children

A Philosophy for Children lesson often begins when the class members form a circle and read aloud, by taking turns or by role-reading, a chapter or a piece from one of the novels. After the reading, the teacher usually opens the discussion by asking the class whether any idea interested them, or whether there is something else in the chapter that they would like to talk about. Consequently, a philosophy lesson starts with the children's own experience in a twofold sense: First, the novels are written for children about children at a similar age. Second, the teacher takes the discussion agenda from the children; there are no detailed lesson plans to be followed step-by-step.

Lipman *et al.* (1980), while admitting that the effects of the program are not precisely known, claim that "learning to think philosophically takes place primarily in the process of interpersonal discussion, and the reflection that follows such a discussion" (p. 65). This comes in line with what Vygotsky presents us and Lipman *et al.* (1980) cite him as giving psychological support to their program (p. 23). But there is more to say about the advantages of discussions:

> In particular, it promotes children's awareness of one another's personalities, interests, values, beliefs, and biases. This increased sensitivity is one of the most valuable by-products of classroom communication. Unless children have some insight into the nature of the individuals with whom they share their lives, they are not likely to make sound judgments regarding them (p. 65).

What is at stake here is cooperation which requires listening as well as self-corrective communication. After the discussion opens, the class ideally becomes engaged in student to student dialogue with the teacher participating as one of the class.

The Teacher's Role

"Teachers who can model an endless quest for meaning . . . are the most important ingredient in the philosophy for children program" (Lipman *et al.* 1980, p. 84). Such teachers have partly to improvise their activities as they direct discussions along philosophical lines by the questioning

technique employed, and by bringing up exercises and discussion plans from the manuals where they are appropriate. The discussion plans and exercises are of such nature that they operationalize concepts presented in the novels and thus the students are enabled to see how ideas work. The teacher *does not* bring up exercises if they do not relate to what the students want to discuss. In other words, the reading in the beginning of the lesson and the ideas presented serve as a springboard for discussions of things that matter to students. However, if the students do not catch on, the teacher has to elicit themes through questioning or, at last resort, simply point them out as a member of the classroom community. But by no means is the teacher's role to import answers into the classroom. Addressing the teacher directly, Lipman *et al.* (1980, p. 90) explicitly state: "It is not your role to dictate to children what their philosophies of life should be." In the same place, they advise the teacher to take cues from the novels where children struggle to understand as well as to learn from experience.

Although almost anything can be discussed in a Philosophy for Children classroom, it is far from being the case that it can be discussed in any way whatsoever. It requires both knowledge and skill on the part of the teacher to keep the discussion along thoughtful lines. For example, to be relevant it does matter when, how, and in what context the following questions are being asked:

> What reasons do you have for saying that? Why do you agree (or disagree) on that point? How are you using the term you just used? What do you mean by that expression? Could you clarify that remark? (Lipman, *et al.* 1980, p. 112).

Apart from this "philosophical" list, the program also calls for questions that are directed at communicative interactions, such as: Did all of you hear what was just being said? Can somebody repeat what was just said? Questions of this kind are asked to increase the student-to-student interactions as well as to foster listening skills. Although not highly structured, these questions also have a metacognitive training aspect to them as students have to regulate and monitor their thinking to catch up with them.

Children

Lipman sees children as being intellectually lively and as having a natural curiosity for philosophical ideas such as friendship, truth, beauty, fairness etc. Philosophy and childhood both begin in wonder but children need help with making sense out of their everyday puzzles and wondering. Philosophy is useless for this task if it is reduced to a mere memorization of "who, what, when." "It takes on significance only when children begin to manifest the capacity to think for themselves and to figure out their own answers about life's important issues" (Lipman *et al.* 1980, p. 83). Sense is certainly not made by simply telling or describing to children how things are; the problem is *not* that children don't believe what they are told but the problem is that often what they are being told doesn't have any meaning to them.

> Children do not question the truth of much of what they are told, but they do contend that it is often meaningless to them. It is unlikely that an educational process can work if it fails to take this craving for meaning into account (1985, p. 100; see also Lipman, Sharp, & Oscanyan, 1980, ch. 2).

Needed Research and the Community of Inquiry

The claim is made that in Philosophy for Children classrooms, where the teacher respects the students and their ideas, the classmates increase their respect for one another and themselves (Lipman, *et al,* 1980). They start to distinguish between better and worse reasoning and reasons. This is supposed to take place within a specific classroom context or within a classroom frame of reference, in which teaching and/or learning activities can be understood, just as books provide the context for sentences to be understood. But one of the characteristics of a Philosophy for Children classroom is to deal openly with the question: "Who are we and what are we doing now?" The first part is dealt with by asking questions that have to do with personal identity, such as: "What makes you you? Is it your name? Is it your clothes? Is it your thoughts?" etc. (see Lipman *et al.* 1984, p. 35). The second part is dealt with by asking questions such as: "What makes you say that? How do you know? What do you mean by that?" (see Lipman *et al.* 1984 p. ii and p. 10 and 1980 ch. 7). Thus Philosophy for Children is an attempt to create context for open inquiry where the context itself does not escape scrutiny. Thinking is seen to be interwoven and inspired by the context at hand. This comes in line with Rogoff (1982, p. 149), but she defines context as "a web of relations interwoven to form the fabric of meaning. People create and are part of context (and vice versa), rather than being separate entities influenced by contexts."

When it comes to what Lipman *et al.* call community of inquiry, it comes to unstudied area as neither reasoning tests nor available studies have been designed to focus on this aspect of classroom interactions:

> When children are encouraged to think philosophically, the classroom is converted into a community of inquiry. Such a community is committed to the procedures of inquiry, to responsible search techniques that presuppose an openness to evidence and to reason. *It is assumed that these procedures of the community, when internalized, become the reflected habits of the individual* (p. 45, my *underlining).*

I see this assumption to be very important as we are talking about internalized habits of the individual. It seems to be a worthwhile research task to research this issue as well as to find out for sure whether and how ordinary K-12 teachers create communities of inquiry when working with Philosophy for Children. After looking at the evaluation data on his program Lipman stated:

> Additional evaluation data on three facets of the program would be of great value. It would be desirable to look more closely at the kinds of attitudinal changes that may occur as a result in

participation in the program. More attention also needs to be paid to obtaining in-depth assessment of children's thinking processes, as opposed to merely assessing thinking outcomes. Finally, a great deal of attention needs to be devoted to determining which pedagogical techniques successfully elicit cognitively meaningful dialogue, as contrasted with mere verbalization (1985, p. 106).

Conclusion

When it comes to thinking processes, and pedagogical techniques, my hunch is that Lipman can benefit from the metacognitive training approaches and studies, presented earlier in the paper, just as Philosophy for Children may remind people that emphasize the metacognitive aspects of the curriculum that their approaches need to be pushed further. Neither the metacognitive approaches nor Philosophy for Children present final solutions to classrooms, but all do try to improve human practices.

If we agree that one of school's primary purposes should be to enable students to become reflective citizens, both of facts presented to them, and of their experiences, then the social nature of learning comes to the forefront. This may require a shift from the traditional emphasis within psychology on *the* individual and the characteristics of his or her learning, to learning in groups or classroom communities. If the shift is made, the work of Vygotsky (1962, 1978) offers a fruitful starting point. Vygotsky saw the individual's psychological structures to be an internalization of interpersonal structures. The history of the child's cognitive growth is, according to him, a history of how her or his mind equips itself with the available cultural tools that are actively used, both in interactions with other human beings and with the world itself. Language is the most helpful single factor that enables the child to master the environment and its own behavior, it becomes a "problem-solving tool" (cf. 1978, ch. 1). Language is the primary medium that we have available to express our thoughts. It can be used in many different ways through oral communication, reading or writing. As a monologue or as a dialogue. But in general, we don't pay much attention to it because it is like the air we breathe; we are unconscious of it and we do not protect it nor do we try to improve it until we start to harm ourselves.

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APPENDIX: Review of Research

(This review is similar in most respect as to one done by Lipman, 1985).

Several studies have been done in order to assess the educational significance of Philosophy for Children. They have centered on *Harry Stottlemeier's Discovery* as that novel was the first one to be written in the program and is still a central part of it. All of them come down to positive conclusions in favor of Philosophy for Children. These studies vary greatly in scope and effort as can be seen in the following review.

The first study was done by Lipman and Bierman in 1970, (reported by Lipman in Metaphilosophy, 1976). The study involved 40 fifth graders that were assigned randomly to two groups. Lipman taught *Harry* to the experimental group and the control group was assigned to a social science project. In his teaching "there was no homework, no grades, no written classwork - it was all discussion" (Lipman 1976, p. 33). After nine weeks the experimental group had gained 27 months in mental age compared to the control group and as measured by the California Test of Mental Maturity ($p¼.01$). This study was replicated by Cummings (1980) and again with significant ($p¼.05$) gain on the California Test of Mental Maturity. However, both studies had flaws. For example, although not having any experience in teaching children Lipman was a professional philosopher with many years of teaching experience at the college level. Cummings's teaching was, on the other hand, 50% paper-pencil exercises some of which she designed herself, 40% discussion and 10% lecture (1980, p. 90). The retreat into seatwork was partly because of serious discipline problems that she ran into "from the very first day" (1980, p, 91).

Other studies include: Simmon (1979) found *Harry* to be effective in working with emotionally handicapped students ($n=5$). Higa (1980) did a study in Hawaii involving 12 elementary school classes. Positive impact on reasoning skills were reported but there was no control group involved in the study. Karras (1980) did a study involving 600 afifth and sixth graders and found significant improvements in reasoning. Yeazill (1981) found significant gains ($p¼.01$) in sixth graders reading comprehension in using *Harry* as contrasted with students that did not use *Harry*. Burnes (1981) also reported significant improvement in reading comprehension as well as in reasoning. Reed and Henderson (1981) used two fourth grade classrooms as experimental group, and two as control. They reported significant gains ($p¼.001$) in reasoning for the *Harry* group. Weinstein and Martin (1982) also reported improvement in reasoning skills for students that used *Harry*. Cinquino (1981) used *Harry* with with academically talented fifth graders with positive results.

Three more extensive studies stand out among the research that has been done on Philosophy for Children. The first major study was done in Newark, New Jersey public schools and directed and designed by Hope Haas (1975) of the Institute for Cognitive Studies at Rutgers University. 400 fifth and sixth graders in 16 different classrooms, in two control schools and two experimental ones, were involved in the study. Over ten months the experimental students gained 8 months on the Metropolitan Achievement Test (MAT) in contrast to a 5-month gain of the control students.

A second study was designed and carried out by Dr. Virgina Shipman (1978) at the Educational Testing Service, Princeton, New Jersey. This study was more extensive and took two years (1976 78) at Pompton Lakes and Newark, New Jersey. In brief, in Newark the conclusions gave indication of a carry-over effect from philosophy to other disciplines; in mathematics the experimental gain was 36% larger than control and in reading the experimental gain was 66% larger than control (significance at .0001 and measured by MAT). The Pompton Lakes groups did not show as drastic improvements which was explained by ETS as being

due "to the overflow of program effects into the control group, causing the latter's performance to improve along with that of the experimental group" (Lipman, Sharp, & Oscanyan, 1980, p. 223). It was during the first year of this study that Shipman developed a criterion-referenced formal reasoning test known as Q-3. Later Q-3 became Q-4 and finally it was copyrighted in 1983 as the New Jersey Test of Reasoning Skills. This test has been used to assess improvements in students' thinking (for more details on it, see Morante and Ulesky, 1984).

Lipman reports that as a result of this study in Newark and Pompton Lakes

> the Philosophy for Children program received Title IV-C validation in New Jersey. After a 2-day review of the data by a team of out-of-state educators, the program was given 124 of a possible 126 points for effectiveness and 45 of a possible 45 points for exportability (1985, p. 105).

The most extensive evaluation was done in New Jersey and Pennsylvania in 1980-81 and involved over 3,000 students. Again, Shipman designed and evaluated the experiments. In New Jersey, Shipman found the experimental group's gain of 5.23 to be 80% greater than the 2.91 gain of the control group (reported by Lipman, 1985, p. 106). Of thirty-two classrooms that received philosophy in Pennsylvania, 29 showed significant (p¼.05) improvement 19 of which where significant at the .005 level. For the remaining three classrooms, the improvements ranged between .06 and .10 (Shipman, 1982, also reported by Lipman, 1985). The instrument in both cases, New Jersey and Pennsylvania was the Q-4 test.

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