A Model of Philosophical Discussion in the Classroom

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Abstract
A general conception of discussion and its relation to the development of reflective thinking is applied to philosophical inquiry in the classroom. Consideration of what makes a discussion philosophical is used to reveal the kind of thinking involved and then set within a model of discussion for the classroom designed to engage students in it. It is shown how a range of questioning, conceptual exploration, and reasoning tools can be introduced within that framework that will improve students' capacities to think both critically and creatively.

Being asked to write something on my contribution to philosophy in schools presents a dilemma. My interests have ranged from creating books of philosophical stories for children with accompanying exercises and activities, to writing books for teachers and running workshops, as well as spending a good deal of time writing about issues in educational theory, with its decidedly academic appeal.[1] It is not easy to sum all that up, except perhaps to advocate this mixture of theory and practice in the message that I would like to pass on. To rework Immanuel Kant: Without educational practice, we would have nothing to theorize about, but without theory we would have no considered idea of what education is all about. Educational theory without practice is empty, but educational practice without theory is blind.[2]

This may cover the general tenor of my remarks, but I must fill them out with something in particular. Since I have long been interested in the ways in which thought and speech operate in collaborative philosophical inquiry, I have chosen to focus on it. That will give a somewhat theoretical cast to the essay, but let me immediately point out that I will treat it as continuous with the question of how to make the most effective use of these operations in the classroom. In going back over this territory, I hope to provide a serviceable map of the terrain for teachers who lead children into it.

I am going to start with a general conception of discussion and its connection with reflective thinking and then home in on what makes a discussion philosophical and the kinds of thinking that it involves. I will go on to apply these general conceptions to philosophical inquiry in the classroom and show how various cognitive operations and speech acts function within it. From this I will extract a kit of tools for use in questioning, conceptual exploration and reasoning, which can be used to strengthen educational outcomes.

[1] I have included only a couple of these works in the references. A complete list of books and articles can be found on my website https://www.philipcam.com

[2] "Without sensibility no object would be given to us; and without understanding no object would be thought. Thoughts without content are empty: intuitions without concepts are blind." Immanuel Kant, *Critique of Pure Reason*, A 51, B 75.

Discussion and the Development of Reflective Thought

We may think of a discussion as a deliberative conversation that addresses a question or problem in a systematic way. Let us consider the terms of this definition. First, we have conversation, which is a verbal exchange between two or more people. Conversations include the exchange of such things as news, opinions, observations or ideas on one or more topics. Sometimes the conversations we engage in are deliberative. In these cases, we take pains to examine things and think them through. We may do so when planning a course of action, say, or coming to a considered judgment. When a deliberative conversation is sufficiently focused and structured to become a systematic examination of a problem or question, it is what I am calling a discussion.

The connection between deliberative conversation and individual deliberation has often been drawn. It is at least as old as Plato. In the *Theaetetus*, he has Socrates suggest that "the soul when thinking appears to me to be just talking—asking questions of herself and answering them, affirming and denying", it being a "conversation which the soul holds with herself in considering of anything" (Plato, *Theaetetus* 190a). It has also informed conjectures as to the origins of reflective thought. Here is John Dewey:

> No process is more recurrent in history than the transfer of operations carried on between different persons into the arena of an individual's own consciousness. The discussion which at first took place by bringing ideas from different persons into contact, by introducing them into the forum of competition, and by subjecting them to critical comparison and selective decision, finally became a habit of the individual with himself. He became a miniature social assemblage, in which the pros and cons were brought into play struggling for mastery—for final conclusion. In some such way we conceive reflection to be born (Dewey, 2004, p. 123).

When it comes to the development of reflective thought in the individual, it is worth recalling that this idea is but a special case of the central proposition of Vygotskian developmental psychology, that cognition, in all its higher forms, is an internalization of social interactions:

> Every feature in the child's cultural development appears twice: first on the social level, and later, on the individual level; first *between* people (*interpsychological*), and then *inside* the child (*intrapsychological*). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher psychological functions originate as actual relations between human individuals (Vygotsky, 1978, p. 57.).

The educational implication of these remarks is clear. If we want students to develop the ability to think about things for themselves, we need to place a premium on discussion. To take just a couple of points by way of illustration: Having students engage in the give-and-take of reasons in discussion is the forerunner of individuals coming to explore the pros and cons of suggestions that arise in their own minds. Considering different people's viewpoints during discussion helps to seed the habit of students looking at things from different perspectives in their own thinking.

Having defined what I mean by discussion, connected it with the capacity for reflection, and drawn attention to the educational role that it may play, let's now turn to what makes a discussion philosophical and the kinds of thinking that it involves.

Philosophical Discussion and the Kinds of Thinking It Involves

As with discussion more broadly, philosophical discussion addresses problems or questions, and we may begin to say what makes a discussion philosophical by looking at their general characteristics. Open a standard introduction to philosophy and you will find problems and questions regarding such things as knowledge, existence, society, morality, aesthetics, and religion. As a general procedure, the problems of philosophy are tackled by addressing the questions that they raise. To take a couple of traditional examples: there might be an attempt to resolve the mind-body *problem* by addressing the *question* whether mental states can be identified with states of the brain; or again, the *problem* of freewill and determinism might be addressed by starting with the *question* of what it means to say that a person could have done otherwise.

While philosophy's problems and questions vary widely in their subject matter, they all have to do with abiding human concerns. What constitutes knowledge and how it differs from belief and opinion, for example, concerns us all, and is no small matter, given the claims to knowledge constantly pressed upon us. This extends to the scope and propriety of all our attempts to gain knowledge of the world through science, religion, literature and art. The same point can be made in regard to the moral and legal realms. The question whether we should judge a person's actions by their intention, by their consequences, or some other standard, has a profound bearing on judgments made in everyday life, as well as within institutions such as the law.

It is important to note that these matters cannot be settled simply by an appeal to the facts, or any kind of scientific method. This is not to say that such means are irrelevant. The results of psychology and brain science are certainly relevant to the mind-body problem, for example, but their bearing cannot be judged without a good deal of analysis and argument. Similarly, it is just possible that physical indeterminacy at the quantum level may have implications for thinking about the wellsprings of freely chosen human action, but there is no shortcut from physical theory to a settlement of that perennial problem.

This does not mean that, beyond consistency with what we otherwise know, one response is as good as another. As in many things, our responses can be clear-headed and insightful, or muddled-headed and obtuse. Even when they have attained the status of received opinions, however, they remain open to challenge; and accepting the settled opinions of previous generations on such matters can mean living with outdated ideas. The once widely accepted view that the mind is an entity metaphysically distinct from the body has come to be contentious, to say the least, as has the oft accompanying belief that human beings have a free pass to intervene, as it were from the outside, in the causal fabric of the world.

This brings us to two ways in which philosophical problems and questions typically call for a response. One is that they invite conceptual investigation. Aside from straightforwardly conceptual

questions, which are common in philosophy, the need for conceptual exploration characteristically extends to the terms in which philosophical problems and questions are posed. Thus, we need to be clear about what we understand by the mind, or mental states and processes, in order to bring the available evidence to bear on the mind-body problem. In regard to the suggestion that quantum indeterminacy may help us to solve the problem of freewill and determinism, how clear is it that the conception of freely choosing to do something can be made sense of in terms of indeterminacy? Unless the terms in which our questions and problems are stated are in good order conceptually, we will not make much progress.

The other thing that philosophical problems and questions usually demand is a good deal of careful reasoning. Tracking down the implications of theories and suggestions to see how they fare is no less a matter of methodical investigation than it is in scientific inquiry. The claim that consciousness might be a physiological process occurring in the brain, for instance, needs to meet a good number of objections, which have, in fact, produced a considerable literature. Again, only a good deal of careful argument from physical theory via physiological psychology to what we know about the wellsprings of human action could have any hope of making a convincing case for quantum indeterminacy to underwrite free action in an otherwise deterministic world.

Given this, it should come as no surprise that philosophy has done a great deal to develop these two methods of investigation. Conceptual exploration is at least as old as Plato's *Dialogues*, while systematic attention to reasoning goes back to Aristotle. These things have developed over the history of philosophy and become fashioned into conceptual and logical tools that have widespread application, not just in philosophy. This is a point of particular interest. In my view, it is their wide-ranging utility that strongly commends them when it comes to general education. After all, education is not just a matter of acquiring subject knowledge, but of learning to think about it. It is an apprenticeship in learning to use the tools of thought to do the job that they are designed to do.

Although they are fit for general use, the best way of acquiring these tools is to engage in philosophical inquiry, where their application is front and center. Bearing in mind what was said about the connection between discussion and the development of reflective thought, it is to *philosophical discussion* in particular that we should turn. This is the way to develop general thinking capabilities that can be applied across the curriculum.

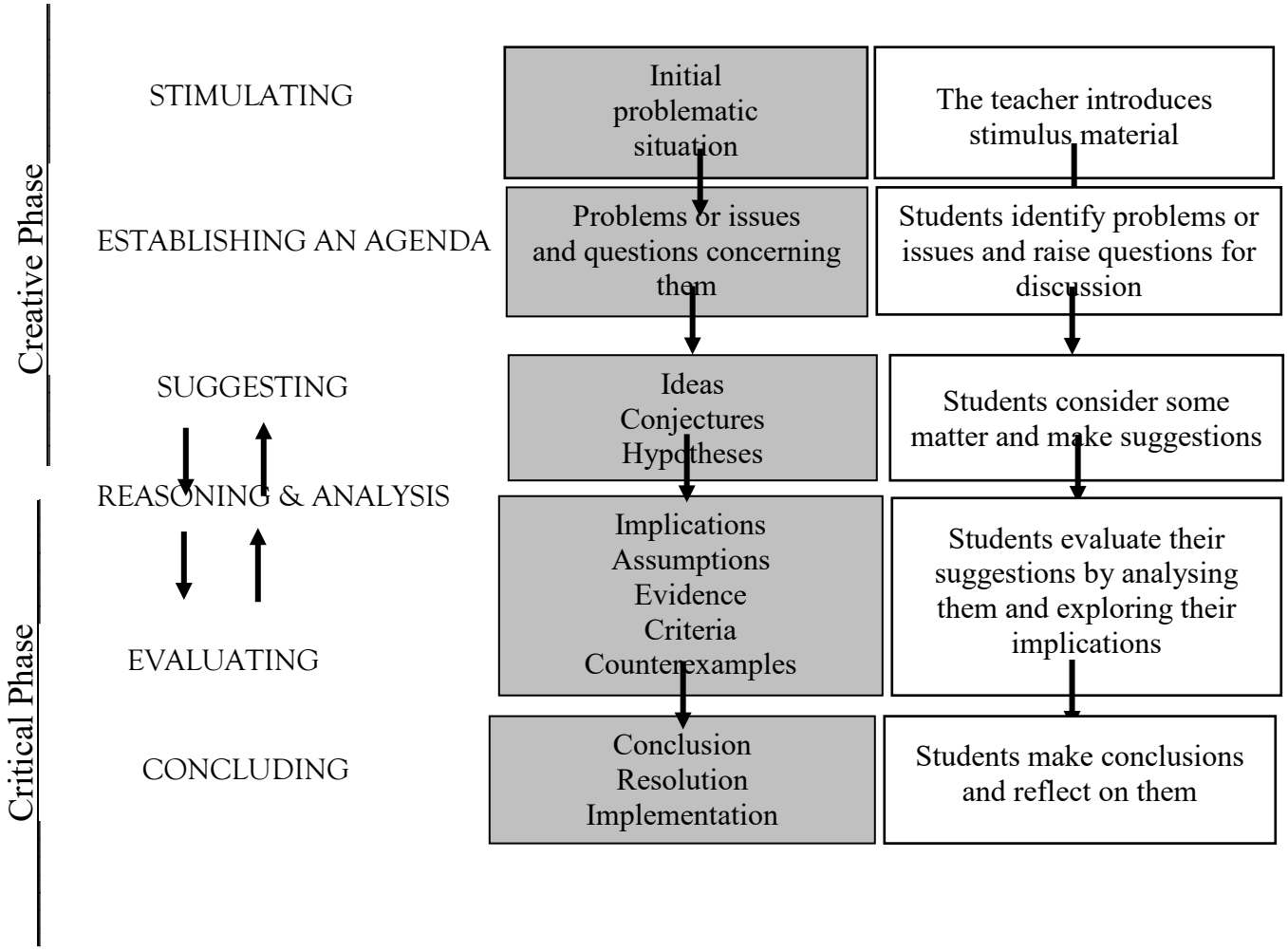
Before moving on, I should draw attention to the attitude appropriate to philosophical matters. While I have been focusing on the character of philosophical problems and questions, philosophical inquiry depends upon treating them in a philosophical way. After all, it is possible to adopt a different stance to the kinds of problems and questions with which philosophy deals. One might regard such matters as answered by appeal to authority, for example. Depending on the case, that might mean falling back on received opinions, religious teachings, parental values, or looking to the teacher for the 'right answer'.

Adopting a philosophical attitude to some matter is appropriate where that enables us to see it as it should be seen—that is to say, as open to discussion and the application of philosophical method. While other problems and questions call for other attitudes, such as the scientific and the aesthetic,

knowing when to adopt a philosophical attitude is primarily a matter of being able to recognize philosophical problems and questions through the characteristics mentioned above.

Application to the Classroom

In order to understand how the tools of philosophical inquiry operate, it is best to place them in the context of their use. For us, that means philosophical discussion in the classroom. Whatever complexities and messiness might appear on the surface of any such discussion, we should not lose sight of its underlying form. Let us examine it briefly, setting out the steps in the process and the means being employed at each stage.



John Dewey says that inquiry begins with a felt difficulty that arises in a problematic situation, whether in everyday life or in intellectual pursuits (Dewey, 1991).[3] Whatever the subject under discussion in the classroom, this is likely to require the teacher to introduce some suitable stimulus

[3] Dewey's account of inquiry in *How We Think* is a reworking of his understanding of scientific inquiry, aimed at teachers. My account is itself a reworking of Dewey for the purposes of philosophical classroom discussion. For an overview of Dewey's model, see especially pp. 72-78 of *How We Think*.

material. That is to say, material that problematizes something in the curriculum with the aim of stimulating Dewey's "felt difficulty" in order to motivate inquiry.

A problem or issue is one thing, its articulation is another. Having become aware that there is something worth looking into, the first step in dealing with it is to identify the nature of the problem, or say what is at issue. After all, we need to know what we are inquiring into. Failure to understand the nature of the problem or to see what is at issue is a sure-fire way of going wrong. Apart from being integral to inquiry, it is important for students to be able to identify problems for themselves, and not have teachers and textbooks forever set them, as if they came ready-set outside the artificial confines of the classroom.

As mentioned earlier, the standard way to begin inquiring into a problem or issue is to see what needs to be asked about in order to deal with it. Such questions are probes into a problem domain. Raising questions and getting them into good order is therefore part of establishing an agenda for discussion in the classroom.

Questions demand answers, but not in the way that questions asked by teachers normally do. For one thing, the answers must be searched for among the possibilities that present themselves. This means that students' beginning attempts to answer the questions that frame their inquiries should be viewed as *suggestions*, rather than as providing the answer. Suggestions can take many forms, such as floating an idea, voicing an opinion, making a proposal, or forming a hypothesis.

We may come to suggestions right off the bat or after having surveyed the ground, noting things that may help us in our quest. Even when we proceed directly from a question to a suggestion, there will be reasons in the background. Students who make a direct move of this kind can expect to be asked to provide reasons to back up what they say. In other words, it is assumed that the student has already latched onto some facts or features of the case and has those in mind when making the suggestion.

This brings us to the complex business of reasoning and analysis. These activities ultimately aim to evaluate suggestions by analyzing ideas, scrutinizing assumptions, drawing out implications, raising counterexamples, and bringing fresh evidence to bear. Most of the tools of philosophical inquiry come into play here. Reasoning involves both inference-making and the assembly and evaluation of argument. Analysis encompasses a whole host of operations from classifying, distinction-making and defining, through comparing and contrasting, to exploring the criteria that govern the application of complex concepts.

The complexity involved in exploring and evaluating suggestions is also partly due to the fact that it is not usually a single step-wise sequence. It is likely to track backwards and forwards as suggestions encounter difficulties and other suggestions are made, or we deliberate over the merits of competing points of view. There can also be inquiries within inquiries, adding further to the complexity. Even so, like fractals, they replicate the same process.

The outcome of classroom philosophical inquiry may take many forms. Having weighed competing suggestions, we may have come to a decisive judgment. Alternatively, there might be no agreed conclusion, but merely progress toward one. It may be that the issue is better understood, or simply a realization that we don't know something we thought we did. Socratic discovery of ignorance can be the beginning of wisdom.

Although both critical and creative thinking recur throughout such an investigation, we may consider the first phase up to and including the making of suggestions as predominantly creative, while the second phase, which involves reaching conclusions through the process of reasoning and analysis, is decidedly critical. Thus, successful stimulus materials are likely to engage the imagination and provoke thoughts and feelings that awake us to issues and problems and begin to raise questions in our minds. These things are more creative than critical in mood, and that continues on when suggestions spring to mind, or we brainstorm ideas. By contrast, reasoning as to the logical implications of a statement, bringing evidence in support of a suggestion, or presenting a counterexample to a claim, are critical in mood, as are such things as categorization, distinction-making, definition, and analytical comparison.

I do not mean to overplay this division of inquiry into critical and creative phases. In philosophy, very little critical thinking occurs without at least a modicum of creative thinking, and *vice versa*, with much of the work bearing a critical face on one side and a creative one on the other. The articulation of some idea requires the critical choice of vocabulary, for instance, and quite possibly self-correction in the process. While creative in tenor, the act involves critical oversight. Similarly, even something as obviously critical as mounting an argument against a claim involves the construction of an argument, which is an act of creation.

Developing the Tools of Thought in the Classroom

In what follows, I will attempt to flesh out aspects of the scheme presented in the previous section, restricting myself to the topics of questions and questioning, reasoning, and conceptual exploration. While much could be said about the means to be employed in other phases of inquiry, homing in on these three areas will allow me to concentrate on the most essential tools of thought that students will acquire.

Questions and Questioning

Let us begin with questions into a problem or issue that form the agenda for discussion. Our word *problem* has its roots in the Greek term πρόβλημα, formed from πρό (*before*) and βάλλω (*throw*), the meaning of the whole being that a problem throws something before you. It forms a hindrance or an obstacle to be cleared away. Of particular interest is the fact that in Aristotle's logic a problem takes the form of a question as to whether a statement is true. That is, a problem throws a question before you as to the truth or otherwise of a given statement. We might say that the statement is problematic in the sense of being questionable. Let us, then, regard a problem as throwing questions before us that we must try to answer if we are to address the problem aright.

Earlier I made some remarks on the character of philosophical questions, but let me come at them again from the perspective of the classroom. First, philosophical questions ask about things that matter to us, but to which we do not have settled answers. That must apply in the classroom, if we are to motivate inquiry. In this respect, they stand in contrast to all those teacher's questions that presuppose their answers and to which students are all too often unresponsive. Secondly, they invite a search for answers and are therefore open to various responses. This encourages creative and divergent thinking and consideration of different points of view in the classroom, which is enhanced by the fact that the inquiry is collaborative. Thirdly, we are looking at the kinds of questions for which the tools of philosophy are designed—questions whose possible answers compete for justification by appeal to reasoning and analysis. In the classroom, therefore, they provide a golden opportunity for students to learn to analyze ideas and reason well.

It should not be assumed that students will be able to construct such questions without training. Interventions are needed. For example, it can be extremely helpful for students to learn to distinguish between questions according to their response demands. This can involve seeing that one question demands discussion, while another would be better addressed by consulting a reliable source, or that it will need some admixture of the two. Sometimes it will be to recognize that whatever answer you give to the question is really a matter of personal preference and that arguing about the matter is inappropriate or in vain. In the instances of special interest to us, it is a matter of seeing that no answer will suffice without the support of a carefully reasoned case. Learning to be a good questioner is largely a matter of learning by doing, but carefully targeted exercises and activities can set students on their way.[4]

This brings us to the kinds of questions that are directly connected with the use of a whole raft of philosophical tools. So far, we have been looking at the questions that form the agenda of an inquiry. A great deal of questioning also arises throughout an inquiry. Since inquiry is by nature a form of questioning, this is hardly surprising. Typical questions in the classroom include ones like the following: What are you saying? Why do you think so? What's supposed to follow from that? What sort of thing is that? Why isn't it the same? These questions ask us to use the tools at our disposal to think about what is being said, by clarifying, giving reasons, and inferring, classifying, and making distinctions, in the cases just given.

While the subject matter of philosophy is intrinsically of value in a child's education, we are looking at it here through the lens of cognitive development. By constantly inviting such questions, philosophical discussion is an ideal vehicle for the development of critical and creative thinking. So long as the teacher is able to guide students to make appropriate moves in their thinking by asking such questions, and encouraging students to ask and address them, as discussion proceeds, I can think of no better means to that end.

It is not possible in such a brief survey as this to give a detailed account of all the tools in the philosopher's kit. As indicated earlier, I have chosen to concentrate on elementary tools used for

[4] See my *Philosophical Inquiry*, Chapter 2, for a detailed discussion of questioning and exercises and activities to support its development. On response demands, in particular, see pp. 17-20, 43-4, as well as use of the Question Quadrant, pp. 20-23, 45-7.

questioning, conceptual exploration and reasoning. As we move on from discussing questions and questioning, however, I would like to say something about why-questions and reason-giving. It is so basic to philosophical discussion in the classroom that it is worth singling out.

Why-questions call for a reason and the giving and examination of reasons is an essential part of the inquiry process. Some why-questions seek an explanation, while others ask for a justification. The former questions are emblematic of scientific inquiry, as the latter are of philosophy. Even then, we need to distinguish between different kinds of justification. Sometimes we seek justification for some action or societal state of affairs, which we may call *social justification*, while on other occasions we seek reasons to justify some statement or claim, which is *logical justification*. Why-questions of logical justification are the ones of particular interest here. To attempt to justify a statement or contention is to reason about it, and reasoning about propositions is the bread-and-butter of philosophical inquiry.

Reasoning

Let us begin by thinking about reasoning in terms of its basic operations. Just as addition and subtraction are the basic operations of arithmetic, *logical justification* and *inference* are the basic operations of reasoning. Here is an example:

> *Justification:* It isn't fair to give some people more opportunities than others *because* fairness involves everyone having the same opportunities.
>
> *Inference:* Fairness involves everyone having the same opportunities. *Therefore*, it isn't fair to give some people more opportunities than others.

I have italicized the words 'because' and 'therefore' to mark these operations.[5] Let us look a little more closely at what they involve, beginning with logical justification. In terms of language use, it involves logical relations between *statements*, where one or more statements are used to support another statement. From a cognitive point of view, it involves a relationship between *judgments*, where one or more judgments is used to justify another. I say this in order to point out that engaging students in logical justification shifts their attention from the relations between the things they are talking about to include the relations between their judgments and between the statements that they make. In so doing, it draws attention to their *thinking*.

Similar remarks apply to inference. Inferences involve logical relations between statements, where one statement, the conclusion, is said to follow from one or more other statements, which are its premises. In terms of cognition, an inference involves a judgment that, in accepting the premises, we should accept the conclusion. We may grant the inference without assenting to the premises, of course, but when we judge the premises to be true, we have what is called an *argument* from the premises to the conclusion. As with logical justification, inference-making and argument represent a

[5] I recommend sticking to these two words in the beginning stages of paying attention to reasoning. Some teachers of young children prefer to use the word 'so' instead of 'therefore' to introduce inference-making, but 'so' has *so* many other uses—isn't that *so*? We might not use terms like 'justification' and 'inference' with young children, but we need to clearly distinguish between these operations. Instructions such as 'Give a reason' and 'Draw a conclusion' will do just fine in combination with 'because' and 'therefore'.

shift from unselfconsciously thinking about our subject matter, to include awareness of the operations used in thinking about it. To use a word that has become fashionable in education, the shift is metacognitive.

The import of this becomes clear if we extend the comparison with arithmetic. Children add on things and take them away long before they learn to enumerate. Coming to think about such actions in arithmetic terms involves a metacognitive shift in which the basic operations of addition and subtraction are consciously applied to them. The utility of this arithmetic overlay is obvious and we make early and thoroughgoing efforts to ensure that children become numerate. Children also move from judgment to judgment and one statement to another without thinking about the logical relations between them, and educational intervention is necessary to establish proficiency in justification and inference. While the value of logical literacy is no less obvious than in regard to numeracy, it is an educational scandal that our efforts have not been commensurate.

Let me make two more points about the comparison with basic numeric operations. First, as Piaget long ago pointed out, such operations are reversible (Piaget, 1970). Numerical addition has its reverse in numerical subtraction. We can add 4 to 5 to get 9, for example, and subtract 4 from 9 to return to 5. Similarly, with logical operations. *X because Y*, has its reverse in *Y, therefore X*. You simply change the logical operator from 'because' to 'therefore' and reverse the order of the statements.[6]

Secondly, elementary numeric operations exist within the *systems of operations* that characterize mathematics. Logic is no different. Its operations belong within systems, from elementary operations of justification and inference like those illustrated here, to propositional calculus, syllogistic logic and other forms of predicate calculus, the logic of relations, and so on, generally encountered only at the tertiary level. The same is true of mathematics, of course, with the difference being that students encounter a good deal of mathematics at the primary and secondary level, but seldom much logic—and it shows!

Justification and inference assume significantly different forms and take on different roles in inquiry. In its traditional deductive form, reasoning is a truth-preserving operation. The standard way of expressing this is to say that valid deductive reasoning logically guarantees the truth of the conclusion given the truth of its premises. It is logically impossible for the premises to be true and the conclusion false. Deductive operations guarantee their results provided that you don't make mistakes, just as you're guaranteed to get the right result in arithmetic if you don't make mistakes.

While we make use of deduction within philosophical inquiry, it is less clear that it is deductive in its overall logical form. One possible argument runs as follows: According to Karl Popper (Popper, 2002), *scientific* inquiry takes the form of hypothesis and test. To be testable, a scientific hypothesis must be falsifiable, in that, if certain conditions C fail to be met, then the hypothesis *H* can be shown to be false by deductive reasoning. Crudely put, the reasoning is this: If *H* then C. But not C. Therefore, not *H*. Alternatively, if *H* survives the test, it lives to fight another day. Philosophy is not science, of course, but it might be argued that the same logic should apply to it, if it is to deal with

[6] By the way, while secondary students are familiar with ∴ as the shorthand for 'therefore', they are unlikely to know that ∵ is the shorthand for 'because'. That makes one symbol the inverse of the other. The folks who devised that arrangement knew what they were doing!

substantive matters.

This way of looking at inquiry places the formation and choice of hypotheses outside its logical framework. Before agreeing to do that, however, we need to consider how hypotheses are formed and chosen for further consideration. This is bound to be mixed, but let's consider detective work, for the sake of argument. Observation of a crime scene and the questioning of witnesses may provide clues as to suspects worthy of investigation. Here, various pieces of evidence combine to form, not a proof, but a circumstantial case as to the identity of a culprit. The inference from the evidence to the suggestion that *S* is the culprit is strong enough to be worth following up, but is no logical certainty. The inference is what we call an *inductive* one.[7]

Guided by this, we might say that inquiry has both inductive and deductive phases.[8] Although I cannot argue the case further here, let us apply this pattern to philosophical inquiry in its most generalized form. It is important to note that this overall framework is consistent with the occurrence of both inductive and deductive reasoning moves at various points within it. The deductive move already mentioned in relation to Popper is known as *modus tollens*, but it is only one move among many within the systems of elementary logic that may occur. Nor should we overlook the use of deductive reasoning in employing special purpose devices such as counterexamples, and necessary and sufficient conditions.

In regard to inductive operations, consider arguments from analogy. It might be argued, for example, that learning to think well involves the acquisition of skill, much as in learning a trade. So, just as you must learn to use the tools of a trade in order to be proficient in it, you need to learn how to use the tools of thought in order to think well. How is this argument meant to work? From the fact that the two cases are comparable in a significant respect (acquisition of skill), and that one has a certain further feature (mastery of the tools of the trade), it is inferred that the other will exhibit that feature as well (proficiency in the use of thinking tools). The argument is suggestive, but the fact that they share one feature does not prove that they share the other. If they do so, it is not out of logical necessity. Such an argument clearly involves an inductive inference.[9]

Again, consider thought experiments. They are an argumentative device that asks us to imagine a scenario or situation and draw a conclusion from it. A favorite of mine comes from John Locke in his discussion of personal identity. Locke asks us to imagine that the soul of a prince has come to inhabit the body of a cobbler, whose own soul has just departed. Do we now have the prince or the cobbler? Locke is betting that you will choose the prince and then draw his conclusion.[10] I particularly

[7] Further inquiries into the hypothesis regarding *S* may well take the deductive form indicated above. It may be that, were *S* to be the culprit, then *C* must be the case. If further inquiries show that *C* is not the case, then *S* is removed from the list of suspects.

[8] For this view of the logic of inquiry, see Dewey (1991), esp. pp. 81-2. For an extensive and more complex treatment of the matter, see Dewey (1938), Chapter XXI.

[9] Under one way of analyzing the argument, it also includes a deductive step. For an introductory account of the analysis of arguments from analogy, see my *Philosophical Inquiry* (2020), pp. 124-5.

[10] See John Locke, *An Essay Concerning Human Understanding*, Chapter 27, § 15. This thought experiment is not actually a stand-alone argument in Locke. He employs it to forward an argument for distinguishing, as he puts it, the same *man* from the same *person*.

like this example because it reminds me of the fairy-tale of the frog prince, where it is a good bet that the young readers will side with Locke. There is no hint of deduction here.

I haven't the space to say more about reasoning, but we already have a decent list of reasoning operations and devices for use in the classroom: the basic operations of logical justification and inference, deductive reasoning, inductive reasoning, counterexamples, necessary and sufficient conditions, argument from analogy, and thought experiments. If students can acquire even a basic proficiency with them, they will have gone a long way to fulfilling the promise of philosophy in schools to raise the bar on reasoning in school education.[11]

Conceptual Exploration

As we did with reasoning, let us tease out the relevant operations. They may be divided into the categorical and the comparative. Categorical operations include such things as classification and division, conceptual opposition, categorical distinction-making, definition, and the construction of metaphor. Comparative operations include making comparisons of quality and comparisons of quantity, ordination, making comparative distinctions, and drawing analogies.[12]

Let's begin with classification and division. To classify something is to assign it to a class. Thus, to say that Cinderella is a young woman is to assign her to the class of young women. She is also a fairy-tale character, of course, which places her in an entirely different class, along with the Big Bad Wolf and Rumpelstiltskin. Likewise, to say that consciousness is a state of the brain represents a dramatic shift in classification from the traditional view that it is a state of the soul.

Division involves dividing things of some kind into various sub-kinds, as in dividing cutlery into knives, forks and spoons, or dividing the mind into its various faculties. Similarly, we may divide ethical theories according to whether they are based on actions or based on virtue.

Both division and classification generally admit of hierarchies of classes. Thus, we may further divide the class of spoons into, say, tablespoons, dessert spoons and teaspoons, just as we may divide action-based ethical theories into those that are teleological and those that are deontological.

Once again, the comparison with addition and subtraction is instructive. Grouping things together and separating them form a pair of operations much like adding them on and taking them away. When formalized, the latter actions become basic numeric operations, while the former become basic conceptual operations. The one is as indispensable in learning to think conceptually as the other is in learning to think mathematically.

It is worth pointing out that classification and division also form a pair of reversible operations, like addition and subtraction, or logical justification and inference. We can divide spoons into their

[11] For a more detailed account of these and other reasoning tools, together with associated exercises, see *Philosophical Inquiry,* Chapter 4. See also my *Twenty Thinking Tools* (2006).

[12] It is an interesting and significant fact that categorical conceptual operations are related to deductive reasoning, while comparative operations have connections with inductive reasoning. Unfortunately, we do not have the space to explore that here. For a more detailed account of conceptual operations and related exercises and activities for the classroom, see *Philosophical Inquiry*, Chapter 3.

various kinds, for instance, and then gather them all together again just as spoons; or divide and subdivide ethical theories into their various kinds and then classify them together again just as ethical theories.

Students need to learn to apply these operations both separately and in combination. Take conceptual opposition for an example of elementary use. When we say that bad is the opposite of good, for example, we set up opposing categories. To say that to be kind is good, for instance, is to classify that conduct in the same way that we did for Cinderella. Metaphor is the same. John Locke says of the mind in its initial state: "Let us then suppose the mind to be, as we say, white paper, void of all characters, without any *ideas*". Here the mind, in its original condition, is classified as a *tabula rasa*.[13]

For combination, consider distinction-making. Categorical distinctions involve a combination of classification and division. It is easy to overlook the combination because distinction-making concentrates on differences, and therefore on division. Still, to draw a distinction is to make a division between things in some category, and it is best to be clear about this by first classifying the things that we are going to divide. An obvious way of distinguishing between daggers and swords, for instance, is to say that the former has a short blade, whereas the latter has a long one. More fully, however, a dagger is a short *double-bladed weapon*, whereas a sword is a long *double-bladed weapon*. That is to say, they both belong to the category of double-bladed weapons (classification), which differ in being either long- or short-bladed (division).

Distinction-making illustrates the fact that classification and division are the building blocks of other categorical operations. Definition follows suit. We might define a dagger as a short double-bladed weapon, and in doing so we cite the category to which it belongs (double-bladed weapon) together with the feature that divides it from other things of that kind (being a short one). All categorical operations involve classification, division, or some combination of the two.

Let's now briefly consider comparative operations. In their most basic form, they deal with differences of degree with regard to some characteristic of the things being compared. Comparisons of quality provide obvious examples. If one person is said to be more reliable than another, for instance, then they are being compared in the degree to which they possess a certain quality: reliability. Comparisons of quantity are also like this, as when we say that Michelle has let us down less often than Danny, or that swords were used more frequently than daggers in medieval battles.

Comparisons generally involve two-way relations. Consider *more* and *less* in the examples just given. If Michelle has let us down less often than Danny, then Danny has let us down more often than Michelle. If swords were used more frequently than daggers, then daggers were used less frequently. Similarly, if one performance is better than another, then the other is worse; if one course of action promotes happiness to a greater extent than other alternatives, then those alternatives promote it to a

[13] *An Essay Concerning Human Understanding,* Book II, Chapter 1, § 2. If it had been said that we should conceive of the mind as *like* white paper, we would have had an analogy, of course, which is conceptually comparative rather than categorical.

lesser extent.

These basic conceptual operations lend themselves to iteration. Consider ordination. Students vary in mathematical performance, for example, and it would not be at all difficult for their teacher to place a selection of them in order in terms of how well they do. Thus, student B's performance is better than A's, C's better than B's, D's better than C's, and so on. So far, that's just variation in the quality of their performance, but it is the kind of thing that we can easily quantify, as indeed we do. You need look no further than their end of year marks in mathematics.

Numerical comparison is as common in science as is the comparison of qualities and non-numerical quantification in the arts and humanities. It should therefore come as no surprise that comparative operations in philosophy are overwhelmingly qualitative, and seldom mathematical when quantitative. One example will serve. When, in the field of ethics, a philosopher thinks about what makes an action right, it is almost certain to be a question of what properties or qualities an action should have for the concept of *right* to apply to it. John Stuart Mill, for instance, says that an action is right insofar as it maximizes utility, which he conceives of as happiness. That is to say, the action should have the attribute of promoting happiness, and do so to a greater extent than any alternative.[14] Quality and non-numerical quantity are combined in this conception. This example is particularly to the point about the difference between the humanities and science, because Mill is following Jeremy Bentham, who attempted to give utility a mathematical treatment with the *utile* as its unit. In doing so, he tried to convert a philosophical conception into one fit for social science.

While some distinctions are conceptually categorical, as we saw, others are comparative. For instance, we might explain to a young child that tortoises and turtles are different from one another by saying that one is far smaller than the other. Here the distinction is obviously comparative. We might have said that one is little while the other is big, of course, which would have been categorical. I mention this because we often face a choice between a categorical and a comparative way of conceptualizing things, if only we realize it, and it can sometimes matter which choice we make. That's one reason among many for attending to conceptual literacy.

Like metaphors, analogies can be captivating. It is common for people to be struck by an analogy, which goes on to guide their thinking, even though its basis is unexamined. We are more inclined to scrutinize an analogy when it seems somehow inapposite. When it comes to conceptual exploration, however, a focus on the basis of comparisons is an aid to both critical and creative thinking. The ability to analyze an analogy, and say what makes it work or not, is a critical thinking skill, both in the study of literature and more generally; and sensitivity to the basis of comparisons is a source of creative thinking when it comes to students making figurative use of language.

[14] While 'greatest' is a superlative, talk about the greatest happiness it is still a comparative conceptualization. The action producing the greatest happiness is the one that produces greater happiness than all those actions with which it may be compared.

One final point. It would be a mistake to leave you with the impression that conceptual exploration involves nothing more than the simple application of categorical and comparative operations. As a remedy, let me say a word about complex concepts. I have in mind concepts like *friendship*, *fairness* and *freedom*. The criteria that govern the application of these concepts tend to vary from one case to another, the cases being related by nothing more than what the 20th-century philosopher Ludwig Wittgenstein called a *family resemblance*. In other words, they are not defined by a common set of criteria. Some cases may be quite analogous to others, but others far less so, and their differences may be more of interest than what they have in common. This complexity means that the application of the concept is often contestable. We are all familiar with uncertainty and even open disagreement on occasion as to whether someone is truly a friend, some outcome is fair, or what it means to be free. The same applies to most of the concepts with which philosophy deals.

Concluding Remarks

Questioning, reasoning, and conceptual exploration, are hardly exclusive to philosophy, but the kind of questions with which it deals, its careful attention to reasoning, and the fact that conceptual exploration is central rather than ancillary to its efforts, means that philosophy combines all the basic ingredients needed for teaching students to think well in ordinary language in a way that marks it out from other disciplines.

It is as well to acknowledge that philosophers and philosophical traditions differ in the emphasis that they place on one or other of the things we have been examining. For instance, some see philosophical inquiry as concerned primarily with establishing the truth about the things into which it inquires. Others see it as more concerned with the development of ideas that help to give meaning to our existence. These differences obviously make a difference to the kind of discourse in which they engage. Those who regard philosophy as a quest for meaning are likely to emphasize conceptual exploration, while those dedicated to the pursuit of truth are more likely to expend their efforts on reasoning. Still, regardless of its emphasis and variety, philosophical inquiry remains an amalgam of the ingredients presented here.

This completes our survey of philosophical discussion in the classroom. I am all too well aware that I have touched only lightly on features of the terrain that deserve far more detailed treatment than space allows here. Let me use the opportunity, then, to encourage you to follow these matters up, either in the works to which I have referred, or those of your own choosing. Provided you do so with an eye to converting what you find into classroom practice, your efforts will be richly rewarded.

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