THE CONCEPT OF
TEACHING

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ABSTRACT

This thesis surveys the recent development of the study of the concept of 'teaching' with particular attention paid to its relationship with 'learning'. The writer then presents an original analysis which gets over some of the difficulties found in the earlier analyses. This analysis takes a certain subset of the situations we commonly include as teaching and defines them behaviourally using the ethological concept of 'goal-corrected behaviour'. It is argued that it is not possible to construct a definition of 'teaching' which will have the same application as our ordinary concept but not its vagueness and this new analysis is not proposed to replace all those analyses which have gone before, nor to refine our ordinary language concept. Its value would be to specialists involved in the practice and study of teaching whose concern is with the role of teacher behaviour in student learning.
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CHAPTER I

INTRODUCTION

Teaching is of central concern to the study of education. It could be called the central educational activity. Accordingly it has been the subject of much research, both empirical and conceptual, but only relatively recently. This thesis will be centring on linguistic analysis of the concept of 'teaching' rather than empirical work on the activity, but it is my belief that too strict a division between the two sorts of pursuit is of value to neither. Empirical study of teaching has suffered from lack of a clear understanding of what we mean by 'teaching' and part of the reason why conceptual analysis has not been able to furnish such an understanding is that it has at times lost sight of the empirical nature of the activity to which the concept refers. This is not to claim that what is required in order to produce a definition of teaching is to "really look" at the activity and the definition will become apparent. Such a notion is absurd. For a start we use 'teaching' to refer to such a multitude of activities. We talk of teaching as something an expert sets out to do, as with the teacher in the classroom or of something which is part of a daily routine and receives little special attention as with a mother's teaching her child to speak. We speak of teaching ourselves and often comment on how much an experience has taught us. Most activities could, under certain conditions qualify as instances of teaching and yet very few do. What philosophers of Education
have been trying to find is a definition of 'teaching' which is broad enough to cover all that we want to include as teaching but specific enough to rule out cases which are not teaching. One might consider it possible to define 'teaching' as any sort of activity aimed at learning. This is perhaps the broadest possible definition of teaching, but it is, of course, too broad. Why this is not acceptable can be seen from brief consideration of the point of conceptual analysis. One of its functions is to help us reach agreement over the meaning of terms. Communication and discussion can be seriously handicapped by inconsistencies in interpretation of terms among participants. E.g. if an argument were offered that education restricted freedom it would be important to know exactly what senses of 'education' and 'freedom' were being used before we could consider whether our educational aims might be jeopardising some freedoms which we might want to protect. It is possible that such a broad definition of teaching as that given above might satisfy demands of consistency and clarity. We could all agree that we would use 'teaching' to refer to any activity engaged in where the goal was to get someone to learn and if we were consistent in using 'teaching' that way there would be no confusion over which sense of 'teaching' was being used at any time. But apart from the impracticability of such an approach we want more out of analysis of concepts than a definition we can all understand.

Conceptual analysts are seldom prepared to accept a definition which adheres so little to current usage. One sort of motivation for this adherence to the ordinary language
uses of a concept in its analysis is dependent on a Wittgensteinian view of language. Rather than seeing language as providing labels we attach to discrete objects we come upon in the world, Wittgenstein proposed a view of language where concepts represent distinctions we have come to make in our perceptions; a sort of grid or category system we have devised to divide up what we see. We have come to make these distinctions as we need them, where the divisions they represent are important in the way we live. The number of words the Eskimos have for snow compared to our one is a reflection of the importance of snow in their lives. Similarly, that we have so many words for the sorts of activity aimed at learning is testimony to the importance of such activities in our way of life. It has often been suggested that what separates humans from other animals is our capacity and tendency to pass on the acquisitions, skills and knowledge, from one generation to the next. We do have a number of words referring to this process, only one of which is "teaching". A sample of such words includes 'teaching', 'training', 'conditioning', 'enculturation', 'socialisation', 'lecturing', 'telling', etc. This proliferation of concepts in this area has not arisen by accident, but because we had a need for the distinctions they embody. Part of the object in analysing 'teaching' is discerning how it functions in our language. As a concept it is deeply embedded in educational discourse and to be content with an open analysis (like that given on pl ) is to forgo understanding of the features of our perception of educational activities which led to the concept. On this view, close analysis of the ordinary language
uses of 'teaching' can inform us on the roots of our understanding of educational activities.

Not all of those who have gone about the analysis of 'teaching' have had such motivation. Some have simply attempted to arrive at a conception we could 'agree' to, while others have been trying to show us what teaching really is like. The literature on the subject is extensive and diverse. In the following overview I shall discuss a number of examples in order to indicate some of the approaches which have been used.

Overview of Analyses of Teaching

1) Descriptive Analyses for Empirical Research

Many researchers regard examination of what we mean by 'teaching' as quite unnecessary, while others will cover it in a cursory section in their introduction as a preliminary to getting down to the real business of empirical study. But there are exceptions, and the purposes with which these empirical researchers undertake the analysis of 'teaching' are quite different from those of philosophers. Their activity is oriented rather more towards describing the activity of teaching than defining the place of the concept in our language. The most well known work of this sort is that of B.O. Smith who believed the analysis of the concept was vital as a prerequisite to the empirical study of teaching. In the first of his two papers devoted to the elucidation of what 'teaching' refers to he gives a description of the
activities of teaching. Below is a small excerpt.

"... the first significant act of the teacher is to focus the attention of his students upon himself... he then directs their attention to what is to be learned. ... The teacher then directs the students in those activities which are designed to bring about the desired learning." (Smith, 1956, p. 333-334)

In the later paper (Smith, 1960) he extends his description and develops a model of the teaching process which divides teaching interactions up into cycles which enable him to distinguish the act of teaching from that of receiving instruction.

"The teaching cycle is symbolised as follows:

\[ P_t \rightarrow D_t \rightarrow R_t / \rightarrow P_p \rightarrow D_p \rightarrow R_p \rightarrow P_t \rightarrow D_t \rightarrow R_t / \rightarrow P_p \rightarrow D_p \rightarrow R_p \rightarrow P_p \rightarrow D_p \rightarrow R_p \rightarrow P_p \rightarrow D_p \rightarrow R_p \rightarrow \ldots \ldots \ldots \ldots \rightarrow\]

achievement, where \( P_t \) is the teacher's perception of the pupil's behaviour; \( D_t \) is the teacher's diagnosis of the pupil's state of interest, readiness, knowledge, and the like, made by inference from the behaviour of the pupil; and \( R_t \) is the action taken by the teacher in light of his diagnosis; and where \( P_p \) is the pupil's perception of the teacher's behaviour; \( D_p \) is the pupil's diagnosis of the teacher's state of interest, what he is saying, and so on, as inferred from the teacher's behaviour; and \( R_p \) is the reaction of the pupil to the actions of the teacher.

Each unit marked off by the double vertical lines is an instance of the teaching cycle. Each one consists of a teacher-pupil interaction. Within this teaching cycle are two sub-units divided by the single vertical line. The sub-unit \( P_t \rightarrow D_t \rightarrow R_t / \) is what we refer to as an act of teaching; the sub-unit \( P_p \rightarrow D_p \rightarrow R_p / \) is what we call the act of taking instruction. These are reciprocating acts, and when performed under proper conditions they issue in achievement." (Smith, 1961, p92-93)

There have been other writers who have developed models of teaching prior to engaging in a programme of empirical
research and a number of empirical researchers who have written papers pointing out features of the teaching process which they feel have been overlooked by their colleagues. E.g. Bantock (1961) was concerned that the complexity of teaching had been underrated and wrote a paper stating that it was triadic. By this he meant that three separate components were involved; teacher, pupils and subject matter, and that all of these can vary in so many ways that we are misguided if we take teaching to be a unitary activity. Jackson (1962) wrote a paper stressing the importance of what he called 'preactive' teaching. This refers to the activity the teaching which is done when the pupils are not in the room; activities of planning or marking and thinking over particular problems. He argues that the reasoning and skills involved in proactive teaching and interactive teaching are quite different and yet proactive teaching has been almost entirely overlooked in teaching research.

These few examples can do no more than give an idea of the flavour of the work done by the empirical researchers. I have cited them to show how the concern in the analysis of 'teaching' by this group was more to clarify what teaching itself was like rather than to define the place held by the concept 'teaching' in our language. As I discuss some examples from the philosophical literature the difference in its emphasis will become apparent.

2) Philosophical Analyses of 'Teaching'

Analogy was the primary tool of the early attempts at linguistic analysis and it is interesting to note in the
light of the preceding discussion that analysis of 'teaching' by means of analogy is inclined to keep a fairly close tie to the activity, unlike other forms of linguistic analysis. Take, for example the Socratic "teacher as mid-wife", "teacher as poet", "teacher as friend" or "guide" etc. The first analogy of teaching to be taken up seriously in the modern literature was that of teaching as selling. (This is further discussed in the next chapter) Both Kilpatrick (1926) and Dewey (1933) used it to make the point that teaching could not be said to be going on unless someone was learning any more than selling could be said to be going on unless someone was buying. But the metaphor caught on in a way far more comprehensive than that in which it was introduced. Foley explained its popularity thus:

"Selling was the occupation that paid the highest remuneration. Everybody wanted to be a sales-man. ... "Selling" became a sort of magic word" (1958, p 354,)

Scheffler suggested a slightly different sort of explanation for the appeal of equating selling metaphorically with teaching.

"To speak, moreover, of teaching as selling and of learning as buying, to suggest that teaching be compared with business methods improvable by reference to effects on the consumer was to signal strikingly the intent to support reform of teaching." (Scheffler, 1960, p 45)

An adoption of an analogy for reasons so different from those for which it was introduced is bound to be fraught with dangers because when we draw an analogy we are not asserting that the likeness is total, or they would be the same thing
and could not be compared at all. One draws an analogy because two things are alike in some respect, not in all respects. There is always a danger however that they will be uncritically assumed to be alike in other aspects. Foley (1958) was concerned that the teaching-selling analogy, if taken too far, would, by connecting teaching with the commercial world, not encourage teachers to harbour a professional attitude.

Another popular analogy has been that between teaching and medicine. Thomas Aquinas employed this analogy many centuries ago to illustrate the point that teaching, like medicine, had two subjects, not one. That the success of the teacher, like that of the healer, is dependent on occurrences in a person other than themselves is a point returned to many times in this thesis. The more recent popularity of the analogy can be attributed to the high status awarded the medical profession during this century. Teachers like to see themselves as resembling doctors of whom the community thinks so much.

Schrag (1972) is scathing of those who use borrowed terminology and talk of 'educational treatments' and the like, but uses the medical analogy himself saying that both medicine and teaching have a range of problems with some being clear cut and easy to act on while others are complex and confounded, suggesting no course of action where the teacher or medic could be confident of success. This point is made perhaps to hearten educationalists that their endeavours are not so far from the medical model.
Kilpatrick and Dewey use their analogy prescriptively to make the point that teaching implies learning, Aquinas used his analogy rather differently to show us something about teaching we might have missed. Analogy can also be used to redirect our general evaluative response; e.g. comparing teaching to medicine in the hope that the teacher will be seen with some of the respect we give the doctor. We no longer see much use of analogy in the philosophical literature on 'teaching' except where philosophers are trying to establish the properties of the verb 'teach'. Perhaps the use of analogy belongs to the preliminary, exploratory phases of analytical enquiry and the 'teaching' literature has progressed beyond this and requires more precise methods of analysis than the illustrative metaphor.

The most precise and exacting form of definition one can seek is a set of necessary and sufficient conditions. I shall discuss a couple of definitions of 'teaching' and try to point to some of the difficulties in giving a set of necessary and sufficient conditions for our ordinary language concept. Hirst and Peters (1970) have provided what has almost become a standard definition of 'teaching'.

"Three logically necessary conditions for the central cases of 'teaching' activities have been suggested: (i) they must be conducted with the intention of bringing about learning, (ii) they must indicate or exhibit what is to be learnt, (iii) they must do this in a way which is intelligible to, and within the capacities of, the learners." (p 31)

In stating that these three conditions are necessary to central cases of 'teaching' activities Hirst and Peters
are making a modest claim. All that they require is that there be a group of activities to which these conditions can be shown to be necessary. But we can also expect to find what Hirst and Peters call 'derivative' cases where the three conditions are not fulfilled but where we want to talk of teaching. They are derivative cases of teaching activities in that we want to call them teaching because of their resemblance to 'true' or 'central' cases of 'teaching'. One may protest and say that with such qualifications their claim says nothing at all. The criteria cannot be necessary if we can have instances of teaching which do not fulfill them. Who is to decide if such cases are derivative except Hirst and Peters? But in making this allowance for derivative cases Hirst and Peters have accepted a plain fact about the nature of our language. The application of many of our concepts is so diverse that whatever definition we set up for a concept of 'teaching' we would be bound to find some case for which we use the concept, but which does not fit the definition; there is always an exception. We shall see this borne out quite clearly in a discussion of the following set of necessary and sufficient conditions.

Freeman (1973) wrote her analysis of teaching to reform the defects in intention/activity accounts such as Hirst and Peters'. She offers the following set of necessary and sufficient conditions for teaching to be going on.

"(1) A is engaged in a transaction with B.
(2) in which A's actions or activities in displaying, clarifying, exhibiting, exemplifying, eliciting, confirming or
otherwise indicating, explicitly or implicitly, and $x$

(3) are instrumental in bringing about some learning or understanding of that $x$ by $B$
(that is, $B$ is making progress towards a fuller learning of that $x$.) (Freeman, 1973, p 21)

This excludes the possibility of unsuccessful teaching, the advisability of which will be discussed in the next Chapter.

On the other hand it includes many cases which we would not want to call teaching. Take, for example, the situation where I am walking and meet $B$ and show him a book which I just got out of the library. He later reads this and learns a great deal from the book, even though when I read it I found it quite incomprehensible. I was engaged in a transaction with $B$, and my actions in indicating the book were instrumental in $B$'s learning what he learnt out of the book. But it would be strange indeed to say I had taught $B$ what I could not understand myself and had no knowledge of. One might want to defend Freeman by claiming that what is important is the central point of her analysis, which can be considered even if the phrasing of her definition fails to discriminate in certain cases. With this I would want to agree; if what we see Freeman as offering us is a view of teaching where the emphasis is on the learning which did, or did not eventuate from the teacher's actions rather than the nature of the actions themselves. But what I am concerned with here is the feasibility of developing a set of necessary and sufficient conditions of 'teaching'. Even once one accepted Freeman's view of 'teaching' it would not be easy to develop a set of necessary and sufficient conditions to describe it.
In order to get over the difficulty mentioned above, where the teacher's actions are instrumental in the pupil's learning, but are so minimal (e.g. indicating a book which the student later reads) that we would not want to credit the teacher with having taught what was learnt, we might pose a new condition. This would have to be some sort of condition of manner. Hirst and Peters require that what is to be learnt must be indicated or exhibited. In order to rule out the case where the teacher showed the pupil a book which the pupil later read one might require something like that the material to be learnt had to be exhibited in full by the teacher. But how could this be done without excluding teaching by the Socratic method? or the case of the swimming teacher who never actually showed or told his pupil how to swim but corrected or guided particular movements the student made as he floundered around in the water. The problem as I have already stated is to get a set of conditions which are broad enough to include all we want to call 'teaching' but specific enough to exclude all that we do not wish to call 'teaching'. I argue that this is impossible.

It would be hard to imagine a set of necessary conditions open enough to include all cases which we want to call 'teaching'. It would have to be something like: "The activity must have something to do with learning, by intended outcome, probable outcome, or actual outcome". As a condition this is singularly unilluminating, and would offer little towards the search for a definition of 'teaching' unless one were dealing with someone who had no idea at all
what the word meant. We could start to include conditions
which might exclude some non-teaching activities such as
paying school fees which are directed towards learning and
probably contribute to its occurrence. But it is not easy
to see how to start doing this without excluding some cases
we want to call teaching. No set of necessary conditions
would be sufficient and no set of conditions which were
sufficient to discriminate some cases of teaching would be
necessary to all.

One of the difficulties one must encounter in such an
endeavour is that we do not have complete agreement on
what we want to call 'teaching' and this feature of the
concept was taken account of by Hirst and Peters in their
claim that their conditions were necessary to central cases
of teaching. If their distinction between central and
derivative cases is accepted this protects their analysis
from being overthrown by counter-examples unless someone
can give a convincing argument as to the centrality of that
counter-example to the concept of 'teaching'. It is clear
that in some instances the use of the concept is derivative.
E.g. someone who says "That experience taught me not to go
out without my umbrella again" would probably be prepared
to accept that he was not really referring to a case of
teaching, in that an observer would have seen the experience
teaching the speaker. But the situation is not quite so
clear cut for non-intentional teaching (which Hirst and Peters
would call derivative) or unsuccessful teaching. In making
a definition of teaching one must focus on some uses of the
concept.
There have been other threads running through the teaching literature which deviate from the search for definition. The debates on the nature of the relationship between 'teaching' and 'learning' and the type of verb which best accommodates 'teaching' are discussed in later chapters. There is however, a large section of the literature which comprises a debate on how to distinguish teaching from such concepts as 'indoctrinating', 'conditioning', 'training' and the like.

Scheffler (1960) made stringent requirements of manner to keep 'teaching' separate from indoctrination.

"Teaching involves further that, if we try to get the student to believe that such and such is the case, we try also to get him to believe it for reasons that, within the limits of his capacity to grasp, are our reasons. Teaching, in this way, requires us to reveal our reasons to the student and, by so doing, to submit them to his evaluation and criticism." (p 57)

It is worth noting that Scheffler does not consider this a stipulative definition. He maintains he is reporting common usage.

"We have, in the last chapter, indicated how the notion 'teaching' suggests a crucial distinction with regard to the manner in which learning may proceed. What was involved in this phase of our discussion was, of course, the everyday, standard use of 'teaching', and was not some stipulated use."

That this is not "some stipulated use" has been questioned (Fowler, 1960, p 133), but Scheffler has reaffirmed it (Scheffler, 1961, p 135).

T.F. Green has written extensively on the role of rationality in education. We will be concerned here, however,
only with his writings on the relationship between teaching and indoctrination. He is not entirely consistent over the stringency of the division he wishes to make between teaching and the related activities he discusses. He states in a reply to criticism: "Nowhere did I intend to exclude indoctrinating and conditioning as activities of teaching". (Green, 1966, p 399). But he quite clearly wants at least to say that most teaching is not indoctrination, even if there is some overlap. Later in the same article he states:

"... of the three fundamental concepts, 'teaching', 'learning', and 'education', 'teaching' is the more fundamental in the sense that it is the only one of the three which necessarily is related to certain values or ideals." (Green, 1966, p 344)

This is in direct opposition to the Peters analyses of 'education', and shows that if he concedes that 'indoctrination' is a pejorative concept than 'teaching', in as much as it is related to "certain values or ideals" must be separable from it. But in 'The Activities of Teaching' Green treats indoctrination as a teaching mode. But even as he does this he shows himself unwillingly to accept a neutral account of 'teaching' by placing indoctrination on the periphery of teaching activities.

These are just a couple of examples in what is quite a considerable literature attempting to separate the concept of 'teaching' from such concepts as 'conditioning' and 'indoctrinating'. The first question to ask is whether this is a valid endeavour, whether these concepts ought to be separated. Snook claims that indoctrination is always a case
of teaching.

"All cases of indoctrination are cases of teaching. To say that someone is indoctrinating is not to deny that he is teaching; it is to presuppose that he is." (Snook, 1972, p100)

Cooper (1966), in criticising Sheffler's requirements of manner finds this "particularly appropriate when talking about teaching philosophy to students" (p 11) but to require reasons of an infant teacher or the teacher of art or poetry appreciation might be quite mistaken. Crittenden (1968) contributes to the endeavour of separating teaching from indoctrinating but in doing this separates what he calls 'teaching(S)' from ordinary teaching. Teaching (S) refers to teaching which goes on in school which he says can be expected to meet criteria of what is "significant, worthwhile, desirable and so on". (p242)

This is probably the happiest solution. There does seem to be a sense of 'teaching' which includes only activities which could not be indoctrinatory. The mistake philosophers like Scheffler make is to attend only to this sense of 'teaching'. What philosophers such as Scheffler, Green, have been trying to do in making the distinction between teaching and indoctrination is very important, if we see it as part of the endeavour of articulating the role of rationality in education, and working out what is important in safe guarding it. But they are mistaken in seeing their activity as the main point of analysing the concept of 'teaching'.
There is little else we need concern ourselves with in the literature on the concept of 'teaching'. There are several papers where philosophers have pointed out what they thought was going unnoticed, or led us to see teaching in a way we had not before. E.g. Ryle, (1966) sets out to make sense of the notion of people's being able to go beyond what is taught. He resolves the issue by showing us how to view teaching as teaching to (rather than teaching that) where the pupil learns a skill which he can go on to practise and develop. Komisar (1966) in a paper which is discussed in the next Chapter points out how teaching can be spoken of on different levels; saying "He is teaching" when one refers to his occupation or job, differs from saying "He is teaching" when one is explaining that he is teaching rather than looking out the window, reprimanding a pupil or some such. Papers of this sort advance our understanding of how we use the concept and contribute to the literature in a more general way.

One would search in vain for an overall trend in the literature I have been discussing. There are groups of writers who stress similar aspects of the concept, but for each of these groups there is a group stressing an opposing one. Yet, when reading these papers most of them are illuminating and one can appreciate their contribution to our understanding of what we mean by 'teaching'. Although there are not basic threads running through all they do not give an impression of an incoherent jumble. Wittgenstein argues that it is just the nature of our language that
concepts are conjunctions of uses which are not amenable to simplest definition. His most famous example is that of a game.

"Are they all 'amusing'? Compare chess with noughts and crosses. Or is there always winning and losing, or competition between players? Think of patience. In ball games there is winning and losing; but when a child throws his ball at the wall and catches it again, this feature has disappeared. Look at the parts played by skill and luck; and at the difference between skill in chess and skill in tennis. Think now of games like ring-a-ring-a-roses; here is an element of amusement but how many other characteristic features have disappeared? And we can go through the many, many other groups of games in the same way; can see how similarities crop up and disappear." (Wittgenstein, 1953, p 32 No.66)

He compares this to 'family resemblances' for such resemblances as hair colour, shape of nose, body build, etc. are shared by several members each, but no one can be guaranteed to be consistent throughout the whole family. In discussing the concept of number he introduced another analogy.

"Why do we call something a "number"? Well, perhaps because it has a--direct--relationship with several things that have hitherto been called number; and this can be said to give it an indirect relationship to other things we call the same name. And we extend our concept of number as in spinning a thread we twist fibre on fibre. And the strength of the thread does not reside in the fact that some one fibre runs through its whole length, but in the overlapping of many fibres. (Ibid, No.67)

Such is our concept of 'teaching'. One might think teaching had to be interpersonal, but think of teaching oneself, or even of an experience's teaching us. It has often been suggested that a teacher must have some intention that the pupil learn, but we speak of someone's having taught us, perhaps while they were even unaware of it. That the material
to be learnt be demonstrated seems to be a requirement which fits most uses of 'teaching' but we do speak of being taught by someone who used only strictures when our performance fell short of what was required and praise when it did not. I could go on.

Klein (1969) alone among those contributing to the teaching literature acknowledges this problem and proposes a solution. He concedes Wittgenstein's point that there may be no essence to objects of experience such as games but he sees a different way to approach the problem.

"But we can ask a different type of question: given that there are games, certain objects of experience, what do they presuppose? What must there be, in order for there to be games? Do games presuppose that there are rules? Do they presuppose that there are persons? Here we are looking for the necessary conditions for there being games, and the questions being raised are transcendental questions." (Klein, 1969, p300)

He contrasts his approach with previous approaches which have attempted to report on usage of the concept, or recommend slightly altered uses of the concept. The nature of his approach is not, very clear. I understand from his description of his aims that he is searching for the conditions or characteristics in ourselves and the way we live which have made it possible for such a phenomenon as teaching to arise. If this were his intention the sort of conditions I would expect him to produce would be perhaps something like: (i) we have an older generation with skills they can pass on to their young, (ii) we have a
language which is a useful vehicle for passing this on
(iii) human young have a long period of physical depend-
ence on their parents which exposes them to the possibility
of being taught what their parents have learnt rather than
leaving the home and finding it out for themselves.

But the conditions he ends up with look very much
like a set of necessary conditions which might have been
prescribed by a traditional philosopher who had a fairly
narrow view of what could be accepted as a case of teaching.
A look at some of the comments he makes on the progress of
his search for presuppositions makes it fairly clear that
this is what he is really after.

"It could now be asked whether or not the pre-
suppositions we have considered so far can serve
to distinguish teaching from all other activities.
...If we are to make a clear distinction between
the activity of teaching and the activities of
conditioning and indoctrination, a further pre-
supposition is necessary." (Klein, 1969, p 304)

This is rather disappointing. Klein began his paper as if
he were going to do something quite different from what
had been done before and yet what he produced was simply
another paper in the literature seeking necessary conditions
for 'teaching'. But if one looks with more charity on
Klein's attempt one must acknowledge that he has at least
seen the problems involved in trying to report the way
we use a concept like 'teaching'. His mistake was in trying
to solve the problem. One could describe a very general
necessary condition for 'teaching', as I did earlier, and
similarly one can point out very general presuppositions
for teaching, but Klein has tried to make his presuppositions more specific, and include such conditions as the treatment of pupils as free and rational agents. If by 'presuppositions of teaching' he means something quite different from what other philosophers mean by necessary conditions, then he could not expect the presuppositions to distinguish teaching from all other activities.

This has been a very negative chapter. Its main point has been to show that it is not possible to make a useful reportive definition of 'teaching'. In the next chapter I shall go into the debate on the relationship between teaching and learning in some depth. Chapter 3 is devoted to discussing the various verb forms which have been suggested in definitions of teaching.

In the fourth chapter I shall present my own analysis and the final chapter will be devoted to demonstrating its utility.
CHAPTER II

DOES TEACHING IMPLY LEARNING?

Philosophers of Education have wanted to go beyond analogy and the search for necessary and sufficient conditions has proved rather fruitless. There has been a lull in the literature on teaching in the seventies but in the last couple of years there has been a group of papers which have addressed the issue of the relationship between 'teaching' and 'learning' through the task achievement distinction.

In this chapter I shall recap the historical development of the debate which had its roots in the question of whether or not teaching implies learning. It may seem odd to those uninitiated into the vagaries of conceptual analysis that there would have to be much debate over this. We can and do speak of unsuccessful teaching, "I am teaching the class quadratic equations but I don't know if they are learning anything" is quite acceptable as a sentence. It does not offend our ordinary language sensibilities as does talk of a married bachelor. But the debate on whether or not teaching implies learning proves to turn on much more substantive issues than whether or not 'I am teaching but they are not learning' is an acceptable sentence.

Kilpatrick in 1925 made an analogy between teaching and learning to express his affirmation that teaching implied learning.
"The salesman hasn't sold unless the customer buys. The teacher hasn't taught unless the child learns. I believe in the proportion: teaching: learning = selling : buying"
(Kilpatrick, 1925, p 268)

Dewey iterated the same sentiments in his 1933 edition of How We Think.

"Teaching may be compared to selling commodities. No one can sell unless someone buys. We should ridicule a merchant who said that he had sold a great many goods although no one had bought any. But perhaps there are teachers who think that they have done a good day's teaching irrespective of what pupils have learned."
(Dewey, 1933, p 35)

Scheffler explains the adherence to this position his concept of an educational slogan. He discusses as an example of a slogan the dictum "We teach children, not subjects."
This was not meant to be taken literally, to mean that its proponents taught children but were not trying to get them to learn any subject matter; its significance was practical.

"Briefly, its point was to direct attention to the child, to relax educational rigidity and formalism, to free the processes of schooling from undue preoccupation with adult standards and outlooks and from mechanical modes of teaching, to encourage increased imagination, sympathy and understanding of the child's world on the part of the teacher. To know the educational context in which such a practical message took shape is to grasp the relevance of its emphasis. Conversely the relevance of the message cannot be seen without reference to the context." (Scheffler, 1960, p 40)

So, to view the statement that there is no teaching without learning as an educational slogan is to see it not as a literal statement to be tested for its accuracy in representing some state of affairs, but as an emphasis
which is to be understood in terms of its context. In the period when Kilpatrick and Dewey were writing there was concern that teachers felt what they did was self-justifying regardless of its effect on the students. The function of their writings was similar to that of the earlier mentioned slogan, "We teach children, not subjects". Note the last sentence I have quoted from Dewey: "But perhaps there are teachers who think that they have done a good day's teaching irrespective of what pupils have learnt." His concern, as expressed here is not that one can talk of teaching where there is no learning, but that the effectiveness of the teaching in getting the pupils to learn could be disregarded when a teacher assessed the quality of his teaching. As shall be seen in the discussion of those who hold to the view that teaching can occur without learning, where the emphasis is on the activity rather than its results, some condition is usually included in the definition to ensure that it is at least possible that any activity we can call 'teaching' could produce learning. So it can be seen that what Dewey and Kilpatrick were arguing for need not be interpreted as meaning that there is an inherent logical connection from any statement of the occurrence of teaching to a statement about the occurrence of learning, but could be reduced to the claim that talk of teaching must not be too far removed from talk of learning.

By the mid fifties, however, the tide had turned. Schefler writes:

"Teachers, feeling the weight of each student's
adjustment and personality conflicts resting on their tired shoulders, have in many instances tried to do too much -- to become parents, counselors, and pals as well as teachers. They have, understandably, given such aspirations coupled with the emphasis on consequences) felt harried and guilty at not being able to do all that their charges require, accepting meanwhile the responsibility for all failures in learning upon themselves." (Scheffler, 1960, p 45)

He documents this with references to the plight of teachers which were published in 1952 and 1954. The effect of this change of climate can be seen in Broudy's approach to the situation in 1956.

"Many educators rather glibly pronounce the dictum: 'If there is no learning, there is no teaching.' This is my way of speaking because no educator really believes it to be true, or if he did he would in all honesty refuse to take most of his salary. There is a difference between successful teaching and unsuccessful teaching, just as there is a difference between successful surgery and unsuccessful surgery... To teach is deliberately to try to promote certain learnings. When other factors intrude to prevent such learnings, the teaching fails. Sometimes the factors are in the teacher; sometimes in the pupil; sometimes in the very air both breathe, but as long as the effort was there, there was teaching." (Broudy, 1956, p 14)

He supports his position on the grounds that it "allocates the teacher a definite area of responsibility. There are procedures that one can rightfully expect he will follow, and there are results that he can conscientiously try to achieve". (p15) The context which prompted Broudy had changed; where Dewey was concerned that teachers were neglecting their responsibility to consider the effect of their teaching, Broudy was writing out of a concern to curtail the growth of the area of responsibility of the teacher which had become crippling.
Here we have two influential philosophers of education arguing for opposing points of view and in each case their arguments are based as much on what they see as the desirable effects their acceptance might have on the morale of teachers rather than recourse to linguistic grounds or empirical evidence. Although Scheffler (1960) did not refrain from taking sides in this debate he did contribute something quite different in his adaptation of Ryle's (1949) discussion of achievement verbs. He separated two senses of 'teaching' and introduced the notion that there is an "intention" use of 'teaching' where teaching does not imply learning and a "success" sense where it does.

"For though in some uses of the verb 'to teach' it does not imply success, in others it does. We have already noted the difference between asking, "What have you been teaching him?" ("What have you been trying to get him to learn?") and "What have you taught him?" ("What have you been successful in teaching him?") The first question, we may say, contains an "intentional" use of the verb, while the second contains a "success" use." (Scheffler, 1960, p 42)

Thus we can say there are two senses of 'teaching' and what Dewey and Broudy were doing was arguing for emphasis on the one they saw appropriate in the context.

In a paper published in the same year as Scheffler's book Smith (1960) drew on Ryle's distinction to make a different point about the relationship between teaching and learning. Holding to the view that teaching does not imply learning he set out to show that Kilpatrick's equation "teaching : learning = selling : buying" was
mistaken. It is not clear that it is necessary for Smith to show selling and buying make a poor analogy with teaching and learning in any other respect other than that for which the analogy was employed. The analogy assumed selling implied buying and was employed to illustrate the claim that teaching implied learning. Thus it could be quite irrelevant that teaching might involve a greater diversity of activities, or that one can learn without a teacher but cannot buy without a seller, as these differences do not affect the point the analogy was introduced to illustrate.

In dealing with the central point of the analogy — whether or not teaching implies learning as selling implies buying — he argues that it is contradictory to say, "I am selling X but no one is buying it", but not to say, "I am teaching X to A but he is not learning it". If this stands, he needs no other argument but by an admission he makes in a footnote he shows this to be not doing justice to the complexities of the situation.

"There is a sense in which it would not be contradictory to say "I am selling X but no one is buying it." For example, "I have been selling cars all day but nobody bought one" is not self-contradictory. But in this case it would be more precise to say "I have been trying to sell cars," etc., meaning "I have been doing things intended to result in the sale of cars." " (Smith, 1960, footnote No. 5)

He makes himself vulnerable here for an opponent who might say that "I have been teaching all day but no one has learnt anything", really means "I have been trying trying to teach...". In fact this is just the move made
by Campbell (1965).

"It appears to the observer that when Smith and Scheffler define teaching (in the disputed sense) as not implying learning, they are making a stipulative definition. The definition is stipulative because we do not ordinarily say that, "John is teaching algebra to Bill, but Bill is not learning any algebra." We would say, rather, that, "John is trying to teach Bill." " (Campbell, 1965 p 82-83)

If Smith is not able to give a linguistic argument for denying that teaching implies learning, it is perhaps because he does not hold to the view on linguistic grounds. The important criterion for Smith in selecting the limits for a concept of teaching is to "... begin with the most general conception..." (Smith, 1956, p 339). His real concern is of the applications of the concept for empirical research.

"That learning does not necessarily issue from teaching, that teaching is one thing and learning is quite another, is significant for pedagogical research. It enables us to analyze the concept of teaching without becoming entangled in the web of arguments about the processes and conditions of learning; in short, to carry on investigations of teaching in its own right." (Smith, 1961, p 90)

Here Smith makes it clear that what he is concerned with is a concept of 'teaching' which will serve the needs of those involved in teaching research. He finds the 'task' sense most appropriate in this context. In asserting that 'teaching' is a task verb, however, he is claiming much more than he needs. Had he, like Scheffler, separated two senses of 'teaching' and accepted that there were two senses of 'teaching', he could then have argued
that the concept appropriate for use by empirical
investigators was the 'task' sense. But he chose to make
the stronger claim that 'teaching' is a task verb.

"Task words are those which express activities
such as "racing", "treating", "travelling", and
"hunting". The corresponding achievement words
are "win", "cure", "arrive", and "find". Teaching
is a task word and learn is the parallel achieve-
ment word. ... We can say of a task such as play,
treat, or teach that it is performed skillfully,
carefully, successfully, or ineffectively. We
may play the game successfully or unsuccessfully,
but we cannot win unsuccessfully. We may treat
a patient skillfully or unskillfully, but the
restoring of health is neither skillful nor
unskillful. It makes sense to say that we teach
unsuccessfully. But it is self-contradictory to
say that we learned French unsuccessfully."
(Smith, 1961, p 90)

Gowin (1961), attacked this paragraph in what was the
earliest paper arguing against the applicability of the
task-achievement to the analysis of 'teaching'. He discussed
a number of applications of the task achievement distinc-
tion and the first he dealt with was Smith's, claiming
that it is possible, in certain contexts to talk about
winning or learning successfully. In discussing how one
might talk of winning a game successfully he writes:

"We might be speaking of a Pyrrhic victory, a
success gained at too great cost. Or we might
be speaking of a moral victory, as in the case
of an underdog who loses by a margin much less
than predicted." (Gowin, 1961, p 287)

One of the things one could reply to this is that
when an analytic philosopher is making claims about
how we use language he is extremely vulnerable to this
sort of attack because our language is so diverse it is
often possible to dream up a case where one could say all
sorts of things one would not ordinarily say. In order to show us how we might say the game was won successfully or unsuccessfully Gowin has to give us the conditions to show us how it is not self-contradictory. He can make a defence of the claim that to speak of winning a game unsuccessfully need not be a contradiction, but the occasion would just never arise where he would be expected to defend the claim that it need not be contradictory to say the game was played unsuccessfully because it is hard to imagine in what context such a claim could ever be made. The nature of Gowin's criticism of Smith's paper can be explained by the fact that Gowin is writing out of a different tradition, drawing on Dewey and Pierce rather than Ryle and Austin. This may also explain why Gowin's paper has aroused so little attention in the literature.

Gowin's paper was not, however, completely overlooked by analytic philosophers and Jane Aschnor wrote a lengthy reply in which she demonstrated in many ways Gowin's failure to grasp the analytic method. But little, I think, is to be gained by going into this in any detail here. If his approach did limit his appreciation of the previous debate it has led him to make an original contribution. His point has been touched on later by others who have pointed out that a difficulty with the analysis of 'teaching' as task with learning as achievement is that they have different subjects, but nowhere has what is important about the difficulty been stated so specifically as by Gowin.
"A second possible conclusion is to say teaching is the task for which learning is the outcome. According to Ryle this would be one process, not two, and learning is the judged ending. Teaching and learning would be like treating and cure. Effecting a cure is not, however, something the patient does; the cure is the outcome of the process. Thus, teaching would have learn as an outcome, but the pupil apparently would not be an active participant in the learning process for learn is not an activity in this analysis but rather the judged ending to a process. Thus, it seems that if we try to specify the relationship between teaching and learning using this analysis we end with teaching still independent of the pupil's effort and activity in learning". (Gowin, 1961, p290)

McMillan and McClellan (1967) note that teaching and learning have different subjects, but see this as just a linguistic difficulty.

"Note that the paradigms of corresponding task and achievement verbs ... are all verbs that have the same subject, and that 'teaching' and 'learning' in their paradigm uses must have different subjects. This is not a decisive objection, for we may (by appropriate verbal squiggling) translate 'learn' into 'getting ... to learn'; 'teach' (as task) is parallel to "getting the student to learn" (as achievement)." (MacMillan and McClellan, 1969, p 136)

Not being a strictly linguistic philosopher Gowin would not be interested in such 'verbal squiggling'. He is more concerned about the substantive issue, the compromising of the importance of the 'pupils' effort and activity in learning". When considering this problem it can be seen that the "verbal squiggle" is not a very satisfactory solution. To say "I got someone to do something" has some sort of implication of overcoming his inclination or will. Consider "She got him to marry her", or "I got him to change his job", as compared with "She facilitated his marrying her" or "I was instrumental in his changing his job".
Often teachers have to get students to pay attention, do more private study, or exercises required, but teaching would be a pretty thankless task if all it involved were getting students to do things.

Gowin attempts to deal with the problem by introducing Pierce's concept of thirdness.

"As firstness, an argument may be submitted only to its interpretant, as something the reasonableness of which will be acknowledged. ... Secondness as argument, is urged upon the interpretant by an act of insistence. There is action on the part of the teacher, but not necessarily reaction from the pupil. ...

"Thirdness, as argument, is presented to the interpretant for contemplation. It is not urged, nor merely submitted; its appeal lies in being interpretable in "thoughts or other signs of the same kind in infinite series." Such contemplation would seem to require a triadic relation -- the argument presented, the acceptance or receipt of the argument (either in assent or rejection by the interpreter". (Gowin, 1961, p 295) and (Pierce, 1958, p 383-4)

Since Pierce's notion of "thirdness" is somewhat obscure Gowin's solution is rather less helpful than his detection of the problem. In the literature on the relationship between 'teaching' and 'learning' previous philosophers had limited themselves to examination of the logic of concepts without adequate consideration of the phenomena to which they refer. Gowin has been able to throw light on the problem by getting outside the relationship between the concepts 'teaching' and 'learning' and looking at the actual relationship between teacher and learner.
In the later sixties less attention was given to this issue. Smith's analysis of teaching as a task with learning as the parallel achievement verb gained wide acceptance, combined with Scheffler's 1960 analysis of the intention use of 'teaching' it became the basis of what I shall call (after Freeman, 1973) the intention of activity analysis. Teaching had become to be identified as activities undertaken with the intention that pupils learn. E.g.:

"What, then is characteristic of teaching as an activity? ... the central intention which lies behind his efforts." (Bearden, 1967, p 136)

"Teaching may be characterized as an activity aimed at the achievement of learning ..." (Scheffler, 1967, p 120)

"When we teach, we are trying to get someone to learn something ..." (Soltis, 1968, p 33)

"But what characterizes teaching, and how are we to distinguish its activities? ...behind all the activities there lies the intention to bring about the learning". (Hirst and Peters, 1970, p 78)

This view was not seriously challenged until Helen Freeman's paper in 1973 it was discussed in the literature for a number of years.

McMillan and McClellan (1967) made an interesting point about the definition of the goals of teaching activities. They said that teaching is not always directed at learning and they introduced the NLO (non-learning objective). These are "... objectives which signal their presence by such locutions as 'understand' 'grasp', 'comprehend', 'appreciate'. and (perhaps)
others." (Macmillan and McClellan, 1969, p 137)

In a sense the distinction between learning and NLO's is a bit of a red herring, without a great deal of analysis to make the concept of the NLO clearer and more useful. It would be a gross injustice to philosophers such as Scheffler and Smith to suggest that they did not want to include such things as 'understand', 'grasp', 'comprehend', 'appreciate', etc., under 'learning' as aims and/or achievements of teaching. There is a need for a clearer analysis of the range and depth of what is the aim or result of teaching, but one can not do everything at once.

In the first chapter I dismissed an analagous treatment of 'teaching' as not helpful to educational theorists. Similar reasons to those I used to argue for a more discriminating analysis of 'teaching' could be used to show why an umbrella concept of 'learning' like the one I am using would not be acceptable to educators. But in this context, where the goal of the activity is the analysis of 'teaching', not of 'learning', one can see the usefulness of a makeshift definition which is very as open as possible. At some points, when discussing 'teaching' it will be necessary to be more discriminating and suggest different implications for different kinds of learning, rote memorising as against such objectives as understanding. But where possible it is useful to be able to be as open as possible about what is meant by 'learning', while getting on with the task of elucidating
the meaning of 'teaching'.

Komisar (1968) uses a similar distinction between learning as an objective of teaching and such other cognitive achievements such as understanding and awareness but he does not call them NLO's. He employs this distinction in order to render innocuous the thesis that teaching does not imply learning. His first move is to distinguish three levels of discourse at which "He is teaching" can be the answer to the question "What is he doing?"

"Consider these variations on What is he doing?:

1) What is he doing (as work, for a living)?
2) What is he doing (now, on Tuesday morning, during this hour)?
3) What is he doing (asked by an observer about some particular phase of a lecture, discussion, or other classroom performance presently going on)?

The first thing to say is that 'Teaching' is an apt answer to each question, albeit presenting a new aspect in each case:

1) Teaching names an occupation or an activity habitually, characteristically engaged in.
2) Teaching refers to a general enterprise, some activity being engaged in.
3) Teaching characterizes an act or alludes to an act as being of a certain sort (belonging to a certain enterprise of teaching)." (Komisar, 1969, p 68)

These three levels are the "occupation", "enterprise" and "act" levels. He then sets out to show that when one is most specific in describing teaching and talks of the act level the thesis that teaching implies learning becomes less and less appropriate;

"... as we become more strict regarding what is to count as teaching, the less likely it is that learning is the goal of the game, and the
more likely it is that teaching implies the achievement of that which is the goal." (Komisar, 1969, p 74)

In substantiating this he focuses on what he calls 'intellectual acts' which are such things as 'introducing', 'demonstrating', 'explaining', 'proving', 'defining', and 'indicating'. The goals of these he maintains can not be expressed by 'learning'. He suggests 'awareness' might do the job better. Even if we accept this definition of learning which rules out such achievements as understanding and go along with Komisar accepting that when we talk of teaching in the act sense the achievements of teaching acts cannot be described as learning, this only shifts the question from "Does teaching imply learning?" to "Does explaining imply understanding?", "Does indicating imply awareness?". These questions would then have to be addressed by the same sort of debate as has gone on over whether or not teaching implies learning. The debate over whether or not the achieving of Komisar's intellectual acts implies the achieving of their goals, might be more likely to be resolved in the affirmative than the debate over whether or not teaching implies learning, but there is still a question. It is not enough for Komisar to take it as evident.

Although Komisar's solution was far from satisfactory he has expressed well the roots of the concern of the teaching-learning debate.

"Teaching does not imply learning' suggests some sort of conceptual communion. Compare 'Teaching does not imply a 1956 Chevrolet', which is too outrageous to honor with denial. ... so a common presumption of engaging in
teaching is that it will, on the whole, produce some learning. If the learning continues to be absent, we don't quite say there has been no teaching, but it is a very, very near thing. At any rate, it's the kind of failure that immediately makes an accounting due. (Komisar, 1969, p 66-67)

So in spite of the fact that ordinary language does allow cases of learningless teaching, there is something unhappy about them. This is, no doubt, at the heart of what has kept the debate alive, and has prompted Helen Freeman to make yet another attempt to depose the prevailing view of teaching as an activity carried out with the intention that students learn.

I shall restate her set of necessary and sufficient conditions for teaching to be going on.

"(1) A is engaged in a transaction with B
(2) in which A's actions of activities in displaying, clarifying, exhibiting, eliciting, confirming or otherwise indicating, explicitly or implicitly, and x
(3) are instrumental in bringing about some learning or understanding of that x by B (that is, B is making progress towards a fuller learning of that x)." (Freeman, 1973, p 21)

The basis of her argument for this is the logical centrality of the 'achievement' of 'success' sense of teaching.

"The 'activity' analysis suggests that the 'task' sense is central. On the other hand, it seems to me that it must be the 'achievement', or (preferably) 'outcome' sense of teaching (and of any other verb which claims to have both senses) which must be central." (Freeman, 1973, p 9)
This is an analytic claim about the logic of language and she argues for it on the grounds that one cannot enter upon the task, that is, try to achieve, without knowing what it means to achieve, although it is possible to achieve without trying. In discussing this she uses three examples, winning a race, buying something, and teaching. She states that it is possible to buy without intending to buy, and although it is quite acceptable to say that one can do X without intending to do X, this does not lend much support to her argument concerning the logical centrality of the achievement sense of task-achievement verbs, as we do not usually consider intending to do X and doing X as task and achievement sense of X where X is a verb such as 'buy'.

In that winning is often cited in discussions of task-achievement verbs it seems a stronger example to argue from. Her argument runs that it is possible to win without trying to win (e.g. if one were just running for the exercise or practice) but it is not possible to try to win without knowing what winning is. This argument is, however, dependent upon using 'trying to win' rather than 'running in the race'. It is not possible to win without running in the race, and it could even be argued that it is possible to run in the race without knowing what it would mean to win. I am perhaps being a little harsh as there are clear cases of task-achievement verbs which support her analysis. It is possible to find without searching, but not to search without trying to find, but, on the other hand there are too many task-achievement verbs where this is
not so for Freeman's claim of the logical centrality of the achievement sense to stand unqualified. E.g. Freeman claims that teaching is one of those verbs one can achieve without being active in the task sense: "I can teach without intending to." If one accepts her analysis of teaching this is undisputable, but if one accepts the activity or intention analysis of teaching this would be what philosophers call a 'derivative case' of the concept, which means it does not really fit the criteria of the concept but can be designated by the word designating true cases of the concept through something like association.

Even if we grant Freeman her point that the achievement sense of teaching is logically central we must then ask "So what?". That we find without intending to search, but cannot search without intending to find, may mean that 'find' is more logically central to the way we talk about searching and finding; but it does not necessarily mean that when we are discussing searching and finding we should concentrate on finding. Whether we want to concentrate on the search depends very much on the context and purposes. In the training of search parties who are to search for lost mountaineers and trampers little would need to be said about finding, but a great deal about methods and strategies of searching. In watching the progress of trainees one might be less interested in how many people they found than in how they went about searching for them. The contrary may be true if discussing young Islanders searching through oysters
for pearls. There comes a time when we have to look beyond the logic of ordinary language and consider what it is we are talking about and what we want to be able to say about it. The debate on whether or not teaching implies learning has reached a deadlock. We have opposing factions and not really a way of choosing between them. In the next chapter, as I look at the various forms of verb philosophers have used to describe 'teaching', we shall see how the approaches to handling the relationship between 'teaching' and 'learning' have developed. It is no longer a question of whether or not 'teaching' implies 'learning' but how the two verbs relate.

FOOTNOTES.
1 For a full and cogent criticism of this paper see Berger, 1968.
CHAPTER III

TYPES OF VERB USED TO DESCRIBE "TEACHING"

Throughout the recent debate, 'teaching' has commonly been considered as an activity. Scheffler stated this in 1960, calling teaching a "goal-directed activity". He meant by this, to distinguish teaching from such verbs as "owning property" or "having reached the age of 45". These verbs do not refer to activities one can be engaged in, more or less successfully, they refer to states. Unlike many other activities such as sitting, breathing, or strolling (which may under certain circumstances involve trying) teaching always involves trying; to describe someone as teaching implies that he is trying to get someone to learn something. This can not be achieved instantaneously, teaching is an activity with takes time. It is not just a pattern of movements and cannot be described by a set of rules which will guarantee success. (Unless they be rules of the sort "Do what is appropriate in the circumstances".) There has been little further analysis of the use of goal-oriented or intentional activity as a verb form to describe teaching.

The notion of an activity has not received much attention in the philosophical literature. However, there is an explication by Anthony Kenny (1961). He distinguishes state, performance, and activity verbs.
His characterisation of state verbs agrees with Scheffler's. These are verbs which do not have a continuous present tense, e.g. one does not say "I am owning property" or "I am knowing the six times table". His distinction between state and performance verbs is made in terms of tensed verbs. In describing his distinction he discusses a number of characteristics which differ between state and performance verbs. He does not make explicit which of these are necessary for any verb to be categorised as a state or performance verb and which are merely contingently associated with most state or performance verbs. As his list of characteristics is long I shall take only the first three, which are the most formal, as the basis of my discussion.

(a) A performance verb is one for which the following proposition holds: "A is $\phi$ing implies A has not $\phi$ed". E.g. Mary is knitting the sweater implies Mary has not knitted the sweater. This is not, however, true for activity verbs; "John is giggling" is quite compatible with "John has giggled". On this condition Scheffler's "intention" and "success" senses of teaching can fit quite neatly into activity and performance verbs respectively. "Andrew is teaching Louise Bayes Theorem" in the success sense certainly implies that he (or anyone) has not already taught it to her, for if he had she would know it and he could not be succeeding in teaching it to her again, but this is not so for the intention or task sense of teaching. Similarly for Kenny's second criterion for distinguishing activity and performance verbs.
(b) Where \( \phi \) is a performance verb "A had \( \phi d \)" implies "A is not \( \phi \ing \)". In the above case this would be applicable. If Andrew has already taught Louise the Baye’s Theorem he could not be doing it now, but with the intention sense of teaching Andrew could have been teaching Louise, and still teaching Louise, if she is slow to grasp it. Kenny’s third criterion brings out the complexity involved in analysing 'teaching' in this way.

(c) This third condition requires that for a verb, to qualify as a performance the following proposition must hold: "A is \( \phi \ing \)" does not imply that "A had \( \phi d \)" will be true in the future. If we take the statement "Andrew is teaching Louise Baye’s Theorem", where teaching is to be understood in its success sense, it is problematic whether or not if fulfills this third condition. For it to be true that Andrew is teaching Louise in the success sense Louise must be learning, but the question is how much. If it is enough that she be learning part of Baye’s Theorem for Andrew to be having success then if they were interrupted in the middle of the lesson it could be true that Andrew was teaching Louise Baye’s Theorem at one point in time without its being true that Andrew had taught Louise Baye’s Theorem at a later time. But if only partial success is required by the success sense of teaching then some of the conclusions I made concerning the former two conditions are not so clear. Take for example the statement "Marie is teaching Peter New Zealand history". Clearly it can be true, even in the success sense of teaching that Marie is teaching Peter New Zealand history today and that
she has taught him New Zealand history yesterday, in that she could not have succeeded in teaching him all of New Zealand history yesterday. Similarly for the second condition that for a performance verb "A has θd" implies "A is not θing".

As I.A. Snook has pointed out to me 'teaching' is not unique as a verb which crosses Kenny's categories when the nature of its direct object is altered. 'Knitting' in the phrase, 'knitting a sweater' is clearly a performance verb, but 'knitting' without a specific object is an activity according to Kenny's criteria. It could be objected that 'knitting' must always have an object, that one can not knit without knitting something. This is true, but we do talk of knitting without specifying an object; "I like knitting" "Every night last month that I was home I sat and knitted in front of the T.V." "I have knitted for years". Even a verb like 'win' which is a prime example of an achievement verb according to Ryle's criteria can become an activity verb on Kenny's criteria if we tamper with its object. Suppose we were talking about a race horse, and instead of talking of 'winning the/a race' talked of 'winning a lot of races' 'win' becomes an activity. On the first condition, condition (a), 'winning the race' is a performance verb - "A is winning the race" implies "A has not won the race". But 'winning a lot of races' is not a performance verb. We could not say that "A is winning a lot of races" implies that "A has not won a lot of races". Similarly for the other conditions. (b) "A has won the race" implies "A is not winning the race" but "A has won a lot of
races" does not imply "A is not winning a lot of races".
(c) "A is winning the race" does not imply that "A has
won a lot of races" will be true in the future but "A is
winning a lot of races" would usually imply that "A has won
a lot of races" will be true in the future.

The above paragraph does not destroy Kenny's distinc-
tion, it just further elaborates it and shows us how wary
we must be of distinctions based on such analytic and
non-substantive conditions as those drawn from the behav-
ior of tensed verbs. Our interest in 'teaching' is not
in its grammatical properties as a verb but how the concept
relates the nature of the phenomenon it is used to repre-
sent. In this endeavour variations in the nature of the
object of 'teaching' can be of prime importance.

This ambiguity over just how much success the success
sense of teaching requires which makes it so difficult here
to fit the two senses of teaching into Kenny's activity and
performance categories is taken up by Kapunan (1973). His
account will be discussed later. That the intention sense
of teaching which Scheffler termed an activity does not fit
neatly into Kenny's analysis of activity is not of great
importance in itself. What is more important is the dif-
ficulty demonstrated in separating the two senses of teaching
according to such criteria as Kenny's. It may be that this
particular set of criteria is inappropriate; Kenny him-
self points out that his distinctions cut across Ryle's:

"Ryle's achievement-verbs fall into all three of our
categories -- "know" is a state, "cure" a performance,
"keep a secret" an activity." (Kenny, 1961, p 185, footnote)
But the possibility must be kept in mind that the two senses of teaching which have been separated in the debate are less discrete than has been assumed. With these reservations kept in mind, then, I shall return to the analysis of teaching as a goal-oriented or intentional activity.

Scheffler, in his description of teaching required more than that a person be engaged in an activity with the goal that someone learn. He posed certain restrictions of manner, and required the teacher's actions to be "not unreasonably thought to be likely to achieve the learning aimed at" (p. 68). Hirst and Peters (1970) argued in a similar vein, that what was to be learnt must be indicated or exhibited "... in a way which is intelligible to, and within the capacities of, the learners." (p 81) Such requirements narrow the gap between the intention and success sense of teaching. Snook (1972) argued that it was unnecessary to add such requirements as he maintained the concept of 'intention' suggested...

"...some connection between what one is doing and what one is intending. I cannot intend to chop down a tree with a rubber axe or intend to destroy the moon just by thinking about it. ... On my account, a person cannot intend to do something which cannot be done, even if he thinks it can be done ..." (Snook, 1972, p 101)

Similarly, Hare (1969, p 56) claims that we cannot say someone has tried unless what he was trying to do was quite possible. Given that teaching involves trying (Scheffler, 1960, p 62) then if we go along with Hare and concede that one can not be said to have tried unless his task was possible it would not be so important to require
that the teacher's actions be "not unreasonably thought to be likely to achieve the learning aimed at". We would already have conceded this if we accepted that the teacher had tried.

Unfortunately, as Snook, himself, points out, Snook's and Hare's viewpoints are not widely adhered to. Meiland (1970) concludes that what is required for us to say that someone intends to do something is that he, the doer, believes it possible (p 43-7). Similarly for trying; according to Meiland it does not have to be possible for the agent to achieve the goal in order for us to say he tried, so long as the agent believed there "... was some probability that the performance of those actions will consist in or bring about the doing of X and must be able to give some reason for his having this belief." (p 70) Depending on how one interpreted the requirement that the agent have a reason, however, Meiland's position may be closer to Hare's than it first appears. One could interpret Meiland's condition as requiring that the agent be able to give just any reason at all or that the agent's reason be one any reasonable person would accept. How this would alter the effect of his condition can be seen through consideration of a simple example. Take a person who was standing on the beach watching his wife drown, making no effort to get help, but stretching his hand out towards her. He might say he tried to save her. If challenged and told that it was ridiculous for him to say he tried to save her because there was no possibility he could do this by stretching out his hand, the un gallant husband might reply saying that he believed it possible that he could save his
wife by stretching out his hand because they were a very close couple and the moral support his wife would receive from seeing his outstretched hand would be enough to give her the strength to swim to shore. Here is a situation where it was clearly impossible that the agent's efforts could achieve the feat in question, and yet the agent believed it possible and was able to offer a reason for this belief. (This is presuming the husband to be sincere, of course.) If Neilland would say that the reason offered did not qualify as a reason because it was so totally absurd then his position would be very close to Hare's. If this were the case then what Neilland would be requiring would be not only that the agent believe it possible that his 'trying' be effective, but that it be reasonable to believe that it was possible that his 'trying' could be effective.

What confuses the issue even more is that there are even those who argue that it is possible for someone to intend something when he, himself, knows it is impossible. G.E.M. Anscombe (1963) writes:

"In some cases one can be as certain as possible that one will do something, and yet intend not to do it... A man could be as certain as possible that he will break down under torture, and yet determined not to break down." (Intention, p 93)

Thalberg (1962) argues in a similar vein. Thus, it seems, that although it would make a much neater analysis if the likelihood of success could be built into the having of intention this is not consistent with a full account of 'intention'. Thus it seems the activity analysts must include some criteria like those of Scheffler and Hirst and
Peters to insure that their analyses do not become too far divorced from the goal of promoting learning.

Unhappy with such a situation Freeman introduced her analysis with its emphasis on the success aspects of 'teaching'. She proposed that teaching should not be viewed as an intentional activity but as a 'perficience'. In coining this term she drew on Austin's analysis of perlocutionary acts (Austin, 1955). A perlocutionary act is a speech act identified by its consequences upon "...the feelings, thoughts, or actions of the audience, or of the speaker, or of the other persons..." (Austin, 1955, p 101). Examples are 'persuade', 'insult', or 'annoy'. They can be distinguished from verbs such as 'protested', argued', or 'urged' where some attempt is made to influence the audience but need not succeed. The claim "He urged me to do it" can be true whether or not he succeeded, but "He persuaded me to do it" can be true only if his urging succeeded in affecting my behaviour. Freeman has used 'perficience' to extend the category of perlocutionary acts from speech acts to all acts. Thus a perficience is a verb which is identified by its consequences. Thus for 'teaching' to be analysed as a perficence means that one can say teaching has been going on only if there is evidence that the appropriate consequences, learning, have occurred. So we are returned to a situation of "no teaching without learning".

Freeman's object is to focus attention once more on the achievement or success sense of teaching. It is
clear that teaching defined as a perficience includes only the achievement sense of teach. It would not be hard to argue that perficience verbs form a subclass of achievement verbs as defined by Ryle in *The Concept of Mind.* He does not define his distinction explicitly in this book but from his discussion I have drawn three conditions which I shall take as characterising the difference between task and achievement verbs.

**Condition (i)**

"One big difference between the logical force of a task verb and that of a corresponding achievement verb is that in applying an achievement verb we are asserting that some state of affairs obtains over and above that which consists in the performance, if any, of the subservient task activity." (Ryle, 1949, p 150)

**Condition (ii)**

"... while we expect a person who has been trying to achieve something to be able to say without research what he has been engaged in, we do not expect him necessarily to be able to say without research whether he has achieved it." (Ryle, 1949, p 150-151)

**Condition (iii)**

"Adverbs proper to task verbs are not generally proper to achievement verbs." (Ryle, 1949, p 151)

It is clear that according to the first two conditions perficience verbs qualify as achievement verbs. The state of affairs required over and above the task activity is the consequence of the perficience (e.g. the other person's being insulted or annoyed) and the actor would have to do some research as to whether or not such consequences had occurred before he could say he had performed a perficience.
The third criterion is not so easy to apply. Ryle does not specify a list of adverbs appropriate to task verbs in general, but gives certain groups of adverbs which are not proper to certain groups of achievement verbs.

"...heed adverbs like 'carefully', 'attentively', 'studiously', 'vigilantly', 'conscientiously' and 'pertinaciously' cannot be used to qualify such cognitive verbs as 'discover', 'prove', 'solve', 'detect' or 'see', any more than they can qualify such verbs as 'arrive', 'repair', 'buy' or 'conquer'.

But perception verbs cannot, like search verbs, be qualified by such adverbs as 'successfully', 'in vain', 'methodically', 'fully', 'reluctantly', 'zealously', 'obediently', 'deliberately' or 'confidently'." (Ryle, 1949, p 151)

The division, however, between groups of adverbs appropriate to the achievement verbs he cites and those not appropriate. We do speak of "proving carefully", "repairing studiously", "seeing rapidly", or "hearing obediently". Ryle's distinguishing these groups of adverbs is not, however, as empty as I might appear to believe. I have picked out cases where his claim founders but I must concede that when we speak of "proving carefully" we are thinking more of developing the proof than of the actual achievement in proving. Similarly with the other verbs. As Ryle himself points out, talk of "seeing rapidly" might be more accurately considered talk of "coming to see rapidly". But because the use of these adverbs with achievement verbs outside the specific groups Ryle specifies is even more common, they are no help at all in distinguishing achievement verbs in general from task verbs. "Convince", being a perlocutionary verb must qualify as a perlocution. Try "he convinced her
'methodically', 'rapidly', 'carefully', 'reluctantly' etc.,". These are all quite acceptable, and yet Ryle himself cites 'convince' as an example of an achievement verb (p 149).

It may be remembered from Chapter 2 that Smith (1961) argued that 'teaching' was a task verb on the grounds that one could talk of 'teaching successfully'. It is possible to use 'successfully' and 'unsuccessfully' to distinguish task and achievement verbs. We could adjust condition (iii) to read: "The adverbs 'successfully' and 'unsuccessfully' can be used with task but not achievement verbs." This does not add a great deal to the preceding conditions as it is already clear that to achieve something is to do it successfully but it is worth including on the grounds that it is more straightforward to apply that the first two conditions, although as Gowin (1961) pointed out, such a simple rule of thumb may be misleading under certain conditions. One can use 'successfully' and 'unsuccessfully' with achievements when the success is in some other endeavour from achieving the task. E.g. I might talk of insulting unsuccessfully if I were unsuccessful, not in the insulting, but causing her to avoid me as a result of the insult. "I insulted her but I insulted her unsuccessfully, she still hangs around me whenever we are at the same function." In any event according to this revised version of condition (iii) perforience verbs do qualify as achievement verbs. 'Successful' and 'unsuccessful' are inappropriate adverbs to use with them because given that a perforience is identified by its consequences it must have been successful in bringing about its consequences in order to have occurred.
So we now have two sides of the debate over whether 'teaching' is best categorized as a task or achievement verb. Freeman, as I have shown, gives an analysis whereby 'teaching' is to be categorized as an achievement verb, whereas the popular view has been that 'teaching' is best understood as an activity. It is interesting to look at this characterisation of 'teaching' as an activity in relation to the conditions I have set out as differentiating task and achievement verbs. As Smith has already shown us 'teaching' clearly qualifies as a task verb on the third condition. We can and do talk of teaching successfully or unsuccessfully. We would expect a teacher to be able to say without research whether or not he had been teaching (where 'teaching' is defined as an intentional activity). But the first condition is not so clear. This states that when using an achievement verb... "we are asserting that some state of affairs obtains over and above that which consists in the performance, if any, of the subservient task activity." (Ryle, 1949, p 150) It is clear, in the light of this condition, that Freeman's views 'teaching' as an achievement verb. What is required over and above performance of the task is that learning occur. This is not required by the intention analysts, but certain other states of affairs, such as the presence and perhaps, attentiveness of the pupils are usually required. Thus we can see that to refer to the analysis of 'teaching' as an intentional activity and Freeman's analysis of 'teaching' as a perforcience as task and achievement views of 'teaching' is to oversimplify the issue. Under Freeman's analysis
'teaching' is an achievement verb, but under the activity analysis, although 'teaching' is more like a task verb than an achievement verb it does have one feature of an achievement verb.

The more recent literature in the 'teaching' debate centres largely on shortcomings of the task-achievement distinction as used by those writing on the concept of 'teaching'. However, it is not only recently that the inadequacy of the distinction has been a subject of discussion. McMillan and McClellan (1967) set out to show that "... the task-achievement distinction is not subtle enough to contain teaching and learning". This claim is becoming increasingly accepted in the literature and it should now be clear that I am in full agreement with the substantive point McMillan and McClellan are making. The arguments on which they base this claim however, contain some extremely unfortunate oversights.

The first of the objections they consider decisive rests on a distinction between pairs of task and achievement verbs which are strongly and weakly parallel. A pair of verbs with a strongly parallel task-achievement relation would be one like "hunting for a wife" and "finding a wife" where the task verb, ("hunting for a wife") can be replaced by "trying to" plus the achievement verb, ("trying to find a wife") with no change of meaning or truth value. A pair of task-achievement verbs for which this is not true are weakly parallel. (E.g. "running a race" and "winning a race" are weakly parallel because one cannot replace "running a race" with "trying to win a race" without changing
its meaning. McMillan and McClellan claim that teaching and learning, as a pair of task-achievement verbs are not amenable to this distinction.

"The relation is not weakly parallel, for we could not understand (without a great deal more questioning) a man who claimed that he was teaching somebody something but denied that he was trying to get something across to that somebody."
(McMillan and McClellan, 1969, p 136)

This is a little odd in itself. In describing the distinction between strongly and weakly parallel pairs of verbs McMillan and McClellan say:

"When "trying to" plus achievement verb can be substituted for the corresponding task verb without change of meaning or truth value, we call the relation strongly parallel, otherwise weakly parallel." (McMillan and McClellan, 1969, p 136)

A verb is designated weakly parallel by not fulfilling the criteria for being strongly parallel. However, this is not a decisive objection. It is clear that a characteristic of a pair of verbs like "running a race" and "winning a race" which are weakly parallel is that one could understand a man who claimed that he was running a race but not trying to win it. McMillan and McClellan could have made such a condition part of their distinction. Assuming something like this I shall return to their claim that teaching and learning are not weakly parallel because we would have difficulty understanding a man who claimed that he was teaching somebody something but denied that he was trying to get something across to that somebody. One would then expect that teaching and learning could be shown to be strongly parallel because one could
replace "teaching something to somebody" with "trying to get something across to somebody". But this is not allowed by McMillan and McClellan.

"On the other hand, the relation is not strongly parallel, for getting somebody to learn something is not necessarily what one is doing when one is teaching. There may be other objectives one is trying to reach. We can well understand a comment like the following: "I'm teaching my class quadratic equations, but I'm not trying to get them to learn quadratic equations but rather to get them to appreciate the abstract quality of mathematical reasoning." (McMillan and McClellan, 1969, p 136)

What McMillan and McClellan have done here is equivocate on what they mean by 'teach' and 'learn'. If we interpret 'teaching' and 'learning' broadly so that 'teaching' involves "getting something across to someone" and 'learning' includes such achievements as appreciating, understanding etc., then they are clearly strongly parallel. We could replace "teaching" with "trying to get someone to learn" and we would then say of the maths teacher that he was trying to get an appreciation of the abstract quality of mathematical reasoning across to his pupils. But if we interpret both these concepts more narrowly so that 'teaching' means trying to inculcate learning where 'learning' excludes such achievements as appreciating, understanding, etc., then 'teaching' and 'learning' are weakly parallel. We could not automatically say that someone who was teaching was trying to get them to learn. He might be trying to get them to appreciate or understand. What McMillan and McClellan have done is use the former interpretation of the meanings of 'teach' and 'learn' to show that they are not weakly parallel and the latter interpretation of their meanings to show they are not
strongly parallel. They have succeeded only in pointing up the complexities in the relationship between 'teaching' and 'learning' which are not fully captured by the task-achievement distinction.

There is no such glaring confusion in what they call the "final and conclusive reason" for the inappropriateness of the task-achievement distinction to describe the relationship between teaching and learning.

"...let us first note why any task and achievement verbs are called corresponding; they correspond in that trying to achieve is necessarily doing the task, not in that doing the task is necessarily trying to achieve. But there is not any necessity in the relation between 'teach' and 'learn'. Trying to get someone to learn is not necessarily teaching, for there are restrictions of manner and motive on teaching which do not apply, say to propagandizing, conditioning, hypnosis, or lobotomy—any one of which (under suitable conditions) could be an instance of trying to get someone to learn something." (McMillan and McClellan, 1969, p 137)

This line of argument is quite effective in showing that 'teaching' and 'learning' should not be called 'corresponding task and achievement verbs', given that we accept McMillan and McClellan's statement of what is required for two verbs to be called 'corresponding'. This is a moot point, because, as I have stated elsewhere the task-achievement distinction as used in this debate is not clear enough for us to be as precise as McMillan and McClellan concerning what is required of the relationship between any pair of task and achievement verbs. But McMillan and McClellan's point must stand to the extent that we must accept the task-achievement relation between 'teaching'
and 'learning' as rather different from that between say, 'search' and 'find'. But this is not new. Few of the writers in the area have referred to 'teaching' and 'learning' as 'corresponding'. Smith specifically refers to 'learn' as being the parallel achievement word. Scheffler never suggests his 'intention' and 'success' senses of 'teaching' are corresponding.

In the last couple of years there has been a resurgence in the literature on the task-achievement distinction as applied to 'teaching'. Kapunan (1975) argues that it is mistaken to view the relationship between 'teaching' and 'learning' as a task-achievement relationship because 'learning' itself has both a task and an achievement sense so the relationship between teaching and learning can be characterised as a task-task as well as a task-achievement relationship. Kapunan brings the task sense of 'learning' into the teaching debate by using the notion of 'executive achievement'. This is to be contrasted with a 'terminal achievement' which would be something like covering a certain portion of the syllabus while 'executive achievement' would involve having 'got going' in the activities required to achieve the 'terminal achievement'.

"If the terminal objective were a brick house, every brick laid constitutes as an achievement contributory towards the final end in view. This attempt to execute a task (merely doing) is what I have dubbed as executive achievement. It seems incontrovertible to assert that merely trying to execute a task has its own intrinsic achievement which serves as the basic unit that makes up the final product." (Kapunan, 1975, p 375)
Kapunan grants that the notion of executive achievement is not generally a very important one, but what it allows him to do here justifies his having added yet another term to the 'teaching' debate. He then argues that although teaching does not imply terminal achievement in learning it does imply executive learning achievement. That is, although the pupils may not achieve any learning they must, at least have got involved in some learning activities, even if it is only listening to the teacher. Thus the teacher cannot be said to be teaching if he is having no effect on the pupils at all.

Kapunan's point is an important one although there are a few difficulties with his claim that there is a task sense of 'learning'.

"...there are activities which we undertake for the explicit purpose of achieving some learning objectives. I may read the newspaper to learn about the 'Watergate scandal'. Then I may pick up a tennis handbook so as to learn the principles and techniques of proper serving. Subsequently, I may go out and practice how to serve a volley. ... It seems clear that, in these cases presented, I am using 'learn' in its task sense."
(Kapunan, 1975, p 366)

What Kapunan is pointing to in these examples is most important to his argument. But it is not what we would normally call a task sense of learning. Take "I may read the newspaper to learn about the 'Watergate scandal'."

What I would like to claim is that 'learn' here is an achievement verb while reading the newspaper is the activity (task) by which the goal in learning is achieved. Kapunan, himself, talks of the "learning activities"
undertaken in the above examples:

"... studying the rules and principles governing the game of tennis; considering various interpretations and execution of the rules; memorizing the sequence of moves entailed in an offensive strategy; analyzing my own methods of execution, mistakes, etc., ..." (Kapunan, 1975, p 366)

Kapunan summarizes his claim as to the existence of a task sense of learning thus:

"Therefore, the task sense of learning is a generic term which includes various species of activities, such as: studying, analyzing, evaluating, comparing, criticizing, memorizing, practicing, etc.," (Kapunan, 1975, p 366)

This could be accepted as an unusual approach to the distinction between the task and achievement senses of verbs if Kapunan were seen as postulating a new verb, defined as above, which was to be the task sense of learning. But Kapunan wants more than this. He goes on to say:

"Instead of saying, for instance, "I am studying the rules of tennis," I may say, "I am learning how to play tennis". Or, instead of saying, "I am analyzing the offensive strategies of B.J. King," I may say, "I am learning about the offensive strategies of B.J. King."" (Kapunan, 1975, p 366)

He acknowledges the point that "I am learning how to play tennis" says a lot less than "I am studying the rules of tennis" in that the latter statement specifies what sort of activities are being engaged in in order to produce this "learning how to play tennis", but it also says a lot more. If we say someone is studying the rules of tennis we are describing the activity he is engaged in. But if we say someone is learning how to play tennis we have not been so specific in describing his activity but there is an
implication that some state of affairs holds over and above the performance of that activity. A statement that someone is learning something usually involves an implication of some progress towards achieving the learning. We do, in some cases, talk of learning where there is no such implication of success. E.g. "I am learning this list of verbs" where what this means is that I am reciting them to myself. I might say "I have been learning Maori for six months but I don't know any at all" where I mean I have been to classes and learned nothing. But such instances cannot really be said to comprise a task sense of learning.

This is not damaging to Kapunan's substantive point. This still stands if we talk of learning activities, where Kapunan has talked of the task sense of learning. Thus what the teacher must do in order to be teaching is not actually get his students to learn, but succeed in attaining the executive achievement of getting his students involved in learning activities. This changes the nature of the task-achievement debate on teaching.

In discussing activity analyses of 'teaching' I suggested that the task sense of teaching as described by the activity analysts did not quite meet Ryle's criteria for a task verb. Scheffler and Hirst and Peters had included conditions which would give the intent sense of teaching some link with success, conditions requiring that success be empirically likely. Kapunan offers a different way of doing this which is much more clearly articulated and would deal with the case where the pupil
refused to go along with the teacher. Even if what the teacher was doing was "not unreasonably thought to be likely to achieve the learning aimed at" (Scheffler, 1960, p. 68) and/or "intelligible to, and within the capacities of, the learners." (Hirst and Peters, 1970, p. 81) there would be no learning if the pupils were just not attending. Hirst and Peters criteria are unwieldy in that a large amount of empirical investigation might need to be gone into in order to ascertain whether or not they were being fulfilled. And in not accounting for the situation where the pupils do not attend they do not achieve their function in linking teaching activities with likelihood of success nearly as well as does Kapunan's much more easily identifiable and definable account.

As I pointed out earlier Ryle's task-achievement distinction is not clearly defined. It is also important to remember that it was devised for a specific purpose of addressing what Ryle saw to be an absurdity in the way philosophers were using certain terms. He was trying to separate certain sorts of words which when used signify that some activity has been entered into and that there was some other external condition fulfilled. It seems to me that this is precisely the issue the task-achievement analysis of teaching was introduced to address. The proponents of the "teaching-implies-learning" argument were claiming that to say someone was teaching was to say they were engaging in the activity and, outside of that, the pupils were learning while the activity analysts proposed that to say that someone was teaching was to do
no more than specify what sort of activity they were engaged in, although they agreed that there was a sense in which one used 'teaching' so that to say that someone was teaching was to imply that there was success over and above the engaging in the activity. Calling these task and achievement senses of teaching seems to fit in well with Ryle's analysis. Even if this were not so it has seldom been claimed that the distinction as applied to teaching was identical to Ryle's, it has usually been claimed to be 'drawn from' Ryle's distinction.

Although the use of such a distinction in the 'teaching' literature was quite appropriate it has, in certain cases, been abused. Green (1971), as Sersfini (1976) shows, has grossly missused the distinction in trying to employ it to support an argument that the relationship between teaching and learning is not causal. One of his arguments is that the relationships between task and achievement verbs are not in general causal.

"We do not say that winning a race is caused by running it, nor that running the race is what produces the winning. Winning the race is simply one result of running; it is simply running and coming in first. Neither can we say losing the race is caused by running it. Losing, in fact is simply another result of running: it is running the race and not coming in first. To say that teaching and learning are related as task and achievement is therefore to say that teaching and learning are related neither by a close logical or analytic tie nor by any causal connection." (Green, 1971, p 141)

Sersfini shows how Green is mistaken in assuming that all task and achievement related verbs are alike in being non-causally related. His arguments are more elaborate
than is necessary for the point I wish to make and so I shall not cite them, but shall illustrate the point with a few examples. There would be nothing odd in stating the treatment caused the cure, or that, an injury was caused by shooting and yet 'treat' - 'cure' and 'shoot' - 'injure' are quite acceptable as pairs of task-achievement verbs. Green has made an oversight similar to that made by McMillan and McClellan in their final argument. He has taken an attribute common to many pairs of task-achievement verbs and argued that because most pairs of task-achievement verbs have this particular attribute it is a necessary requirement for any pair of task-achievement verbs. Even if we could not have found a pair of task-achievement verbs which admitted of a causal relationship it would still not have been acceptable to argue from the fact that 'teaching' and 'learning' could be paired as task-achievement verbs to conclude that they could not be causally related. To say that 'teaching' and 'learning' can be paired as task-achievement verbs is to say that they resemble certain other pairs of verbs in fulfilling certain (not overly definitive) conditions. (That the resemblance is limited has been shown more than once) If the group of verbs with which 'teaching' and 'learning' have been associated prove to have some common attribute (in this case not being causally related) then it is a matter for investigation whether or not this attribute is shared by 'teaching' and 'learning'.

I have dwelt long on the task-achievement distinction, and, while I have tried not to under-estimate its importance, as the discussion progressed its limitations have become
overwhelming. In the early stages of the debate, where our understanding of 'teaching' was diffuse, the distinction was most illuminating. But over the years since Scheffler and Smith applied the distinction to 'teaching' the literature has developed to such a point that a more highly developed verb form is required to articulate the complexities of the relationship between 'teaching' and 'learning'. Refinements of the task-achievement analysis, such as that made by Kapunan, advance our understanding, but there comes a time when we must break out of the standard view and head off on a new tack.

FOOTNOTES.

1 Marshall (1975) argues that the analysis of 'teaching' in terms of Ryle's task-achievement distinction has been quite faulty. What he is referring to in this paper is a distinction in terms of tensed verbs which has been explicated in publications other than The Concept of Mind. As it is only The Concept of Mind which has been referred to by those writing in the educational literature I shall take Ryle's distinction as it is explicated there.
TEACHING AS A GOAL-CORRECTED INTERACTION

The analysis of 'teaching' I propose is based on a type of verb which arose in a context well removed from that of analytic Philosophy. It was developed by ethologists faced with the problem of wanting to talk about purposive behaviour in animals but being able to use only behavioural concepts in order to fit in with the requirements for a behavioural science which did not allow the use of mentalistic terms. Since it was not permissible to talk of animals as having intentions or working towards goals, they had to describe only what could be seen. In order to describe purposive behaviour in behavioural terms they developed the concept of goal-corrected behaviour.

"What characterizes a goal-corrected system is not that it reaches a predictable outcome but that it does so by a special process; from a large repertoire of stereotyped or variable movements, the system selects movements in a non-random manner and in such a way that they bring the animal progressively nearer the set-goal. The more sophisticated the process the more economical the behaviour. Efficient goal-corrected behaviour is variable, not necessarily in the sorts of behaviour used, but in the large number of starting-points from which the set goal can be reached (Hinde, 1968).

Two vital components of a goal-corrected system are:

(a) a means of receiving and storing instructions regarding the set-goal, and
(b) a means of comparing the effects of performance with instruction and changing performance to fit." (Bowlby, 1971, p 98-99)
Using this concept we can link 'teaching' to 'learning' without requiring that teaching always imply learning. To say teaching is a goal-corrected activity is not to say that it has a particular achievement, or involves particular responses, or that the actor has a particular intention, but that it is visibly directed towards a particular outcome in that the teacher's behaviour is modified by feedback to bring the set-goal (pupil learning) progressively nearer. This idea can be illustrated in the hawk's swooping on a mouse. We say the goal of the hawk is to capture the mouse, not because we know that is its intention, nor because hawks involved in this sort of situation usually succeed in capturing the mouse, but because we can see that the hawk modifies its behaviour to bring it closer to the mouse. If the mouse altered its direction of flight so would the hawk alter its course to follow, or if the wind currents blew it off course it would mend its course towards its prey. Even if the mouse eventually escaped we would be able to say that the hawk's goal had been to capture it. We would not have to wait until afterwards, when we could assess the success of the hawk's behaviour to know what it was directed towards.

I shall define 'teaching' as an interaction so that to say that A is teaching B is to say A is engaged in goal-corrected behaviour where the goal is some inculcation of learning in B. A teaching episode would be characterised by an interaction between A (teacher) and B (pupil) where A was explicating some X for B to learn, eliciting
feedback from B as to his progress in learning A and interpreting that feedback to monitor his explicating behaviour. ¹

In any teaching interaction it would have to be evident that the processes of the teacher's eliciting feedback, interpreting it and modifying his behaviour were progressing towards some goal of pupil learning. The teacher's explicating or indicating could take many forms. It would often be verbal, but need not be as with the case of a swimming teacher who demonstrated different strokes, or guided the pupil's arm. It could take the form of questioning, where the teacher might suggest some other contingency the student had not allowed for and say perhaps "But what if such-and-such were the case?" Or the teacher might direct the student's attention to something he had overlooked. The exact nature of the teacher's explicating behaviour could take a number of forms. Throughout discussion of my analysis of 'teaching' I shall for convenience refer to all these various forms as 'explicating', because we have no word or simple phrase in our language which captures fully the diversity of the sorts of behaviour the teacher might engage in. This diversity is considerable but not unlimited. The vital factor in identifying a teaching interaction is the appropriate handling of elicited feedback and usage of this by the teacher to modify his behaviour to work towards his goal. The precise nature of his explicating behaviour is not so important as the fact that it is modified
according to the teacher's interpretations to show evidence of his working towards some goal of pupil learning.

The requirement that the teacher and pupil be in interaction means that it is not possible to teach without co-operation of the pupil. If the pupil will not attend or respond the teacher is unable to teach him. It may also be impossible if the pupil spoke a foreign language, was deaf, or had some other impediment to communication. Given that the student is playing his part and the interaction is possible the requirements of the teacher are that he explicate or indicate what is to be learnt, elicit feedback, interpret the feedback and monitor his explicating or indicating behaviour in view of the feedback. If the teacher just explicated or indicated what was to be learnt without eliciting feedback I would not say he was teaching. It may be that he elicited the feedback, but could not interpret it or ignored it. Even if he were very successful in getting the student to learn I would not say he had induced this learning by teaching, but by some other means.

The conditions just stated, that the teacher explicate or indicate what is to be learned, elicit feedback, interpret the feedback and monitor his explicating or indicating behaviour, are logically necessary for us to say the teacher was teaching. Each of these may be done well, or not well and different ways which will differ in effectiveness. Empirical research can establish what is teaching
well or effectively, but a teacher must fulfill all these conditions (and have a co-operative pupil) to be teaching at all. Even if the teacher is not teaching very well, there is a success criterion built into this analysis, for if a teaching interaction had been going on we would expect some learning, however minimal or temporary to have been going on. This is, however, an empirical, not a logical connection. In fact if we had decided that an interaction fulfilled the criteria for it to be a teaching interaction and there was no evidence at all of any learning in the pupil it might lead us to reconsider our decision to call it teaching. This analysis cuts right across the task-achievement distinction. Teaching is neither a task nor an achievement. Teaching does not logically require learning but is strongly connected empirically to it; learning-less teaching is not likely to occur for long.²

Because of the requirements which have to be met before we can say someone is teaching we can talk of trying to teach without any consideration of whether anyone is learning. To say someone tried to teach and succeeded would be saying that they set out to get a teaching interaction going and succeeded in this. A teacher could try to teach and fail for all sorts of reasons. He might be explicating and attempting to elicit feedback in order to monitor his explicating behaviour but his 'pupil' not co-operate. The pupils may be so lacking in prior knowledge the teacher has to change his goal. "I tried to teach them fractions but their simple arithmetic was so poor I had to go back and teach
them simple multiplication". The teacher could get into the situation where he found the feedback he was getting from the pupil so odd or inexplicable that he might be completely dumbfounded as to how to monitor his explicating behaviour. This could happen where the pupil had picked up very odd ideas, or what he misunderstood was so basic the teacher could not even see it as something to be explained. "I tried to teach it to him, I could see he did not understand, but I couldn't, for the life of me, see how I could clear up his misunderstanding, so I had to give up the attempt." Then there is the case of the teacher who thinks he is teaching but his ideas about what causes learning are so absurd that what he does bears no relation to what actually causes learning. He would not actually be succeeding in teaching, not because his actions were not successful in causing learning, but because he would not be seen to be engaged in goal-corrected behaviour. His behaviour might be goal-directed in the sense that he had a purpose and was directing his behaviour towards this goal, but not goal-correcting because an outside observer would not see that he was correcting his behaviour according to feedback to bring him closer to his goal. If the teacher had no idea how to correct his behaviour towards the goal then an outside observer would see his behaviour as random, there would be no evidence of working towards a goal.

It is possible that 'trying to teach" could be given an interpretation similar to this under Hirst and Peters'
analysis, though this would not be usual. One might say a person tried to teach and failed if he set out to get pupils to learn something but failed to present the material in a way which was intelligible to the learners. In this case he would have failed to execute the activity of teaching, and would also probably fail in getting the pupils to learn. Under my analysis, however, one might fail to teach even though one succeeded in getting the pupils to learn. Perhaps the student would not co-operate in giving feedback but was listening to what the teacher was saying. Or the teacher might have been unable to make sense of the pupil’s responses and thus unable to monitor his explicating according to them. In both these cases the teacher would have failed to teach but might have succeeded in getting pupils to learn. But teaching is only one way of inculcating learning. Most teachers would spend only a small proportion of their classroom time actually teaching although most of their time might be spent in activities aimed at producing learning.

My analysis restricts teaching to those situations where the teacher is most intimately involved in inculcating learning. But much of the learning which goes on in the classroom is brought about through less intensive methods. Lecturing is commonly used to transmit information. We are inclined to think of a lecture as a long, monotonous address given by someone in authority with little regard for the feelings and interest of the
audience. Such a situation is far removed from a teaching interaction, but it is not necessarily characteristic of a lecturing situation. It characterises a poor lecture. Any lecturer with reasonable facility would make some use of feedback. In many cases this would not go beyond watching for signs of boredom. He may use such feedback to monitor his own behaviour, perhaps by cracking a joke as he feels the attention of the class flagging. The class's state of boredom, of course is not unrelated to the degree to which the class is coming to understand or comprehending what the lecturer is trying to put across, and such interest maintaining behaviour will, no doubt, help the lecturer to put across his material more effectively. But in that the lecturer would be getting feedback as to the class's level of interest rather than their state of comprehension or progress in learning such use of feedback differs from that required in my analysis of 'teaching'.

Suppose, however, that the lecturer, rather than watching the class for signs of boredom, were watching it for signs of comprehension, whatever these may be. And, suppose that when the lecturer perceived such signs slowed his pace or included some expository examples. There is the problem that the lecturer could not be watching the eyes of everyone in the audience, and even if he could, signs of comprehension would be unlikely to be similar in all. What this means is that he would be interacting with only a small section of the class, so if we
were to say he was teaching then he would not be teaching the whole lecture theatre. But although his behaviour resembles teaching in a number of ways there is a vital element missing. It is required for someone to be teaching, not only that he make use of what feedback happens to arise, but also that he be active in eliciting it.

It would be possible for a lecturer to ask for questions, or give students the opportunity to ask for clarification (elicit feedback) and respond in such a way as to be monitoring his behaviour in accord with what members of the class said. In this case he would have stopped lecturing, and may have started teaching those individuals in his class with whom he was interacting. One way a lecturer may use feedback from the whole class to modify his behaviour in further lectures, would be to give course evaluations or tests at the conclusion of lecturing courses and use the results to modify next years' course. But this is not teaching, for who are his pupils? He is not teaching the first year because he does not modify his behaviour in lecturing to them, but neither is he teaching the second year for he has not elicited feedback from them. The case where the teacher gives a course of lectures, then tests to see how well the students are grasping the material, and modifies his lecturing to remedy the deficiencies which have shown up in the tests looks more like teaching. There is a sense in which they could be said to be involved in an inter-action. The lecturer explicates and elicits feedback in
lecturing and giving the tests, the pupils react, in
doing the test and the lecturer modifies his future lect-
ures in line with his interpretations of the pupils' 
feedback. But this is rather more drawn out than a
situation we usually call an interaction. Whether such 
a case is described as teaching or lecturing is of less
importance than the observation that it is not a central
case of either. Such discussion makes it clear that the 
boundaries of the proposed concept can be disputed. And
although the boundaries may be made more distinct by 

further analysis, exactly where they are drawn is not of
great importance. At certain points lecturing, particularly
good lecturing will shade into teaching.

Where the aim of the teacher is to transmit a body
of factual information which the students can be expected
to have little difficulty in understanding the teacher
will tend to lecture rather than involve himself with the
pupils in teaching. Alternatively he may direct them to
private study, perhaps allotting them material to read,
or setting projects where the pupils have to gather their
own material from various sources. Where the teacher does
no more than point out certain passages in text books and
require that the pupils read them there is no teaching
going on. But where the students are required to gather
their own material the role of the teacher is more demanding.
He may well be involved in feedback interactions with
particular pupils where he is teaching them how to use
libraries, or look up something in the index of a book.
One would hope that such an interaction would lead to the
pupil's learning a great deal, and one hopes, to his learning a great deal more than the teacher taught him. For the teacher can be said to have taught the pupil only what he learnt in the interaction. For example, if a pupil is required to find out the principal exports of Denmark he may not know where to begin. He might have a series of interactions with his teacher. The teacher may teach him how to look for books which might contain this information in the catalogue of the school library. Then he might teach him how to find a book from its classification in the catalogue. He may then have to teach the pupil how to find the specific information by using the index and scanning cited pages. This final interaction ends with the teacher's having taught the pupil how to find the information and the pupil then reads the passages in the book and learns the principal exports of Denmark. Although the pupil could not have learnt what the principal exports of Denmark were without the teacher's teaching, it could not be said that the teacher taught the pupil what the principal exports of Denmark were; he taught the pupil only how to find them. What the teacher actually taught him is restricted to what the pupil learnt in his interactions with the teacher. This may sound a little odd with this example, where the independent activity of the pupil was so limited. But we can alter the example a little to the situation where the teacher taught the pupil how to look up a book in the catalogue, and how to work out from wall charts where various classification numbers could be found. In this case it would be quite odd to say that something the student learnt
the next year using these skills was taught him by the teacher. The strongest claim we can make is that what the teacher taught him was indispensable to his learning this later knowledge.

But the goals of the classroom teacher usually encompass a great deal more than imparting bodies of information. We want schools to develop in our children inquiring minds rather than fill them full of information. And we might also hope that the 'all-round' development of our children's personalities will be enhanced by their schooling. It is with some of these sorts of goals in mind that teachers allow much of their teaching time to be devoted to discussion. In that discussion involves interaction it has a superficial resemblance to teaching. This interaction is frequently of the form where the teacher makes some statement or asks a question, elicits feedback from the students and monitors his behaviour according to his interpretation of the feedback. But where classroom discussions very often differ from teaching is that it is not possible for an observer to perceive a pattern in the teacher's behaviour indicating his working towards a goal. For the teacher's behaviour to qualify as goal-directed, it must not only be modified according to interpretations of feedback, but these modifications must show evidence of attempted progress towards a goal. In a conversation each participant, one would hope, modifies his behaviour in response to his interpretations of the feedback he is getting, but this may be quite undirected;
the conversation may wander virtually at random. The teaching situation differs from this in that the teacher must be modifying his behaviour in such a way as to bring himself and the pupil closer to the achievement of some goal in pupil learning. Frequently discussions comprise periods of comparatively unguided interchange interspersed with teaching interactions which occur when the teacher perceives an opportunity to expand the student's understanding on some matter and guides the interaction to work through to this goal.

Reasons offered by teachers for spending classroom time in discussion are various. Some just feel it is a good thing while others have highly articulated views on the contribution unstructured discussion can have on the pupils' personal and psychological growth. Sometimes one suspects that this belief in the value of discussion is no more than a fad. My approach involves at looking at what goes on in a discussion, rather than the professed reasons for using them. One might view a teacher conducting a discussion as a teacher supervising practice, where the skill being practised was the expressing of opinions; the situation being analogous to a writing lesson where the teacher was supervising practice in forming letters. Or one might view it negatively, as a situation where the teacher relaxes many of his normal controls. Many teachers would find such a synopsis of their activities in leading discussions disappointing, and in many cases they would be inadequate. Some discussions meander with little guidance and give no evidence of working towards a goal, but not all.
One possible goal a teacher might have in discussion is that of teaching his pupils that their opinions are of value and important to express. A teacher might feel this was an important part of helping children develop their individuality and self-confidence. Many a teacher with such aims might receive a rude shock if he had a report from someone trained in identifying teaching situations and their goals. It is not often that an examination of the pattern of the teacher's responses would show goal-corrected behaviour progressing towards this. Teachers are inclined to respond to pupil's comments with selections from stock replies such as: "that's interesting", "yes, good", or "uh huh, next please". A teacher who does this cannot be said to be using his interpretations of the pupils, feedback to monitor his explicating because his explicating behaviour is very little affected by the nature of the pupil's response. It would be possible for the teacher to use discussion periods to teach their pupils that their opinions were of value but it would require considerable skill and concentration to interpret each pupil's response and monitor one's explicating behaviour in such a way as to indicate to the pupil that what he had said was of value.

I have been very negative about discussions but this is aimed more at cracking illusions than damaging discussions outright. They have their place in the classroom and it is an important one, but many of the goals attributed to them are most unrealistic. It is fortunate that children's egos are not so fragile that they can be shaped
by the comments teachers make in discussion periods, or the potential for damage would be overwhelming. Discussions can help children find out about themselves, what they believe and are prepared to argue for. And it is possible for teaching to go on in a discussion but not frequent.

An approach to teaching with an appeal similar to that of the use of classroom discussions is the employment of discovery learning techniques. Like discussions they involve the pupil in formulating his own ideas with the teacher's role minimised. At first glance it would seem that this sort of situation would be excluded from teaching by my definition under which 'teaching' is used to refer only to those situations where the teacher's role is maximised. But the range of what can be included in the use of discovery methods is considerable. It is clear that on my account setting up a structured situation and exposing the child to it in order that he learn is not teaching. But discovery methods can involve situations quite different from this. Dearden (1967) includes among discovery situations any method where the teacher does not explicitly tell the pupil what is to be learnt. This does not preclude considerable involvement of the teacher in the learning process so long as he does not tell the pupil what he is to learn.

When using the Socratic method the teacher works in closely with the pupil guiding him towards the solution
without actually telling him what it is. The Socratic method comprises two phases, the ironic and the malevetic. The first phase is the negative phase during which the teacher questions the student to reveal his ignorance. We can see how this occurs in the dialogue known as the Meno paradox where Socrates is questioning Meno's slave. The problem is how to double the size of a square.

"SOCRATES: ... The present figure has a side of two feet. What will be the side of the double-sized one?

BOY: It will be double, Socrates, obviously.

SOCRATES: ... You say that the side of double length produces the double-sized figure? Like this I mean, not long this way and short that. It must be equal on all sides like the first figure, only twice its size, that is, eight feet. Think a moment whether you still expect to get it from doubling the side.

BOY: Yes, I do.

SOCRATES: Well now, shall we have a line double the length of this (AB) if we add another the same length at this end (BJ)?

BOY: Yes.

SOCRATES: Let us draw in four equal sides (i.e. counting AJ and adding JK, KL, and LA made complete by drawing in its second half LD), using the first as a base. Does this not give us what you call the eight foot figure?

BOY: Certainly.

SOCRATES: But does it contain these four squares, each equal to the original four-foot one? (Socrates has drawn in the lines CM, CN to complete the squares that he wishes to point out.)

BOY: Yes.

SOCRATES: How big is it then? Won't it be four times as big?

BOY: Of course.

SOCRATES: And is four times the same as twice?

BOY: Of course not."
(Plato, 1963, p 366. Diagrams and notes in brackets added by translators.)

Once the learner has his ignorance revealed to him the positive phase begins. During this maieutic phase the teacher through skillful questioning leads the student to organise empirical observations in such a way as to arrive at a solution for his problem. Another extract from the Meno paradox shows how Socrates led the slave boy to discover that a square constructed on the diagonal of the original four foot square will be double its size.

(Socrates here rubs out the previous figures and starts again).

SOCRATES: Tell me, boy, is not this our square of four feet? (ABCD) You understand?

BOY: Yes.

SOCRATES: Now we can add another equal to it like this? (BCEF).

BOY: Yes.

SOCRATES: And a third here, equal to each of the others? (CEGH)

BOY: Yes.

SOCRATES: And then we can fill in this one in the corner? (DCHJ)

BOY: Yes

SOCRATES: Then here we have four equal squares?

BOY: Yes

SOCRATES: And how many times the size of the first square is the whole?
BOY: Four times.

SOCRATES: And we want one double the size. You remember?

BOY: Yes.

SOCRATES: How does this line going from corner to corner cut each of these squares in half?

BOY: Yes

SOCRATES: And these are four equal lines enclosing this area? (BEND)

BOY: They are.

SOCRATES: Now think. How big is this area?

BOY: I don't understand.

SOCRATES: Here are four squares. Has not each line cut off the inner half of each of them?

BOY: Yes

SOCRATES: And how many such halves are there in this figure? (BEND)

BOY: Four.

SOCRATES: And how many in this one? (ABCD)

BOY: Two

SOCRATES: And what is the relation of four to two?

BOY: Double

SOCRATES: How big is this figure then?

BOY: Eight feet.

SOCRATES: On what base?

BOY: This one.

SOCRATES: The line which goes from corner to corner of the square of four feet?

BOY: Yes.

SOCRATES: The technical name for it is 'diagonal'; so if we use that name, it is your personal opinion that the square on the diagonal of the original is double its area."

(Plato, 1963, p 368-370, Diagram and notes in brackets added by Translators.)
This, as a procedure in teaching is different from what we commonly call discovery methods. Socrates does go through the process of teaching, he explicates or indicates, elicits feedback, and monitors further behaviour according to his interpretations of feedback. Although Socrates at no point tells the slave boy he is wrong, or what the answer is there is little encouragement for the slave boy to construct original answers. Unlike modern discovery methods this method of teaching is inclined to be directive in that the conclusions the pupil will come up with are known beforehand by the teacher who is directing the student towards them. In this way it differs from generalised questioning, where the teacher is probing the student as to his views on some matter. What makes the Socratic method teaching is its having a goal towards which the teacher is working. It is not a creative situation where the student might come up with some discovery which adds something to our knowledge. This may happen, but then he would be stepping outside the teaching situation. One cannot teach what he does not know. The place for teaching is to induct the students into as much as possible of present knowledge, and hope that some will go on to be creative. The Socratic questions the pupils to lead him to his conclusion, this is different from questioning the pupil to find out what he knows or stimulate his thinking in a more general way.

I have tried to show how teaching relates to other classroom activities and separated it from such activities as lecturing. Another sort of comparison which occurs again and again is that of teaching with indoctrination
and conditioning. In the first chapter I made clear my view that it is not feasible or wise to try to oppose 'indoctrination' and 'teaching'. Teaching, under my analysis, would be one way of indoctrinating. Conditioning, however, might be different. It is rather uncomfortable to try to deal with something like conditioning, which has so much literature around it in a page or two and I shall, of necessity discuss it most simplistically. Clearly classical conditioning is not closely related to teaching. Operant conditioning in the classroom has proved very successful in modifying the behaviour of difficult pupils, but philosophers of Education and teachers in general show considerable resistance to the possibility that teaching can be fully described in terms of conditioning. One can view operant conditioning very broadly to include any process whereby the behaviour of an organism is affected by stimuli in the environment whose occurrence has some contingent connection with the organism's behaviour. This interpretation of conditioning would include teaching but to say that teaching qualified as conditioning under such a broad definition tells us very little. It is also doubtful that it would be a helpful way to look at teaching where one is often concerned with behaviour only in as much as it indicates the internal level of learning.

Skinner's early view of conditioning is rather more narrowly defined. One of its principal features is that it concerns emitted responses, rather than elicited ones. This distinction contrasts operant conditioning with
classical. Classical conditioning is concerned with reflexes which are elicited by the appropriate stimulus e.g. a knee jerk elicited by a tap under the kneecap. Operant conditioning differs in that it deals with voluntary behaviour, responses which the organism emits, which do not have to be instigated by an outside force. The paradigm example of a rat in a Skinner box involves a rat which is behaving, doing whatever comes naturally, so to speak. This might involve grooming, investigating the box, preening, or any other sort of activity. In order to condition the rat one selects a piece of behaviour and can increase its frequency of occurrence by administering a reinforcing stimulus, such as a piece of wheat, immediately after that behaviour is emitted. This process has a certain resemblance to a teaching interaction in that the "pupil" is responding and the "teacher" is monitoring his behaviour according to the pupil's response. But there is an important feature missing; for someone to be teaching he must elicit feedback, rather than just monitor his behaviour in accordance with responses which just occur.

Thus teaching can be distinguished from conditioning at least in the more restricting Skinnerian sense. But the way I have done this would not be likely to satisfy a teacher who was averse to the suggestion that teaching could be reduced to conditioning. The objection to such a reduction stems from a belief that there is an element in teaching of something on a higher plane than anything which could occur in a process like conditioning which
was developed by psychologists concerned with changing the behaviour of animals. My analysis of teaching does not distinguish this feature. A teaching interaction could occur with an animal or an intellectually handicapped child. In fact one could even argue that a machine can teach.

The more sophisticated machines explicate (display the material to be learned), elicit feedback (offer the student multi-choice questions) and modify their explicating in accord with the student's feedback. That is, when the student answers the question, by pressing a key or some such, the machine explicates the material which it has been programmed to display on that particular answer to the question. One might argue that such a machine could not be said to be teaching. It is questionable whether it could be said to be eliciting feedback, where all it does is display the question - just giving the student the opportunity to respond. It is stretching the point to say it interprets feedback and thus monitors its explicating. But even once these points are made it must be accepted that what a teaching machine does closely resembles teaching. Examination of the limitations in the quality of teaching we could expect from a machine points to some interesting aspects of what is involved in good teaching. The machine's feedback system is limited in that there are only a small number of fixed responses a student can give to a multi-choice question and a correspondingly small number of fixed ways the machine can monitor its explicating. This would handicap the student
who was confused and just guessing or was not thinking about the subject the way the person who programmed the machine assumed he would. Having a response option such as "none of the above" or "I don't know" might enable such a student to be identified as one the machine was not able to teach. This is analogous to the situation the human teacher gets into where he finds the student's responses so incomprehensible he is unable to teach him.

So a human teacher is limited in this sense also. Although one would expect the range of responses he could elicit and interpret would be greater than that of the machine the range is definitely limited. Such limits would vary from teacher to teacher and time to time. The teacher can take care to use open ended questions but he will also be predisposed to hearing what he wants to hear. This can be counteracted somewhat if he takes care to get students to elaborate on responses he considers off the track.

So the teacher can comfort himself with the thought that although he might have to concede it is possible for a machine to teach, the quality of its teaching would be limited by factors not affecting the human teacher.

This chapter may seem rather inconsistent with those preceding it. I have outlined the futility of trying to develop the analysis of 'teaching'; it is an open textured concept and there is no central core which can be used as a basis for definition. I am also committed to the view that we should not try to alter this feature of our ordinary language concept of 'teaching' by trying to restrict use of the term to some precisely definable range of conditions.
But then in this chapter I have proceeded to present my own definition which appears to be trying to do what I previously argued was not advisable. In the final chapter I shall attempt to clarify this apparent contradiction by demonstrating the value of my analysis and defining the place I expect it to have in our language.

FOOTNOTES

1 Whenever I talk of teaching throughout the rest of this thesis it is this meaning I shall be using unless otherwise specified. I shall, however, continue to use 'teacher' to refer to our ordinary language concept.

2 The sort of achievement which is required, that of getting the co-operation has a strong similarity to Kapunan's executive achievement. In that the pupil is required to emit feedback he must, in some way be involved in a learning activity which could constitute an executive achievement.
CHAPTER V

THE VALUE OF THE INTERACTION ANALYSIS

Although diffuse concepts may serve us well in our ordinary language discourse, in certain contexts we need more precise definitions. Examples which comprise a response to this sort of need can be seen in certain concepts developed in academic disciplines; e.g. 'energy' in Physics, 'intelligence' in Psychology, 'logic' in Philosophy and 'element' in Chemistry. Such terms coincide with ordinary language words and there is some similarity in meaning. There is no suggestion that their technical definitions should replace or refine ordinary language and such definitions are evaluated not according to how well they describe the use of the corresponding ordinary language word, but by their utility in the discipline. The role for which I have developed my analysis of 'teaching' is closer to that played by such technical definitions than by a dictionary definition. My definition of 'teaching' cannot be seen as a direct parallel to the definitions in the cases cited above as it has not arisen out of a discipline in the same way. Thus the standards against which it is to be evaluated are not so clear. There is much inquiry into the phenomenon of teaching but this cannot really be said to comprise an established discipline as the forms it takes and standards it requires
are many and varied. And so there is no obvious context or well defined set of standards against which I can evaluate my concept of 'teaching'. But I can still demonstrate its utility in varying contexts in which it might be used.

One important characteristic of my concept is that it can be clearly and tightly defined. The importance of this can be seen reflected in Bantock's comments on the research into teacher effectiveness. This is an area of research into which much time, money and effort has been poured. The search for criteria of good teaching has turned out to be futile. Bantock attributes this to the diversity of activities we call teaching, the range of subjects taught and the variation of age and ability of pupils. He claims that what is required to be effective under one set of conditions can be expected to be quite different from what is required in another:

"My point is that there are no universally applicable criteria of what constitutes a good teacher; and the attempt to lay down such general criteria is, in part, an explanation of the unproductiveness of much of the research on the subject which has been done. What, then, is required as a preliminary to research is an initial clarification of the basic concepts employed. Once teaching is seen as an interactive process in a context, it is relevant to demand insight into the particular nature of the interactions involved in different sorts of context." (Bantock, 1961, p 276).

Although this has not remained unchallenged (Martin, 1963, and Cooper, 1966) his substantial point still stands. We are not short of testimony as to the failure of research into teacher effectiveness to come up with much substantial
results and Bantock's point has much intuitive appeal. It does seem a little odd to suggest that the same abilities would be required to teach calculus or chemistry to a seventh form class as to teach new entrants how to form letters of the alphabet.

With my interaction concept, however, the skills involved in teaching are quite clear. The teacher has to present or indicate material, elicit feedback, interpret feedback, and monitor his presenting or indicating. What it means to do this well, and how to measure success in these skills are still considerable problems for the empiricists, but they are, at least, specific. With this concept of 'teaching' research into effective teaching would be clearly defined, there would also be other areas of research which would be cut off from the specific area of research into teaching. There would be questions about how best different subject areas ought to be approached; whether they ought to be taught, lectured on, or whether students ought to pursue the matter by private study. The effectiveness of these other activities the teacher might use would also need to be studied. These, however, would be separate from research on teaching.

Under my analysis there will also be less ambiguity over what it means to be good at teaching. When using our ordinary language concept someone we consider good at teaching might be one who keeps the children happy, or inspires their respect. The phrase 'good teacher' might
be used to distinguish a teacher whose moral integrity we respect from one we do not. In some research contexts a good teacher is one who gets results. While such a broad range of activities is covered by 'teaching' what it means to be good at teaching will always be vague. But where we are talking about a more narrowly defined activity it is possible to be more specific about what it means to be good at it. Using my concept we would say that someone who was good at teaching is a person with a particular facility in handling a feedback interaction. He would need to maintain good rapport with the students in order to be able to elicit feedback. His understanding of what was involved in learning the material he was teaching would need to be such that he could interpret the feedback accurately and modify his explicating behaviour in a way which would help the pupil. It would be possible, and might commonly occur, that someone could be good at teaching and yet not be effective in the classroom. He may not be able to maintain good discipline, or he might try to do nothing but teach, in which case those pupils he was teaching and some observers would profit, but the rest of the class would be bored and left unattended. He would also be unlikely to get through very much work this way as teaching is a time consuming way to cover material. Conversely there might be many a teacher who had no particular flair or liking for interacting individually in teaching his class, but might do an excellent job through lecturing and setting work for the students to do themselves. Using my concept it is possible for us to differentiate between the varying skills demonstrated by
Earlier analyses have left the definition of a teaching activity much less precise. Hirst and Peters made an attempt to distinguish teaching from related activities performed with the intention of bringing about learning by requiring that material be indicated or exhibited in a way which is intelligible to, or within the capacities of, the learners. But writing books and instructional articles which display material in a way which is within the capacities of some intended learners qualifies as teaching under this analysis. However, although these conditions do not do all that might be required of them their contribution to distinguishing teaching from related activities is important. Exhorting a child to do his homework, or paying school fees are activities conducted with the intention of bringing about learning but we would not want to call them teaching and Hirst and Peters' analysis rules them out on the grounds that they involve no display of the material to be learnt. That the capacities of the learners must be taken into account separates teaching from less discriminating cases of telling. But more is needed. Freeman (1973) points out that this analysis can not adequately cope with the situation of a student who refuses to be taught by 'tuning out'. The teacher must do more than display the material in a way such that it would be possible for the student to learn if he were attending, the teacher must take some responsibility to see that he does learn. (See discussion of Kapunan, Ch 3) Freeman's analysis, in requiring
that A be engaged in a transaction with B, separates teaching from such activities as writing books and instructional articles, but not from telling students to read something or setting an assignment.

I have set out in the last chapter how my analysis goes beyond earlier analyses in distinguishing teaching from other ways of inculcating learning. Hirst and Peters' criteria are incorporated, it is required that the teacher indicate or explicate the material. And although it is not specifically stated that this must be done in a way which will be intelligible to the learners, provision is made for this, and is the provision is much less cumbersome to apply than Hirst and Peters' third criterion. For Hirst and Peters to decide whether material was being presented in a way which was intelligible to the learners they would need to know about the knowledge and ability of the learners, estimate the complexity of the material and make some judgement as to how well they corresponded. But using my analysis one could use the pupils' feedback to judge whether or not they found the material intelligible. In any case it would not be possible to maintain a teaching interaction if the material being presented did not come within the range of what was intelligible to the learners. The purpose of distinguishing teaching from such related activities as lecturing and setting of assignments is not so we can point to a teacher who uses a lot of lecturing and assignments and criticise him for neglecting his responsibility to teach. Teaching, as described by
this analysis is time consuming, very demanding of the teacher and may be appropriate only for certain sorts of learning. This analysis enables us to ask when it is appropriate to put in the time and effort required to "teach" something. A university lecturer with a class of several hundred can not teach them all and may do his best for them by lecturing.

In some such situations university teachers do attempt to teach. Frequently these attempts are frustrating for both teacher and class. Not only are the students not involved in the interaction often not interested in the particular material being taught, but also their presence would be likely to detract from the quality of the teaching which could be experienced by those students involved in interaction. But this does not mean that my notion of 'teaching' is of no interest to the university teacher. Although he cannot actually teach, in the sense of interacting with individual students the more closely his whole process in lecturing resembles teaching the better his lecturing will be likely to be. It is clear that he must explicate. Although he cannot elicit feedback according to which he can monitor his explicating he can simulate this process in certain ways. One of them is to watch the eyes of his audience and sensitise himself to the mood in the lecture theatre. He may try to generalize by talking to individual students about how they have been receiving his lectures, or by becoming familiar with the attitudes and knowledge of the sort of person who attends his lecture he may try and
imagine how this 'generalised student' would be receiving his explicating. Set essays and tests are forms of feedback which the lecturer can elicit and use. Thus I make the apparently contradictory recommendation to the university teacher that he should not try to teach but the process he goes through when lecturing and preparing his lectures should simulate a teaching interaction as closely as possible without actually becoming one.

Under my analysis the term 'teaching' is reserved for describing the situation where the teacher's participation in the student's learning is greatest. Naturally this is best reserved for when it is most needed. Take, for example, a history teacher doing a unit on the causes of WWI and assume his ultimate concern in teaching history is to develop in his pupils an ability to interpret historical information in order to generate causal hypotheses. In order for the students to learn to do this they must become acquainted with the appropriate historical information. A moderately able and co-operative class would be able to achieve this by reading the appropriate passages in their texts. It would be likely to be poor utilisation of the teacher's time and effort for him to involve himself to any great degree in this phase of the process. However, when it came to actually interpreting the information and constructing the hypotheses the guidance of the teacher would be much more vital. Of the different activities the teacher is engaged in in the classroom such as directing reading,
setting projects, lecturing and teaching; teaching is likely to require the highest concentration of effort from the teacher directly involving only a small group of pupils at a time. Because of this the teacher must select the situations where this concentrated effort is most worthwhile. He may rely on set reading, independent projects and exercises to provide the bulk of the students' learning, stepping in himself to teach where students need guidance through difficult parts or help in interpretation of what they are reading.

As it would not be possible to maintain a teaching interaction with more than one or two people at once a teacher with a class of thirty would not be able to spend very much time teaching each child. Freeman introduced the case where a teacher was teaching one child with another looking on as a counterexample to the intention analysis (1973, p 13). According to the intention analysis the teacher was teaching only the first child whom he was intending to teach, where the performance analysis would claim that as many children as learnt were being taught. According to the interaction analysis if a teacher is interacting with one child and teaching it it is no problem to say that children looking on may be learning but are not being taught. In fact in many classrooms there is only a particular group of children who are being taught, while the rest are looking and learning incidentally if they are lucky. Obviously more vocal and responsive pupils will get more teaching because the teacher needs feedback to modify his explicating and will
get feedback more readily from these people. There is
a debate continuously going on among teachers as to
whether they should direct their teaching to the brightest
members of the class, the larger group of average students
or directly teach only the slowest members of the class
on the assumption that the others will pick up the work
without direct teaching.

All we really ever end up saying to teachers who are
concerned about this is that they must do their best in
spreading their efforts over the class. But under my
analysis the issue can be debated much more coherently.
We can now be quite clear as to just what we mean when we
say that a teacher is directing his teaching to certain
sectors of the class. They can be identified specifically
as the group from whom the teacher elicits feedback and
uses feedback to monitor his explicating behaviour. Under
my analysis of 'teaching' a teacher could not possibly
be expected to teach the whole class. He must give up
such honourable intentions which could have never been
fulfilled and make decisions over who he will teach. This
may sound abhorrent to some. In a situation where an
idealist would like to give all his attention to all his
pupils my approach involves facing the impossibility of this
and the necessity of making reasoned decisions about
choosing between the needs of different pupils. I cannot
offer an answer about how a teacher can choose but at least
I can make clear what the choices are.

Having thought out the situation and resolved to
direct his teaching to particular groups the teacher can also then get objective information about who he did, in fact, succeed in teaching. Because my definition of 'teaching' is behavioural it is possible for an observer to identify cases of teaching by watching the teacher and pupils. There is no need for access to the teacher's mental state, as in the intention analysis.

Where teaching is viewed as an intentional activity the teacher himself is the last authority on what he is doing and if the observer reported to the teacher that he, the teacher, was not sticking to his professed strategy there would always be room for the teacher to squeeze out by maintaining that the observer had not understood what the teacher was really doing. If the observer noted that the teacher was interacting a great deal with a pupil he had selected as one who did not need teaching the teacher might defend himself saying, "Yes, it might have looked to you as if she was the one I was teaching but really we were just chatting, really my attention was on the other." Where one is concerned with ascribing moral responsibility the intention of the actor has primary emphasis, but when looking at teaching the concern is more with the actual effects of the agent's behaviour. And in the situation I have just been discussing this is most important. The pupils who are likely to get the smallest amount of teaching in an uncontrolled situation are those whom the teacher has to make the greatest effort to teach. He may be able to teach willing, intelligent pupils with very little effort at all, and indeed, feel that rather than teaching them he was "just chatting". Whereas, if
he made an effort for ten minutes to teach one of the more difficult children he may feel that that child has received something far more than the others. It is true that he has, the teacher has expended considerably more effort over him. But if we look more objectively at the actual teaching he received it may still be minimal.

Freeman's analysis placed the emphasis on the results, but they were not necessarily the results due to the teacher. Under her analysis we would have to give the teacher credit for any ensuing learning whether it was due to his sustained effort or a lucky chance. My analysis focuses attention on the effects towards which the teacher is actually working, not what he intends to bring about, nor what happens to be brought about, perhaps relatively independently of his efforts. Under my analysis what the teacher was teaching could be quite different from what he intended to teach. Consider the case where the teacher has a 'hidden agenda'. A teacher could, for example, be unintentionally teaching that girls are not good at maths. He might put questions or make statements (explicating or indicating behaviour) which elicit responses from the pupils and monitor his further questions or comments according to such responses. E.g. let us say he takes a problem and puts it to the class saying "Can one of the girls answer this?". If she gives a correct answer he may commend her, with a slight intonation of surprise in his voice and perhaps ask one of the boys what he has to add to her answer.
Alternatively, if she answered wrongly he may turn to one of the boys to tell her what she could not be expected to know. Although this teacher would be fulfilling the conditions required for us to say he was teaching that girls cannot do maths as well as boys, this would be unlikely to have been his intention. In fact, he might even be horrified once it was explained to him that his actions were likely to result in the students' coming to believe that girls were not as good at maths as boys.

This aspect of my analysis also enables us to identify incidences of teaching in situations outside the classroom. Conversations could involve teaching but it is more likely to occur in an argument where each of the participants is working towards convincing his opponent of his point of view. In an argument where each party is trying to convince the other of his point of view without taking much care to come to grips with the point of view of the other the interaction could not be called a 'teaching interaction'. On the intention analysis both would be said to be teaching, but on this analysis teaching could be occurring only when one of the pair was able to relinquish his attempt to convince the other for long enough to give the feedback needed for the former to monitor his explicating in line with his interpretation of feedback. Where the participants in the argument are fairly sophisticated each parties may be teaching and being taught. It is common experience that the most fruitful arguments are those where each listens to the other and makes his response out of his interpretation
of the other's argument. But in the situation where each is battering the other with his views no resolution will be found and neither is likely to learn very much.

In presenting the ethological concept of "goal corrected behaviour" I stated that it was developed to meet the requirements for a behavioural science; it enabled ethologists to describe goal directed behaviour non-teleologically. I have just been describing the contribution such a behavioural definition can make to our understanding of the teaching process, but not least of its virtues is that it brings the study of teaching in line with the requirements of mainstream Psychology. Educational Psychology has long been a poor cousin of Psychology proper and part of the reason for this is that the concerns of Educational Psychologists are with goal corrected behaviour and nonvisible changes involved in learning rather than stimulus and response. And often where Educational Psychology has operationalised its variables and quantified its results so that it can meet the form required for psychological study it has lost its relevance for educators. But my analysis gives a behavioural definition of 'teaching' which captures much of what is important to those involved in the activity.

My definition is behavioural in form, in the sense that all the information needed to identify a teaching situation is available from the observable behaviour of the participants. But it is not a simple behavioural definition of the sort: "a rat shall be said to have
pressed the bar when the depression was deep enough to cause a switch to close and the red light to go on", or "a child is said to be raising his hand when his hand is above his head and his elbow on the same level as his shoulder". From such definitions anyone could identify a response with minimal training and negligible errors. In this respect my definition is not like these; identification of teaching interactions and their goals would require skill combined with an understanding of the teaching process. Specifying the nature of the goal would be particularly difficult. This is partly because there are often a number of subgoals, even in one teaching interaction. And the goal might change. Much the easiest way to find out a teacher's goal is to ask him, but this has problems of its own. For a start there may be problems with the teacher's credibility; he may want to impress or please the interviewer. But even once this problem were surmounted and we could be sure that a teacher really did intend to accomplish what he said he was working towards we still have the problem that what people think they are going to do, and what they think they are doing can be quite different from what they actually do. They may not see themselves accurately. One of the contributions my analysis of 'teaching' can make is to help such teachers see what they are doing more realistically. Reports of an observer on a teaching interaction will be dependent on his skill and objectivity; training observers would be time consuming. But looking at teaching goals in this way will bring us much closer to understanding the teacher's goals as they will affect the pupil
than will the simpler approach of asking the teacher what he is working towards.

So what we have is a precise definition of 'teaching' which enables us to identify any teaching situation and its goal by observation alone. In order to have these properties it is obviously necessary that my concept be different from our ordinary language concept, but it is not too far out of step with it. Some earlier analyses are unfortunate in the absurd things they allow us to say about teaching. Hirst and Peters' analysis allows the logical paradox of teaching someone what he already knows. If a teacher intends to teach something, and explicates it in a way which is intelligible to a learner then we have to say he has taught it, regardless of whether the learner knew it before. Freeman's analysis allows us to say that A taught B something that he, A, did not know if A's actions were instrumental in B's going on to learn something which A did not know (see example on page 11). Also, if two or more teachers' actions were instrumental in B's learning X we should have to say that had all taught him X, where using our ordinary language concept we may not be inclined to say that any of them had taught him X. But a goal corrected interaction could not be used to teach a pupil what he already knew because although the teacher may set out to do so, as he elicited feedback it would become clear that the teacher would have to monitor his explicating to the extent of changing his goal. He could not work towards a goal which was clearly already achieved. Neither could the
teacher teach what he, the teacher, did not have command of. The student could come out of the interaction with greater understanding than the teacher went in with but he would have gained this superior knowledge through the working of his own mind, perhaps stimulated by the teacher's communication. The teacher can be said to be teaching only what he is directing the interaction towards, and it would be unlikely that he could direct the interaction towards something he was unaware or ignorant of. The student may pick up something from the teacher, as he may pick up something from watching T.V. or reading the newspaper, but he is taught only what the teacher is directing the interaction towards.

And so, my concept, although narrower in scope than its ordinary language counterpart is coherent with it. It does not include as teaching situations which would be excluded by our ordinary language concept. It involves no limitations or goals; teaching is not restricted to fostering rationality and can be used to develop the most mechanical of skills or even to indoctrinate. My concept focuses on a certain subset of all the activities we could include as teaching. These are the situations where the role of the teacher is maximised and are described in such a way as to focus attention on the probable results of the teacher's actions. As I have pointed out there is never going to be one concept of 'teaching'. In our ordinary language discourse our ordinary language concept, with all its vagueness is very suitable. If we were to make a cross
cultural study of teaching we would need a definition which included a greater breadth of activities. Or, if concerned with the moral integrity of teachers we would want a definition which emphasised the intentions involved. Writers like Green and Crittenden have included certain restrictions in their definitions of 'teaching' to assist them in their endeavour to distinguish teaching from indoctrination. I do not propose my concept to replace these, for their contribution is, to a degree, specific to a context. I cannot claim that my concept has achieved the impossible in giving us what we shall find the true and best definition of 'teaching' but in certain contexts its value is considerable.
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