CHAPTER 5

CRITICAL ENGAGEMENT: EVALUATIVE THINKING

Education is generally focused on achieving certain basic skills, rather than on the potential that might be achieved through the development of thinking and its improvement. As the previous chapter indicated, generative thinking fosters creativity through freedom of expression, experimentation, scaffolding of ideas, and reconstruction of thought. But generative thinking does not exist in a vacuum, and relies on evaluation in order to give it focus. Put another way, critical and creative thinking are interrelated and complementary aspects of thinking. As Richard Paul (1993) points out, if thinking lacks a purpose it becomes aimless, and if it does become useful it is merely by chance that we stumble across it. If we only employ creative thinking in the classroom it has nothing to keep it in check, and it will diverge and is likely to wander off aimlessly. In other words, if we continue to generate new ideas or come up with original ideas, these may go untested. As noted in the previous chapter, all ideas are generated from existing ideas; from the familiar, new ways of thinking come about. New ideas, however, must go through a process of evaluation and judgment in order for us to question what already exists and to see it in new ways. Reconstruction, as we noted previously, requires the use of both critical and creative thinking. Paul (1993) is worth quoting at length here with regards to what I have just said.

> Creative and critical thinking often seem to the untutored to be polar opposite forms of thought, the first based on irrational or unconscious forces, the second on rational and conscious processes, the first undirectable and unteachable, the second directable and teachable. There is some, but very little, truth in this view. The truth in it is that there is no way to generate creative geniuses, nor to get students to generate highly novel ground-breaking ideas, by some known process of systematic instruction. The dimension of 'creativity', in other words, contains unknowns, even mysteries. So does 'criticality' of course. Yet there are ways to teach simultaneously for both creative and critical thinking in a down-to-earth sense of those terms. To do so, however, requires that we focus on these terms in practical everyday contexts, that we keep their central meanings in mind, and that we seek insight into the respect in which they overlap and feed into each other, the respect in which they are inseparable, integrated, and unitary. (pp.101–102)

The relevance of Paul's words to the topic of this chapter is that creative and critical thinking need to be developed simultaneously and not to be seen as separate in practice. However, in order to discuss critical thinking we need to separate the two concepts. But we should bear in mind their interrelatedness.

So how do we become a critical thinker? Marie-France Daniel (2005) identified that becoming a critical thinker occurs in five stages; anecdotal, monological, non-critical, semi-critical, and critical. In her studies she notes that children slip into one of these categories. Conducting an experiment with children in primary school, Daniel mapped the progression of the thinking processes of children from the beginning stages of development when children share anecdotes to eventually engaging in critical thinking in their dialogues. She observed that under careful facilitation children went from having anecdotal exchanges which involved just speaking regarding personal situations through to monological contributions, but did not as yet engage in dialogical exchanges. Daniel viewed the next stage in the progression which she calls non-critical thinking as students respecting differences of opinion, constructing points of view according to peers, and justifying their remarks. They then moved onto the next stage where they become semi-critical thinkers. They began to question peer statements but engagement was not at a level to be cognitively strong enough to alter the perspectives of others. In other words, there was no self-corrective process occurring. Finally, they moved to the next stage to what a Socratic classroom aims to achieve, i.e., they became critical thinkers, which was indicated by both group-correction and self-correction as a way of moving forward. As Daniel put it:

> When pupils not only improve the group's initial perspective, but they also modify it. They are then capable of considering the other as the bearer of divergence and, as such, as a necessary participant to the enrichment of the community. Momentary uncertainty is accepted as being a part of any interesting discussion, and peer criticism is sought after in itself, as a tool to move forward in comprehension. (p.116)

What Daniel is talking about is that the process of group-correction and self-reflection helps to develop criteria in order to understand better the concepts that are crucial to solving the problem at hand. As Lindop (2002) says, a critical thinker is someone who is sensitive to the criteria of critical thinking. He refers to this as syllogistic thinking. Kennedy (1996) concurs with this view, but he also suggests that children can, from an early age, seek to explain things through syllogistic thinking. Like Lipman, who believes that children have a natural ability to wonder, Kennedy thinks that they also have a natural ability to seek explanations. Kennedy uses an example of a two-year old child who encounters a horse for the first time. The child was familiar with dogs, and so proceeded to point to the animal while uttering the word 'doggie'. It is likely that the child had made the assumption that because the animal had four legs (and other similar features) that it too was a dog. The argument can be set out in syllogistic form as follows:

– All dogs have four legs
– That animal has four legs
– Therefore that animal is a dog.

This is not evidence that the child thinks in syllogisms, but rather that the child is making inferences. Although the inference is invalid, it shows that in some kind of way that the child is sensitive to criteria. If Kennedy is correct, then through their

willingness to wonder and explore ideas, children make such connections automatically (pp.6–7).

As with the previous chapter on creative thinking, because we are focusing on the development of thinking and its improvement through Socratic pedagogy, in this chapter I will be concentrating only on the aspects of critical thinking that underpin dialogue. There has been much written on critical thinking in particular stemming from the critical thinking movement and from authors such as Paul (1994), Fisher (1995a; 1995b), Robert Ennis (1993; 1996), and Harvey Siegel (1986; 2004). There is contention over the teaching of critical thinking as skills in isolation. While I acknowledge the significance of critical thinking to good thinking practices, some theorists are sceptical and have voiced their concerns over the promotion of certain approaches to critical thinking. As pointed out previously, most famously is de Bono's criticism of existing models of critical thinking, especially those based on the Socratic Method, for relying on an adversarial model of argument and refutation, especially the kind of logic used which he claims is based on is/is not, true/false, either/or dichotomies. Anecdotal evidence suggests that this kind of attitude to philosophy has meant that some education professionals, including teachers, who are interested in doing philosophy with children have had to resort to calling it by another name; such as introducing it 'in cognito' as a literacy program.[1] Rather than valuing the enhancement of judgment through evaluative thinking, many critics are worried that this may translate outside of the classroom in a negative way by encouraging adversarial behaviour.[2] However, critical thinking should not been seen as adversarial thinking; it should be seen as marked by a readiness to reason, to challenge ideas, and to promote good thinking.

Critical thinking, therefore, has the ability to strengthen children's reasoning abilities and to develop an attitude toward seeking truth. To be a critical thinker is to be what Siegel refers to as having a 'critical spirit', which is best described as a person who has the ability to reason about and question those things around them. It is "the inclination or disposition to think critically on a regular basis in a wide range of consequential circumstances. The spirit cannot be defined by a cluster of skills. It's a way of life" (in Neilson, 1989, p.2). Analogously, it is like putting on a different pair of glasses and seeing things through new lenses that allows the person to uncover fallacies, and bias, and to be reflective and evaluative not only of things presented to him or her, but to self-reflect. It is through such action that the person becomes more thoughtful.

For this chapter our first task, therefore, will be to identify the characteristics or general features of multi-dimensional thinking that are more typical of critical thinking than of creative or caring thinking. We shall see that what is common to these characteristics or central to their meanings is *evaluative thinking*. By evaluative thinking I mean reasoning, analysis, evaluating, valuing and judgment. We shall also explore where evaluative thinking features in each of the models of dialogue to show its practical application.

WHAT IS CRITICAL THINKING?

There is much literature devoted to the development of the critical thinker.[3] Most notably is the author Paul (1993), but also widely recognised are Ennis

(1993; 1996) and Siegel (1986; 2004). While there is not strict consensus on a definition of critical thinking, there is general agreement that it includes reasoning and analysis, argument and formal logic, and that it is both a skill and a disposition. What is significant for philosophical dialogue is that it relies also on creative thinking. Paul's assertion that critical and creative thinking work simultaneously in the development of good thinking and the improvement of it, draws attention to the interplay between convergent and divergent thinking as discussed previously. We have already discussed divergent thinking, so we will now look at the relationship of convergent thinking to critical thinking.

Just as creative thinking has divergent thinking as one of its characteristics, critical thinking could be said to share in the characteristic of convergent thinking. Convergent thinking is thinking that brings together information focused on solving a problem. It is directed towards a conclusion with an emphasis on, but not limited to, searching for truth or finding answers through informed judgments. Concluding could mean arriving at a single correct answer, but it could also mean arriving at different understandings, or dealing with unresolved differences, or accepting that our claims to knowledge are fallible and that truth is provisional requiring an on-going self-correcting process of inquiry. I do not make the connection to convergent thinking to say that all participants in an inquiry will always arrive at the same conclusion, but rather that through critical thinking they can work through agreement and disagreement to come to shared meanings. Critical thinking is largely a rational enterprise with the outcome of knowledge. But this statement needs to be qualified with the understanding that knowledge gained through the process of thinking critically is not treated as a stockpile of inflexible truths awaiting transmission, but rather that all knowledge is in principle provisional and subject to further critical thinking.

Critical thinking is foremost concerned with finding criteria that will allow us to find shared meanings. Cam (2006) describes criteria as decisive reason that we appeal to in making judgments or decisions. Criteria are the tools that need to be examined or referred to in order to come to reasoned agreement through deliberation in dialogue. He uses the following examples.

> In employment, for example, applicants for a position are evaluated against a set of criteria, which are the considerations we appeal to in ranking them in making an appointment. If someone were to dispute a decision, properly speaking that could only be because they thought the stated criteria were not adhered to or because they disagreed with the choice or relative weighting of the criteria. When such disputes arise, we attempt to justify (or sometimes revise) our judgements by reference to the criteria, or to justify or revise the criteria themselves. (p.75)

Criteria enable convergence because there must be agreement on such things as necessary and sufficient conditions, or on whether or not certainty or reliability is required. Moreover, agreed upon criteria necessitates a certain level of procedural consensus, which in turn relies on rigorous processes. No more is this emphasis on convergent thinking evident than in Nelson's Socratic Dialogue, which relies

heavily on his philosophical method which he calls regressive abstraction. Nelson (1965) describes the process in the following two passages.

> The function to be performed by the philosophical method is nothing other than making secure the contemplated regress to principles, for without the guidance of method, such a regress would be merely a leap in the dark and would leave us where we were before—prey to the arbitrary. (pp.8–9)

and

> The regressive method of abstraction, which serves to disclose philosophical principles, produces no new knowledge either of facts or of laws. It merely utilizes reflection to transform into clear concepts what reposed in our reason as an original possession and made itself obscurely heard in every individual judgment. (p.10)

What Nelson is talking about here is the development and employment of reasoned judgments through convergent thinking. The metaphor of the hourglass depicts this well. We move from a position of divergent thinking to that of convergent thinking through reasoning, analysing, evaluating, valuing and judgment. This convergence is represented by the narrow waist of the hourglass. Paul's (1994) description of narrow sense logic is also useful here. Simply put, convergence as represented by the hourglass is the drawing of conclusions on the basis of reasons and the principles that apply to the assessment of that process (p.105).

I will have more to say on Nelson's Socratic Dialogue later in this chapter. In this part we will identify the characteristics that are common to most conceptions of critical thinking. We will deal with conceptual exploration which is concerned with thinking categorically. We make conceptual connections through distinction making, criteria making, and categorical thinking which involves classification and taxonomy. We will look at reasoning and its relationship to formal and informal logic. Fallacious reasoning is addressed in terms of evaluating validity and soundness of argument.

Conceptual Exploration

Although critical thinking requires more than the application of thinking tools, in order to think effectively we need to understand how to use these tools and how to use them effectively. Conceptual exploration is an essential tool for the critical thinker. Conceptual exploration relies on categorical thinking, which is primarily a way of making conceptual connections through distinction making, finding and testing criteria, and classification or taxonomy.

Without concepts, knowledge and understanding is not possible. This is because humans need language to communicate and language is underpinned by concepts. But not only do concepts underpin language they inform perception and action (Cam, 1995, p.66). Concepts are general ideas derived or inferred from specific instances or occurrences, and as such are central to the way we understand and make sense of the world. Philosophical concepts, which are inherently contestable and problematic, are embedded in all disciplines. Disciplinary knowledge then

flows on to curriculum in the form of syllabus documents for the key learning areas. By understanding how to develop and analyse concepts students learn to question the meaning of seemingly familiar concepts, and thus clarify or change their perceptions, which in turn informs their behaviour.

One way in which we explore concepts is to make distinctions. Distinction-making is discriminating between two or more things that are similar in significant ways but within that similarity display significantly different characteristics. We make distinctions for certain purposes, usually so we can make sense of our world in terms of being able to distinguish between things for the purpose of communicating. Distinction-making is the most common thing that we do, not just in inquiry but in everyday life. However, it is one thing to make distinctions, but it is another thing to understand how distinction-making works and why we make distinctions at all. For example, we make distinctions between different animals; for example, horses and dogs. Kennedy's example highlights the child's initial attempt to make a distinction between one kind of animal, a dog, and other animals, albeit the child mistakenly identified what was actually a horse as a dog. But this could simply have been a matter of the child having insufficient criteria. The child required precise criteria to make the correct distinction.

Criteria are the standards, measures, or expectations used in making an evaluation. Criteria offer decisive reasons that we can appeal to when making evaluations and judgments (Cam, 2006, p.75). Thus criteria are in themselves evaluative. Let's take our example of the dog and horse. What the child is doing is appealing, albeit erroneously, to criteria. One criterion for an animal being a dog is that it has four legs, but so too has a horse. In order to make a further distinction more criteria are needed to distinguish between the two kinds of animals with four legs. As children learn to apply criteria they come to understand the kinds of criteria required for making a judgment or reaching a decision. In the case of the young child, she has yet to learn the difference between necessary and sufficient conditions with regards to something failing to satisfy criteria. One of the aims of critical thinking is to draw out the implicit criteria used in making a judgment, and to examine them and knowingly employ them in ways that make us better informed about our judgments.

Classification or taxonomy provides another way of thinking about how we divide things in order to differentiate characteristic definitions. One way to do this is to make dichotomous divisions. For example we can divide animals into different categories—those that have four legs and those that do not. Under the category of animals with four legs we would include horses and dogs. But we can also make further divisions and sub-divisions. For example, dog can be further classified into breeds: Cocker Spaniel, Maltese Terrier, and Labrador. Whatever the category, it entails differentiating characteristics based on criteria.

Reasoning: Formal and Informal Logic

While Socrates' dialogues were reliant on the production of logical arguments, formal logic as a discipline was not recognised until Aristotle who assigned certain rules to arguments. Argument construction and its development since Aristotle had

an emphasis on validity and soundness. Critical thinking is sometimes reduced to mere logic, but this is a very narrow use of the term. Preoccupation with formal logic reduces critical thinking to simply a skill. Nevertheless, logic, both formal and informal, is essential to critical thinking, and reasoning is its subject matter.

Reasoning is the cognitive process of looking for reasons for beliefs, conclusions, actions or feelings. Humans have the ability to engage in reasoning about their own reasoning using introspection. We engage in reasoning in everyday life through making connections. For example, we can say that if it is wet outside, either it rained or someone has watered the grass. It follows from the premise that if it is wet outside that either of these events (or others) could be considered possible causes. To infer correctly we need more information. There are two main kinds of reasoning: inductive and deductive reasoning. Without going into details lest we stray from the topic, both inductive and deductive reasoning are concerned with making correct inferences. Correct inferences could be said to be those that follow the dictates of logic, and have been tested for validity, soundness or strength. Inferences that are incorrect fall into the category of fallacious reasoning.

Formal logic can be used as a way of understanding how to make correct inferences. We use rules as criteria that dictate how we come to conclusions. There are a number of principles that we can follow to make deductions. These are represented often in syllogistic form and may involve symbols or formula. Informal logic, on the other hand, is an attempt to develop non-formal standards, criteria, and procedures for analysis, evaluation, and construction of argumentation to improve everyday reasoning. Informal logic has closer ties, than has formal logic, to the goals of education generally and to critical thinking, which is to improve public reasoning by developing social and intellectual capacities and dispositions necessary for active citizenship. Emphasis on inference and argumentation means that informal logic must rely on formal methods; that is, the rules of logic play an important role in informal logic also. It is the emphasis on natural language that distinguishes the two kinds of logic, and is what makes informal logic more effective as a method for teaching critical thinking.

The differences between formal and informal logic notwithstanding, they are both applicable to Paul's narrow sense of logic and reasoning as they are concerned with procedures for narrowing thoughts down rather than engaging in thinking that is divergent. Recall in the previous chapter that we drew the analogy between logic and reasoning and the process of flying a plane. The narrow sense logic and reasoning does involve using criteria to evaluate arguments, which is analogous to applying the brakes to balance the acceleration when flying a plane.

Fallacious Reasoning

Because critical thinking deals with agreement and disagreement, it has a preoccupation with argumentation, which requires paying attention to the validity and soundness of the reasoning behind the assertions made. To judge an argument as valid requires paying attention to the form of the argument. When a component

of an argument is demonstrably flawed in terms of its own logic or form, either formal or informal, we call this fallacious reasoning. In deductive arguments where the conclusion follows with certainty from the premises, validity is derived from its form. Take our earlier example, the child's reasoning came about from the following *invalid* deductive form.

– All dogs have four legs
– That animal has four legs
– Therefore that animal is a dog.

This kind of reasoning, although understandable for a two-year old, is, nonetheless, faulty. The child has only limited criteria and thus when she applies her reasoning she judges what is actually a horse to be a dog.

Informal fallacy, on the other hand, is any other invalid kind of reasoning where the flaw is not in the form of the argument. Informal fallacies are numerous, but it is not important to address each one of them here. We can extrapolate that an informal fallacy does not provide sufficiently good grounds for its conclusion, employs unwarranted, unaccepted, unproven or incorrect premises, and ignores or overlooks relevant information. When we engage in dialogue we must be careful about making correct inferences to avoid falling into the trap of fallacious reasoning.

EVALUATIVE THINKING: A WAY OF THINKING CRITICALLY

Let me spend a few moments to sum up what I have said so far about critical thinking. Whereas in the previous chapter the focus was on the generation, development and extension of ideas, in this chapter it was on the process of evaluating ideas. To summarise, critical thinking is concerned with (1) concept exploration, (2) reasoning in both formal and informal logic, and (3) fallacious reasoning. What is central to critical thinking is the development of criteria and its application to conceptual analysis as well as reasoning and logic. Now that we have identified the characteristics or general features of multi-dimensional thinking that are typical of critical thinking, in this part we shall see that what is common to these characteristics or central to their meanings is *evaluative thinking*. By evaluative thinking I mean the development, application and evaluation of criteria. Many books have been written on critical thinking, but one author who is widely accessed by classroom teachers, is Benjamin Bloom. Bloom's Taxonomy is divided into three categories with regards to the way people learn. One of these, which speaks directly to the aims of critical thinking, is the cognitive domain which emphasises intellectual outcomes. The cognitive domain is divided into further categories with evaluation at the apex of the structure (in Fisher 1995b). This taxonomy is particularly helpful to our understanding of evaluative thinking. Bloom takes evaluation to be the ability to judge, based on definite criteria, the value of something for a given purpose. Understanding is at a meta-cognitive level because the process of evaluation required existing knowledge, the skills of comprehension, application, analysis, and synthesis. Evaluation also includes value

judgments, also based on clearly defined criteria. Evaluative thinking, described in this way, is thinking as a kind of reconstruction.

Evaluative thinking concentrates on thinking that allows us to reconsider or evaluate knowledge that we take for granted, essentially breaking down the assumptions that may have informed that knowledge in the first place (a process of elenchus). Recall that reconstruction occurs through generative thinking, from the seeds of wonder that create opportunities for making the familiar strange, and consequently to generate, expand, and develop ideas. Reconstruction, however, also relies on evaluative thinking in order to break down commonly held assumptions and to make reasoned judgments about the ideas that have been generated. Evaluative thinking uses information to make judgments, which also includes using this information to make changes and improvements. In summary, we can say that evaluative thinking is comprised of five interrelated components: (1) reasoning, (2) analysis, (3) evaluation, (4) valuing, and (5) judgment.

To reiterate, reasoning is a cognitive process of drawing a conclusion from a set of premises. Evaluative reasoning focuses on what makes reasoning efficient or inefficient, appropriate or inappropriate, good or bad. Going back to our example, the child encounters an animal, and understands it to be a dog on the basis that it shares in those features from previous, but limited, encounters with dogs. What the child is doing is drawing a conclusion by inferring from previous encounters with dogs, which requires being sensitive to criteria. For the child, what we know to actually be a horse was evaluated as fulfilling such criteria. For a two year old child this would be considered age appropriate reasoning, but the inference itself is not an example of good reasoning. To judge what is good or bad reasoning relies on analysis.

Analysis is the process of breaking a concept down into simpler parts so that its logical structure is revealed. When it comes to testing taken-for-granted knowledge, we must rely on the examination of assumptions as well as the examination of concepts and meanings. This process of examination requires a level of doubt. Let us revisit from Chapter 2 Lipman's (2004) assertions.

> It was doubt that caused us to reflect, to inquire. It was doubt that compelled our attitude to switch from an uncritical one to a critical one. It was doubt that forced us to begin thinking imaginatively, creatively, productively, so as to come up with a hypothesis of what could be done to make our doubt subside. Eventually, with the cessation of doubt, we could relax, secure in the knowledge that our underlying beliefs were once again working well, and were carrying the weight we'd imposed on them. (pp.3–4)

The analysis that comes from breaking down taken-for-granted knowledge can give rise to new ways of looking at things. In the Socratic process this is where the elenchus features; that is, ideas are broken down through a process of doubt, analysis and evaluation.

Recall our discussion on divergent thinking with regards to generative thinking. Evaluative thinking has its own counterpart, convergent thinking. Unlike divergent thinking, which is expansive, convergent thinking is systematic reasoning that

focuses on arriving at an answer through logical inquiry. This includes inductive and deductive reasoning. Convergent thinking is regressive insofar as it seeks to narrow down the process of inquiry to finding definitions, applying criteria, and testing for validity, soundness, and strength of argument. That is to say, convergent thinking is generally concerned with evaluation. The hourglass of Socratic Dialogue depicts this process well, whereby ideas and concepts are narrowed down through a continual process of evaluation until all ideas have converged and there is an agreement. However, even within the narrow confines of the hourglass, divergent thinking is not completely absent, as the testing of definitions requires the use of examples and counterexamples, which is a generative process. For example, were an older child come to the same conclusions as the two year old child, we might ask them to think of other instances of animals with four legs that are not dogs, thus asking them to use their imagination in order to find one case that will challenge their own conclusions, in order to examine their criteria and knowingly employ them.

Evaluation requires that we exercise judgment, but in order to do so we must have an awareness of our own position and the assumptions that underpin them. Our assumptions influence the beliefs that we hold dear and the direction of our arguments, and therefore it is crucial that they should also be examined critically (Bohm, 1996). The way we think is influenced by multiple factors, such as parents, friends, formal schooling, religion, and the media. Take this story of a taxi driver who picks up a journalist following the federal election campaign.

> The journalist, ever ready to test the local wisdom on the political story he was pursuing, asked the cabbie how he was going to vote in the forthcoming election. The cabbie was forthright: 'I'm a conservative voter and my father before me was a conservative and his father before him was a conservative, but I have decided the time has come when a man must *put aside his principles and do what is right!*' (Preston, 1997, p.1)

Despite his confusion over moral terms, what the taxi driver was trying to say is that he was reconsidering his moral point of view, and by implication examining his assumptions. Examining assumptions is a key aspect of valuing. Pekarsky (1993) discusses the critical nature of the Socratic Method and contends that by asking questions and being critical of one another, we can break down the assumptions that underpin what we think we know. It is only when we come from a place of Socratic ignorance that we can begin to come to renewed understandings. The notion of Socratic ignorance is vital to the process of evaluative thinking. Shedding assumptions in order to become ignorant about the topic being discussed allows for a process of inquiry to 'find out' by 'thinking through' our reasons. This is the starting point for renewed and reconstructing thinking because we seek to not only examine the arguments of others but to examine our own assumptions about beliefs that were once believed as fact (Reich, 1998). This process requires valuing; an open-mindedness to genuinely weigh-up alternatives in order to cultivate a balanced viewpoint.

The process of evaluative thinking described so far requires participants in a dialogue to make judgments at every stage of the inquiry. Judgment allows us to exercise thoughtfulness when it comes to making decisions. According to Nelson (1949), judgment is guided by principles of logic and is sensitive to criteria, but it also requires independent thinking. Bohm (1996), on the other hand, sees judgment as a source of self-reflection that allows for holistic thinking, to dig deeper into our assumptions and to recognise the interplay between the particular (fragmented) and the universal (cohesion). Lipman (2004) acknowledges the highly complex relationship between reasoning and judgment with regards to cultivating reasonableness. Making judgments means assessing matters within a framework of creative, critical and caring thinking. In order to strengthen judgments in students, teachers "must encourage the three forms of thinking and their convergence" (p.276). Judgment, it seems, requires a level of independent thought, yet it is interdependent as it arises out of the reasoning process. Harold Brown (1988) sums this up as: "judgement is the ability to evaluate a situation, assess evidence, and come to a reasonable decision without following rules" (p.129).

What seems to be common to the thought of all these writers is that judgment is not separate to reasoning, yet it is not restricted to formal judgments only, meaning it is not simply the end product of a formal reasoning process. In other words, judgment is not simply a matter of following formal procedures of logic. Lipman sums this view up aptly.

> The reasonableness we want to cultivate in students is, to be sure, the result of a combination of reasoning and judgment, but the relationship between the two is highly complex. Probably—we are not quite sure how—there is a kind of osmosis by means of which they flow into each other, so that at least some judgment informs all reasonings and at least some reasoning informs all judgments. Or, as Santayana might have put it, all judgments have a kernel of reasoning and all reasonings have judgments as their natural fruition. (p.274)

For Harvey Siegel (1986) what draws all these elements together is reflection. He argues that reflection is at the very heart of judgment because there is a level of thoughtfulness inherent in thinking things through.

> By encouraging critical thinking, then, we teach the student what we think is right but we encourage the student to scrutinize our reasons and judge independently the rightness of our claims. In this way the student becomes a competent judge; more important for the present point, the student becomes an independent judge. That is, the student makes her own judgments regarding the appropriateness of alternative beliefs, courses of action, and attitudes. (n.p)

It seems that Siegel too thinks there is a reciprocal relationship between thinking things through, which in turn allows for autonomous thinking.

Evaluative thinking, which includes reasoning, analysis, evaluation and valuing leads to the making of better judgments, but at the same time the judgments that need to be made at each stage of the process create independent

thought for the making of better judgments overall. This brings attention to a distinction made by Siegel (2004) between rational judgment that comes out of rational procedures (reasoning) and irrational judgment (based on evaluating evidence and claims). When couched within a framework of multi-dimensional thinking, judgment need not be expressed in terms of rational and irrational, but rather as an interplay between generative judgments (creative insight) and evaluative judgments (reasoned judgments), and as we shall see in the next chapter, connective judgments (contextual considerations). But in relation to evaluative thinking, judgment requires the consideration of the rules of logic and sensitivity to criteria, as well as relying on our own ability to assess a situation. We can conclude that evaluative thinking in dialogue requires judgment as well as cultivates judgment.

EVALUATIVE THINKING IN DIALOGUE

Let us now explore where evaluative thinking features in each of the models of dialogue to show how it would look in practice. Given that we have identified the characteristics of evaluative thinking, let us see where evaluative thinking features in classroom practice to understand how it will further inform our framework for Socratic pedagogy. We will look firstly at Socratic Dialogue with its significant focus on evaluative thinking through the regressive method represented by the hourglass. Coming to consensus in the dialogue requires convergence, i.e., logic and reasoning and conceptual exploration. Next, we will explore the Community of Inquiry, which emphasises evaluative thinking within a framework of multi-dimensional thinking. Finally, we shall turn to Bohmian Dialogue, in which concentration on evaluative thinking is on the process of breaking-down assumptions and self-reflection rather than in the rules of logic.

Socratic Dialogue

The use of the hourglass as representative of regressive abstraction illustrates its role in the process of Socratic Dialogue; that is, coming to consensus about a definition or conclusion and the application of that definition or conclusion to the wider context of the initial question or stimulus. The various steps in the method of Socratic Dialogue bring participants through a process of narrowing down and applying criteria. It is primarily evaluative because it demands standards and sensitivity to criteria for the purposes of applying them back to the initial question and the concrete example arising from it. That is to say, regressive abstraction is evaluative because it requires critical rigor as criteria are constructed, applied and evaluated. This process forces participants to be precise in their thinking. The characteristics of evaluative thinking are displayed by the hourglass which epitomises how participants progress through the dialogue through a process of narrowing down to concise statements. It should, however, be noted that Nelson's model of dialogue also enlists generative and connective thinking. It employs divergent thinking within the narrow confines of its structure, which is primarily

focused on convergence until participants come to a shared understanding of meaning. Nevertheless, it is evaluative insofar as convergent thinking is given priority in terms of the stages of the dialogue. Boele (1998) argues that the rigor required by the process of narrowing down to consensus is where the dialogue gains its depth. If participants arrive at definitions, then they will all have come to agreement based on a common understanding.

Consensus in Socratic Dialogue is a way of enhancing and developing students' skills of evaluative thinking because it requires students to be more critical of their own reasoning, to be precise about what they are saying, and to be self-reflective, but also to be critical of other arguments (Heckmann, 2004). Because students must come to agreement, the first aspect is that they must understand each other clearly (Kessels, 2001). Inquiry is contained within the structure of an hourglass-like flow of dialogue, which is somewhat different to Lipman's idea of letting the argument lead which is still governed by evaluative thinking, but balanced with generative thinking, insofar as there is more room for expanding on ideas in relation to the initial stimulus and the questions and agenda that flowed from it. In a Socratic Dialogue, the structure of dialogue is itself a rigorous facilitator and students must be focused on finding criteria for a definition, or core statement. Socratic Dialogue clearly fits under Paul's category of narrow-sense logic.

It should not be forgotten that Nelson (1965) came from the tradition of critical philosophy. His thinking was that philosophy should be conducted by examining one's own assumptions and being rigorous in argument. Seen in this light, Socratic Dialogue is an exemplar of cultivating evaluative thinking in the classroom. But this statement should be qualified with the rejoinder that Socratic Dialogue fails to position evaluative thinking within the broader context of inquiry and the wider aims of educational theory and practice. Lipman's Community of Inquiry, with its emphasis on multi-dimensional thinking, offers a larger context within which the evaluative principles of Socratic Dialogue could be adopted. But as we will see in the next chapter, connective thinking cannot be ignored if what we seek is a Socratic pedagogy which balances the characteristics of the three modes of multi-dimensional thinking.

The Community of Inquiry

Lipman's model of the Community of Inquiry sits within a broader framework of multi-dimensional inquiry that balances the generative and evaluative dimensions of dialogue. Using Paul's terminology, it employs both the narrow-sense and broad-sense of reasoning and logic. Participants in the dialogue creatively produce and critically assess what is produced in every step of the inquiry. To translate Dewey's pedagogy into an explicit model for philosophical inquiry in the school classroom, Lipman and his colleagues developed an extensive series of curriculum materials. These curriculum materials, which include a series of narratives and teaching manuals, were intended to make explicit the pedagogy of the Community of Inquiry through Philosophy for Children.[4] Most notable in terms of its relevance to evaluative thinking is *Harry Stottlemeir's Discovery* (1974) which concentrates on

reasoning and logic. Since the initial publication of these materials there has been a wealth of literature aimed at both theory and practice, including classroom resources and instructional books on thinking tools for inquiry.[5] However, as is the case of most educational programs, teachers do not always come to them via a theoretical understanding or from extensive immersion in the study of the principles underpinning the practice. Unlike Socratic Dialogue which focuses on a specific aspect of inquiry and limited to a series of successive logical steps on how to apply rigorous thinking, the logic embedded within the pedagogy of the Community of Inquiry is not always explicit. It requires a broader understanding of the context within which philosophical inquiry generally takes place and where it is situated in classroom practice. What I propose is that the rigor of philosophical inquiry demanded by Lipman himself be developed by concentrating on evaluative thinking through the principles inherent in the method and pedagogy of Socratic Dialogue.

In order to follow the Socratic maxim inherent in the Community of Inquiry of following the argument where it leads, evaluative thinking must be applied to every step of the dialogue. I repeat that this is not to the neglect of generative thinking but to work in concert with it, to achieve a balance between the creative and the critical. This is important, for attention to generative thinking without 'putting on the brakes' of evaluative thinking is likely to result in poor reasoning and judgment, where students are not sensitive to criteria or not able to identify fallacious reasoning. But evaluative thinking also has another role to play in the Community of Inquiry, i.e., as a kind of self and peer reflection and self-correction at the closure of a dialogue session. Students learn to reflect on and assess the thinking going on in the group, by appealing to criteria for the inquiry skills, reasoning and conceptual skills, and interactive patterns. The self-reflective component works in conjunction with self-correction, which is essential for learning as reconstruction, especially the social aspects of reconstruction, such as making ethical connections and the development of dispositions. With the addition of critically reflecting on their thinking at the end of the dialogue, opportunities are created for students to develop an awareness of how they think together. As we shall see in the next chapter, this can be assisted by Bohm's principle of attentive awareness which is primarily a process for connecting the evaluative and generative aspects with the communal aspects of dialogue.

Bohmian Dialogue

Bohmian Dialogue offers a different kind of evaluative thinking than the other models of dialogue, but which is, nonetheless, significant to Socratic pedagogy. While there is a level of critical reflection required in Community of Inquiry and Socratic Dialogue, it is different to the continual reflection that is required in Bohm's approach to dialogue. Previously we looked at Bohmian Dialogue as the process of the group holding a mirror up to themselves and their own thoughts to gain meaning. The process is genuinely evaluative insofar as students must question their own assumptions. Bohmian Dialogue may not appear on the surface to be Socratic, but Bohm's emphasis on thinking as a system is important for a

working understanding of multi-dimensional thinking that is inherent in Socratic pedagogy. The notion of an awakened awareness (discussed in the next chapter) plays large in the dialogue as an evaluative method for self and group reflection; it is reflection through suspending beliefs and examining assumptions. Even before participants contribute to the dialogue, they must go through a thoughtful process of understanding how their opinion or viewpoint has been formed, whether or not those opinions are based on assumptions, unquestioned beliefs or taken-for-granted knowledge. It is curious then that Bohm does not attribute his model to the Socratic tradition, especially since he was not unfamiliar with philosophy. For it is Bohm's attention to connecting community and thought as a system that makes sense of the elenchus and the aporia, by placing the emphasis back on Socratic ignorance as a starting point for an on-going inquiry. Bohm has a lot more to contribute to the nature of thinking and reflective thought, but it is suffice to say at this point that reflection is a necessary component for the cultivation of evaluative thinking.

WHERE ARE WE NOW?

Let us review where we are at this moment before moving to the next chapter. In Chapter 4 we observed that generative thinking, which is the pulse of creative thinking, is concerned with the generation, development and extension of ideas that comes out of wonder. But what have we said in this chapter about critical thinking? There are five characteristics: (1) reasoning, (2) analysis, (3) evaluation, (4) valuing, and (5) judgment that are common to critical thinking. Evaluative thinking is central to the meaning of these five characteristics. Therefore, evaluative thinking is necessary for effective critical thinking. We also identified where evaluative thinking fits into a multi-dimensional framework for Socratic pedagogy by demonstrating how it can be applied to each of the models of dialogue in order to gain a better understanding of its practical application.

We can extrapolate from the analysis in this chapter that evaluative thinking, as a form of narrow sense logic in relation to multi-dimensional thinking, is best described by Nelson's model of dialogue. Socratic Dialogue, which embeds the principle of self-reflection and self-correction as ideas are tested and reflected upon in order to come to some shared understandings, represented by the figure of the hourglass, makes an important contribution to the development of evaluative thinking. This, in turn, is important for the framework for Socratic pedagogy. It is suffice to say that by recognising evaluative thinking as the pulse of critical thinking what we are doing is showing both in theory and in practice what teachers will need to concentrate on when it comes to classroom practice. Teachers should keep in mind Nelson's idea of regressive abstraction because it requires bearing in mind the necessity of being sensitive to criteria to evaluate thinking. Evaluative thinking should be viewed in this way as a disposition and not simply a set of skills to be learnt. Teachers should therefore place an equal emphasis on evaluative thinking, that is, the regressive nature of dialogue, as well as on generative thinking, being the development, building and extending of creative thought.

In the concluding chapter we will further the ideas presented here on how evaluative thinking sits into the Socratic pedagogy framework in relation to multi-dimensional thinking. We have already addressed generative thinking, so let us look at the last domain of thinking that is central to Socratic pedagogy: connective thinking.

NOTES

[1] I refer here to my own experiences and to the anecdotal evidence of other practitioners who have attempted, either successfully or unsuccessfully, to introduce philosophy into the classroom. I was once advised that it would be better to refer to my teaching as literacy and not philosophy.

[2] For more on philosophy as adversarial thinking see de Bono (1994), Slattery (1995), Moulton (1983), Burgh, Field and Freakley (2006).

[3] For critical thinking activities see Splitter (1991), Wilks (1995), Golding (2002).

[4] Lipman explores the nature of critical thinking through both his practical and theoretical publications. For more information see Lipman (1974, 1988, 1991a, 1991b).

[5] See Cam (1995, 2006), Burgh, Field and Freakley (2006), Splitter and Sharp (1995), Golding (2002).