

What is Teaching?

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The question with which this paper is concerned is simply "What is teaching?". How do we distinguish teaching from other activities? This is, I think, a very important question for at least four reasons. First, a lot of new educational methods are now widely canvassed in which the significance of teaching is far from clear. Repeatedly one finds an almost exclusive emphasis on certain activities of the pupils, say those of enquiry, discovery and play, not on the activities of the teacher. In the discussion of such methods it seems to me there is much misunderstanding of what teaching is and therefore of what it involves, and this not infrequently leads to a very distorted view of the whole educational situation. Secondly, people are now aware of a range of activities, some of them thought to be morally undesirable, whose relation to teaching is by no means clear: activities like indoctrinating, preaching, advertising and propagandizing. There are many terms that are as it were in the same logical band as "teaching", and we are I think rightly getting more sensitive as to whether or not the activities these terms label ought to go on in school. If we can get clearer about the nature of teaching it will surely help us to see the character of these other processes and their inter-connections. Similar problems are raised by the use of teaching machines and other devices, not to mention sleep-teaching.

Thirdly, we are clearly in need of a great deal of carefully controlled empirical research on the effectiveness of different teaching methods. But without the clearest concept of what teaching is, it is impossible to find appropriate behavioural criteria whereby to assess what goes on in the classroom. Most teaching methods new and old are advocated or defended on little more than hunch or personal prejudice. What we need to know are some relevant empirical facts, but these we cannot find if we are uncertain how to identify cases of teaching anyway. And finally, being clear about what teaching is, matters vitally because how teachers understand teaching very much affects what they actually do in the classroom. If it is the case that our activities depend on how we ourselves see them, what we believe about them, then if we have crazy, fuzzy ideas about teaching, we will be likely to do crazy and fuzzy things in its name. One of the most

important things for a teacher is surely to be clear about the nature of the central activity in which he is professionally involved. And if that is true for teachers in general, it is certainly true for the teachers of teachers in particular.

The question then is how do we characterize the activity of teaching so as to distinguish it from all other activities? How, for instance, on entering a classroom can one tell whether the teacher is in fact teaching? What exactly has to be going on? To begin to answer the problem here we must surely distinguish two obviously different senses in which we talk about teaching. In the first sense we talk about teaching as an *enterprise* in which a person may be engaged for a long period, say all afternoon. In this sense, a teacher spends the afternoon not in shopping, sunbathing or taking the dog for a walk, but in fact in teaching. The term teaching is here functioning at a very general level, labelling a whole enterprise which may be broken down into many much more specific activities. And if indeed we look at these more detailed elements of the enterprise, it is perfectly plain that many of them are not activities we would in a more restricted sense of the term wish to call "teaching" at all. Opening the window to let in more air, sharpening a few pencils, preventing a squabble between two pupils, all these may be legitimate parts of the enterprise of teaching as a whole. But we do surely use the term teaching in a much more specific sense whereby we can say that these activities are not the activities of teaching. In this second sense then we can speak of specific teaching *activities* which do not include in their number the sharpening of pencils, the opening of windows, and all other such activities which might form a legitimate part of the teaching enterprise as a whole. In the rest of this paper I am not concerned with the enterprise use of the term and would add only one point about it. Clearly for an enterprise to be that of teaching at all it is necessary that it must contain certain specific teaching activities. If a teacher spent the whole afternoon opening windows, sharpening pencils, cleaning her glasses and so on, she would do no teaching in any sense at all. It is necessary therefore to the teaching enterprise that it include specific teaching activities and all other specific activities are part of that enterprise only because of their relation to these.¹

But how are specific *teaching* activities to be distinguished from all other specific activities? Why exactly is opening a window or sharpening a pencil not teaching? Manifestly teaching is no one specific activity readily identifiable in general circumstances like say walking or running or riding a bicycle. There are an enormous number of specific activities which may in fact be teaching. One might be describing a historical situation and this

¹I am here using terminology which is in part the same as that used by B. Paul Komisar: "Teaching: Act and Enterprise", in C. J. B. Macmillan and T. W. Nelson (eds.): *Concepts of Teaching* (Rand McNally, 1968). In spite of certain similarities in both terminology and approach however, our accounts are clearly in radical disagreement over the precise relationship between teaching and learning, and the necessary characteristics of at least certain of his "teaching acts."

could be called teaching. One might on the other hand be saying nothing at all, but be drawing on a blackboard, or doing a chemical experiment in front of the pupils. All these would seem to be teaching activities in a specific sense, so that there is no one immediately recognizable activity which the term teaching picks out. Is there then a limited number of specific activities which constitute teaching, so that to be teaching at all one would have to be carrying out one of these? A teacher would then have to know how to question, how to prove things, how to demonstrate etc. If this were what teaching involved, it would greatly simplify the business of teacher training and indeed it seems to me that there is a large grain of truth in this idea. Such an approach is however too simple-minded, if only because many, if not all, of the specific activities which occur within teaching, also occur when one is certainly not teaching. One can tell a story to a child who knows it backwards but who just simply enjoys hearing it over once more. One might demonstrate something to entertain a nightclub audience. In proving something, one may be actually discovering the proof, not teaching someone else. One may be translating something, without teaching anything to anybody. None of these activities implies that teaching is taking place at all. It therefore seems to be the case that we cannot hope to get clear what teaching is simply by producing an exhaustive list of activities of this kind.

Nevertheless, teaching is what is technically known as a polymorphous activity: it quite literally takes many different forms. Its parallels are thus activities like work and gardening and explicit comparisons with these might help in the process of clarification. What does a person have to be doing to be working? Driving a truck, working a lathe, solving mathematical problems, drawing beer, all these activities constitute somebody's work. Indeed any activity would seem to be in principle a possible form of work. On the other hand, gardening is much more limited in what it embraces. Digging, mowing the lawn, pruning, are activities of gardening, but one cannot be doing *anything* as one might in the case of work. What then about teaching? Is it in this respect more like work or like gardening? Looked at one way teaching can take so many different forms that, like work, there seems pretty well no limit to the activities it can involve. Standing on one's head could in fact be part of teaching something, so could driving, working a lathe, solving a problem. Provided one looks at the whole range of things that can be taught, it would seem that any activity might occur as a teaching activity. Which activities might be involved in any particular instance will depend on exactly *what* is being taught. Yet it might be insisted that though teaching, to say,

drive, might *involve* driving, when teaching one must in fact do more than merely drive. One must, say, *demonstrate* driving. This would seem to imply that though any activity might be subsumed under the notion of teaching, for that to be the case it must be carried out in some special way. And this in turn suggests that all the legion activities that can figure in teaching, to figure in that way, must be seen as occurring within a framework of the kind of specific activities mentioned earlier, such as demonstrating, proving, telling, etc. This view is I think correct and the analogy between teaching and other polymorphous activities would seem to be most helpful at the level of say gardening rather than at the level of say work. Yet the parallel with gardening is strictly limited. Activities like pruning and mowing the lawn are necessarily forms of gardening and that concept may be exhaustively analysable in such terms. Yet it was insisted above that demonstrating and proving are not necessarily forms of teaching and it is by no means obvious that, limited though the range of activities of teaching may be, there is an exhaustive list of distinct activities into which the concept of teaching could be even partially analysed. I conclude therefore that we cannot hope to characterize specific teaching activities simply in terms of the activities of proving, demonstrating, telling, etc. Rather, teaching must be characterized some other way which will make it clear to us when these activities are indeed involved in teaching and when involved in say entertaining. It will perhaps also make plain why these activities are peculiarly important in teaching.

How then are we going to characterize specific teaching activities at all? I think the answer to this is that they can only be characterized in the way in which we fundamentally characterize all human activities: by looking at their point or purpose. It is by clarifying the aim, the intention of what is going on, that we can see when standing on one's head to demonstrate something, or any other activity, is in fact teaching and not say simply entertaining. The difference here is in the different, over-riding intentions involved in each case. What a particular activity is, what a person is doing, depends crucially on how he himself sees the activity. To take a standard example, if a person is seen to place a glass of liquid to his lips and slowly drain it, what is he doing? He may be quenching his thirst, committing suicide, or engaging in a religious ritual. Which of these if any it is, depends on the point, purpose or intention that lies behind the physical movements. Clearly the physical state of affairs can be described without knowing the person's intention. It can be seen that the glass is moved by a certain force so many inches towards his lips, and so on. But an account of what is observed does not tell us what the activity is. Perhaps in a

particular context we may be able to infer very readily the most likely point of the movements and thus what activity is involved; nevertheless it is only by reference to the intention that we can describe the activity, and of course there is no guarantee that our external judgment of the intention, based upon our observation, is in fact correct.

Yet if a "sufficient" characterization of an activity can only be given in terms of its intention and not in terms of its observable features, that is not to say that certain observable features are not necessary to many particular activities. Clearly not all observable events could be described as quenching one's thirst or celebrating Mass. Unless liquid of some sort is being consumed, a person cannot be quenching his thirst and on empirical evidence alone we can dismiss such a description of many of his activities. From observation we can rule out many possibilities of what a person is doing even if we cannot from observation say which of the remaining possibilities he is engaged in. The points here are fundamentally quite simple. First, any activity is characterized by its intention, but many intentions cannot, logically cannot, be ascribed unless certain observable conditions hold. Secondly, for a given set of observable conditions a number of quite different intentions may be ascribable. Thirdly, in so far as there are necessary observable conditions for a particular activity, they are necessary conditions for there being the intention concerned in this case. They are not conditions of a logically independent character.

What we want to know then about teaching is first, what is the intention by which its activities are picked out from all others and secondly what necessary observable features are there by which we can judge that some activities could not possibly be teaching, whereas others might well be, though we can never be certain from such external characterization alone.

A crude answer to the first of these questions is I think simple. The intention of all teaching activities is that of bringing about learning. But simple and banal though this answer might seem, it is I suggest an extremely important answer. It involves the claim that the concept of teaching is in fact totally unintelligible without a grasp of the concept of learning. It asserts that there is no such thing as teaching without the intention to bring about learning and that therefore one cannot characterize teaching independently of characterizing learning. Until therefore we know what learning is, it is impossible for us to know what teaching is. The one concept is totally dependent on the other. Because of the tightest conceptual connection then, the characterization and *raison d'être* of teaching rests on that of learning. If therefore a teacher spends the whole afternoon in activities the concern of which is not that the pupils should

learn, but say the inflation of his own ego, then in fact he cannot have been teaching at all. In these terms it could be the case that quite a large number of professional teachers are in fact frauds most of their lives, because their intentions are never clear. Perhaps quite a lot of our work is misdirected because this necessary intention is lost in a welter of secondary intentions, by neglect, if not deliberately. Of course pupils may learn many things when a teacher is not in fact teaching. That is another matter. What would seem to be particularly important here is that in taking a job as a professional teacher one is presumably being paid to carry out this intention whatever else one is paid to do. If one is not going into the classroom to bring about learning, if that is not the intention, then one cannot, logically cannot, be teaching. This is not to say that one may not be doing many other things which are of value. There are many ways of occupying children's time, some of them profitable, but that does not make them teaching. I wish to maintain therefore that the notion of teaching is totally dependent for its characterization on the concept of learning and that this has important practical consequences for how teachers see their job and therefore for what they do in the classroom.

Before going further, two particular points need commenting on. First, there are two ways in which we talk about teaching activities in the classroom context. The most common relates to the case in which a person may teach in the fullest sense of that word and yet, in spite of the intention and the appropriateness of the activities involved, the pupils may learn absolutely nothing. Here the notion of teaching is simply that of trying to get people to learn and no more. But there is another use of the word, which involves the implication that not only has there been the intention to bring about learning, but that the pupil has in fact learnt what was intended. To say that Mr. Brown taught me to ride a bicycle, usually means not merely that Mr. Brown tried to get me to learn to ride a bicycle, but that I have in fact succeeded in learning this. There is thus not only a "task" sense to the verb to teach, where trying or intending alone is implied; there is also a "success" or "achievement" sense, where in addition to the intention, there is the implication that learning has in fact occurred. For the rest of this paper I shall be concerned with teaching in the "task" sense only, and in this sense it is *not* the case that teaching necessarily implies learning. What teaching implies is merely the intention to bring about learning.²

Secondly, if teaching activities are intentional, what are we to say about all the learning that goes on in a classroom, or anywhere else, which is not intended by the teacher? Is there not such a thing as unintentional teaching

²The common-place distinction I am here making leaves un-noted a complexity which any full task/achievement analysis of teaching cannot disregard. If teaching is directed towards another activity, that of the pupil's learning, then the task and achievement uses of "teaching" need to be carefully related to possible task and achievement uses of "learning." We are inclined to assume that both uses of "teaching" are directed to the achievement use of "learning." It is however far from obvious that this is always the case. Just this problem arises again with activities like demonstrating and proving as Dr. Komisar shows very plainly (see Note 1). I am, however, unhappy about his account of these activities, though I am far from certain that I have always understood him.

after all? Certainly, we do sometimes talk in this way, when a particular situation has been the occasion for significant learning. What is important here is surely the recognition that no teacher intended the learning, though significant things might have been picked up in the context. It will be suggested later that it is because of certain important features in the context that make the situation similar to that in which there is the intention to bring about learning, that we use the term teaching here, though in a somewhat different sense. In schools we are not primarily concerned with unintended learning. What we are concerned with is the task of bringing about learning because we believe there is much that we can do towards making learning more than a random business. Of course, taking the education of children as a whole, what they pick up in the context of our unintentional teaching may indeed be important. Still this does not alter the fact that in schools we are centrally concerned with intentional teaching and that as soon as we turn our attention to what has been unintentional teaching, we thereby necessarily change its character.

The characterization of teaching given thus far, makes the concept entirely parasitic on that of learning. That being so, it would seem important in clarifying the notion further to look at what is meant by "learning". Even if teaching is not the label of one specific activity, is learning? The answer I think must again be clearly no. One may learn things by trial and error, by discovery or observation, by being told and by many other means. But if there are many different activities of learning, what makes them cases of learning? I suggest the answer is again found, as in the case of teaching, by looking at the intention of the activities concerned. If the intention of teaching involves a concern for learning, what in turn is the intention of learning? Fortunately the answer seems not to be another type of activity whose intention would in turn have to be clarified. The end or aim of learning is, I suggest, always some specific achievement or end state. There are many such end achievements: believing something which one did not believe before, knowing something one did not know before, being able to do something one could not do before, having a habit one had not got before and so on. As a result of learning one may know a scientific theory, know how to ride a bicycle, know how to calculate a square root, know that Henry VIII had six wives, appreciate the symphonies of Beethoven or keep one's engagements punctually. The achievements or end states with which learning is concerned are of enormous variety and not surprisingly therefore the activities of learning are equally varied. Learning like teaching is a polymorphous activity. If then learning is the activity of a person, say B, the intention of which is

the attainment of some particular end, we can say that B necessarily learns something, say X, where X may be a belief, a skill, an attitude or some other complex object that characterizes this end.

For the purpose of this paper there is no need to pursue the nature of learning further, though two particular points must be stressed. First, it is I think important to note that the end achievements of learning are new states of the person and that these differ radically from each other. We seem to be under a perpetual temptation to think that all learning results in knowledge. Clearly this is false. Along with this too goes the temptation to think that what we learn, X, is necessarily a truth or fact of some kind. Clearly this is also false. To thoroughly disabuse oneself of these myths is a first step towards getting rid of many common but quite fallacious ideas about the nature of learning and, as a consequence, about the nature of teaching.

Secondly it must be noted that I have assumed learning to be an activity on the part of the learner. But just as we have a use of teaching to cover cases when there is in fact no intention to bring about learning, so we have uses of learning where the pupil does not in fact intend to achieve the appropriate end which he nevertheless attains. In this sense we can speak of non-intentional learning, where as the result of a causal process as in hypnotism, conditioning, sleep-teaching or even the unconscious acquisition of something, the intention of the learner is not involved. It is important to recognize here that the term learning is being used for a quite different process, in this case causal and not intentional. Nothing is to be gained by trying to legislate one meaning for the term, cutting across general usage which now covers both these processes. Yet the distinction between them needs to be kept clear. Whether or not causal processes are educationally desirable is a matter with which I am not here concerned.

Putting together what has been said about learning with what was earlier said about teaching, we have the following account of teaching. A teaching activity is the activity of a person, A (the teacher), the intention of which is to bring about an activity (learning), by a person, B (the pupil), the intention of which is to achieve some end-state (e.g. knowing, appreciating) whose object is X (e.g. a belief, attitude, skill). From this it follows that to understand what is involved in teaching, one must start at the other end of a logical chain of relations, with an understanding of the end achievements to which everything is being directed. From this one can proceed to understand what is involved in B's achieving such ends, in learning X, and then proceed to an understanding of what is involved in A teaching B, X. This logical dependence of teaching on learning, and

learning on the nature of the achievements to which it is directed is thus once more no mere academic matter. If teachers are not clear what end achievements their teaching is concerned with, they cannot know what is involved in B's learning X. And until they know what is involved in B's learning X, they cannot know what is involved in A's teaching B, X. Any notion of learning which is not the learning of some particular X, is as vague as the notion of going somewhere but nowhere in particular. Equally some particular person B is necessarily learning this X. Following the logical chain, it is therefore only in a context where both what is to be learnt and who is learning it are clear, that we can begin to be clear about teaching B, X. Just as a pupil B cannot simply learn, but must necessarily be learning X, so A cannot simply teach, he must be teaching B, and he must be teaching B, X. It is as much a logical absurdity to say "One teaches children not subjects" as it is to say "One teaches subjects not children". Both of these phrases might have their slogan use, but the serious discussion of teaching ought surely to reject such slogans in the name of the simple logical truth, that one necessarily teaches somebody something. Not that of course one is necessarily teaching a "subject" in the traditional sense, but there must always be an end achievement which somebody is learning. A great deal of discussion of modern educational methods seems in danger of going seriously astray because of a refusal to accept the full implications of this simple logically necessary truth.

I have so far argued that in its central use, teaching is the label for those activities of a person A, the intention of which is to bring about in another person B, the intentional learning of X. In addition, there would seem to be uses of the term when the intention on the part of A is missing, but the intentional learning on the part of B remains, and also uses when the intention on the part of A is present, but the intention on the part of B is replaced by a causal process. But even in the central case, the intention on the part of A to bring about the learning of X by B might be thought to leave the characterization of teaching activities too open. On this account, might not the strangest events count as teaching a pupil say to count, provided this was the intention of the teacher? This would indeed be the case if there were no necessary conditions which an activity must satisfy before it could possibly be described as a teaching activity. Just as not all activities could be gardening surely not all activities could be teaching? What then are the necessary features of a publically observable kind which all teaching activities must possess? There are I suggest at least two. As it is necessarily the case that A teaches B, X, there is one necessary demand on the activities in relation to the particular X that is being taught, and

there is a second necessary demand in relation to the particular person B concerned.

The first of these demands is far from easy to express. But I suggest that in so far as one is necessarily teaching X, the specific teaching activity involved must be what I will call "indicative" of X. By this I mean that the activity must, either implicitly or explicitly, express or embody the X to be learnt, so that this X is clearly indicated to the pupil as what he is to learn. In this way the teacher makes plain in his activity *what* he intends to be learnt. It is not I think at all the case that what is to be learnt must necessarily be explicitly discernable in the activity, yet it must be so available in some sense that the pupil's learning activity can be directed to this as its object. It is because activities like demonstrating, telling and proving can provide such excellent means for indicating an X that it is intended the pupil will learn, that they play such a central part in teaching. Yet just because these activities are such effective means for expressedly indicating a given X, they can be significant not only in teaching but in such other concerns as entertaining. It is only when such activities are used in a learning context, to indicate what is to be *learnt* that they can become teaching activities. The fact that specific teaching activities must indicatively express what is to be learnt, also helps to make clear why at times we speak of teaching in an unintentional sense. We do this, I suggest, when certain features of a situation can be legitimately interpreted as indicatively expressing something to be learnt, though this in fact may not be anyone's actual intention. The situation is thus interpreted as a teaching situation by the learner, when in fact, from an intentional point of view, it is no such thing. First, then specific teaching activities must be indicative of what is to be learnt and it is for this reason that the opening of windows and the sharpening of pencils could never be themselves the teaching of historical facts or of Pythagoras's Theorem.

In the second place, as a specific teaching activity is necessarily concerned with the teaching of X to a particular pupil B, it must be indicatively expressed so that it is possible for this particular pupil B to learn X. One might teach an undergraduate class in philosophy Wittgenstein's criticism of the idea of a private language, by reading to the students sections from the *Philosophical Investigations*. But to carry out such an activity with a class of average six-year-olds would, I suggest, not constitute teaching at all. Indicative though the activity might be, as the six-year-olds could understand practically nothing that was being said, this could surely not constitute teaching *them* Wittgenstein's views on private languages. There is a gap between the knowledge, skills or state of mind of the learner and

what it is he is to learn, which it seems to me any teaching activity must seek to bridge if it is to deserve that label. Teaching activities must therefore take place at a level where the pupil *can* take on what it is intended he should learn. It must be possible, and this seems to me a logical point, for learning to take place. This logical demand is for the teacher to have psychological and other knowledge about the learner, and it clearly means that many specific things cannot possibly be taught to a given pupil given his present state of knowledge, skill etc. I conclude therefore that a specific teaching activity must necessarily indicatively express the X to be learnt by B and be so related to the present state of B that he can learn X.

It might be objected to my second necessary demand for teaching activities, that to misjudge the present state of the pupils does not disqualify a person's activities from properly being described as teaching. Surely he has taught X whether the pupils have learnt X or not. Certainly teaching does not necessarily imply learning, but it does necessarily imply the intention of bringing about learning by someone, and if from one's activities it is impossible for that someone to learn what is intended, it does seem very odd to describe such activities as teaching. One reason why we are inclined to think that there could be teaching even when the present state of the pupils is grossly misjudged, is I think that we spend so much of our time teaching classes not individuals and the condition I am insisting on seems to make almost impossible demands. Must it not be the case that in any class with a wide ability range, what is presented is in fact inappropriate for some of the pupils? If we are to stick to the individualistic model I have used, must we not say that in even the "task" sense, only some of the class have been taught X, and not others? Strictly I think the answer to that must be yes. But perhaps it would be better simply to recognize that we do use the word teaching both for activities aimed at group learning as well as individual learning. In the case of a group, what a teacher does if he is teaching them all the same X is to work with an appropriate norm for the attainments of that group. What constitutes an appropriate norm cannot I think be generally stated; nevertheless it seems to me that without working to such a norm there could be no activities that could properly be described as teaching the group. It might of course be argued, and with some justice, that properly understood, teaching a group necessarily involves attention to the individual differences of the pupils.

As a final comment on the two criteria which I have suggested are necessary to any teaching activity, it is I think instructive to note that in these terms opposing virtues and defects have tended to characterize both traditional formal teaching methods and more contemporary progressive

alternatives. Traditional teaching methods have above all concerned themselves with the indicative features of these activities, often meeting the present learning state of the pupils in an over-generalized and inadequate way. In reaction, more progressive methods have tended to cater extremely well for the present learning state of individual pupils, but at the expense of the necessary indicative features that teaching activities must embody. It is not that either group of methods is of itself necessarily deficient as teaching activities, and each might well have its place according to what exactly is being taught and to whom. What is important is that we come to realize that in all teaching activities both these necessary features need the fullest responsible consideration.

In concluding this paper I would like to return to the problem of clarifying the nature of such activities as indoctrinating, conditioning, preaching, training, instructing and so on, as the characterization of teaching that I have outlined can I think help in this process. As here considered teaching activities form a very broad category indeed, one which is in no sense restricted to those activities we think it appropriate for schools to undertake. I have been concerned with teaching and learning in general, whatever the ends concerned, be they bad habits, perversions, concepts, facts, physical skills, etc. In so far then as indoctrination and other activities involve the intention to bring about learning of some kind, they involve teaching and in so far as they are themselves processes for bringing about learning of certain kinds they are themselves forms of teaching. From all that has been said about teaching, different categories of teaching activity can clearly be distinguished in a number of distinct ways. The object or objects to be learnt can be of one particular kind rather than another. The activity of learning may be of a specific sort, or the activity of the teacher might be restricted in some particular way. Clearly there are likely to be labels for certain types of teaching which become important for specific purposes and it is, I suggest, by looking at the particular subclass of teaching activities involved that we are most likely to distinguish indoctrination, instruction, and so on.

Indoctrination, for example, would certainly seem to be picked out, at least in part, by the distinctive end state of mind of the learner, to which the teaching is directed. An indoctrinated person would seem to hold certain beliefs unshakably.³ In this case what the person is intended to learn, the X, is distinctive here, though in exactly what way it is important to note. On this criterion, it is nothing about the beliefs themselves that distinguishes indoctrination, but some higher order beliefs about their status, or some attitude to them. But however this characterization is

³See J. P. White, "Indoctrination", in R. S. Peters, (ed.), *The Concept of Education* (Routledge and Kegan Paul, 1967).

given, it is expressible in terms of certain distinctive objects for learning. Some have suggested that there is in fact something distinctive about the beliefs themselves in that one can only indoctrinate in matters of opinion or doctrines. Again this is to distinguish the teaching activities of indoctrination in terms of *what* is being taught. It can also be argued that indoctrination is restricted to certain learning processes, or that unintentional indoctrination is a contradiction. My point here is not to decide exactly what is meant by indoctrination or any other of these terms, but rather to indicate how a clarification of them might be helpfully approached.

What is however plain from the work that has already been done on the concept of indoctrination, is that most terms in this area are likely to be in some respects unclear, being used in a number of inter-related ways. What matters then is not what any "correct" use might be, but rather the conceptual distinctions that arise in this area. If, for instance, the notion of "believing unshakably" is seen as a distinctive result of some forms of teaching, and we for our purposes call these forms indoctrination, then indoctrination is being sharply distinguished from teaching leading to the holding of beliefs rationally, which many regard as a necessary part of education. Once we know the possible meanings of these very tricky terms we know our way around their relationships much better. We are clearer too about the significance of many of the things we do when engaged in teaching.

The distinctive features of such processes as conditioning and sleep-teaching would seem to be that they involve causal and not intentional learning or if it is intentional, it is intentional in some very particular sense. Whether or not these processes ought to figure within indoctrination or education, will of course depend on one's account of these latter processes. Training and instructing on the other hand would seem to be concepts connected unmistakably with intentional learning, the difference between them being determined by the particular group of end achievements with which each is concerned.

And finally, what of teaching machines: can such machines be properly said to teach? In terms of the analysis I have here given the idea that a piece of hardware can of itself teach is nonsense, for it itself can have no intentions and cannot engage in activities. But taken in the proper context I see no reason why a machine, properly programmed, should not be the instrument of a teaching activity. It is indeed the machine programmed so that it indicatively expresses what is to be learnt, in such a way that the pupil can in fact learn, because it meets his current state of mind, that must be thought of as the teaching agent. The appropriate programming

of the machine is of course an essential part of the teaching activity as a whole. What the invention of books, let alone teaching machines, made possible, was a separation in time between the teacher's expression of what is to be learnt and the pupil's encounter with this. Nothing new in principle is introduced into the idea of a teaching activity. What is however available here to the pupil is a programme of indicatively expressive activities drawn up after expert consideration of the problems involved in pupils' learning that might be much better for the task than the live activities of the teacher available. As the teaching activities that involve the use of such machines must be completely predetermined, it is of course important that the details of the programme be constructed with the utmost care and that it be appropriate to the learning state of the pupils. It is of course only when these conditions are fulfilled that in using the machine these pupils could be said to be being taught.

Throughout this paper I have been concerned with mapping the features that distinguish teaching activities from all others. It has not been my concern to lay down the criteria for good teaching or even successful teaching. Successful teaching would seem to be simply teaching which does in fact bring about the desired learning. Good teaching is however much more difficult to discern. I am not even sure that successful learning is a criterion for good teaching. Certainly in a given particular case there is no contradiction in saying that a person was successfully yet badly taught. Yet in so far as this account of teaching is correct, it has at least indicated which activities we are concerned to study in a critical comparison of teaching activities. What is more it must have at least some important implications for the methods whereby such comparisons must be made. But what these are, will not be gone into here, if only because such elaboration would be rather premature when the criteria for what teaching is are not yet agreed. It is towards establishing what these criteria are that this paper has been primarily directed.

The major philosophical papers which discuss the nature of teaching can be found in three collections of articles:

- C. B. J. Macmillan and T. W. Nelson, (eds.), *Concepts of Teaching* (Rand McNally, 1968).
- R. S. Peters, (ed.), *The Concept of Education*, (Routledge and Kegan Paul, 1967).
- B. P. Komisar and C. B. J. Macmillan, (eds.), *Psychological Concepts in Education* (Rand McNally, 1967).

There are also important chapters in:

- I. Scheffler, *The Language of Education* (Thomas, Illinois, 1960).
- G. Langford, *Philosophy and Education* (Macmillan, 1968).