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Introduction

Often when educators 'talk about teaching', they mention 'the nature of the child' and the expectations the child brings to the learning situation. Student teachers also bring expectations to learning situations in College. Though teacher educators inculcate respect in their students for pupil expectancies in school they can ignore the anticipations and concerns of their student teachers. A particular expectancy of many student teachers is that, while at College, they will be taught 'how to teach'.

One can justifiably ignore this expectancy to a degree because ultimately each student teacher should develop his or her own style of teaching. To ignore the expectancy entirely, however, is to abandon the student. 'Talk about teaching' often leaves even the good student at sea, unable to make a relevant pattern out of his college studies and his future vocation. This lack of pattern is not inevitable or, of itself, insurmountable. Its occurrence early in teacher training can, however, create considerable student concern for, if theory and practice are not linked in the student's mind early in his College career, disillusionment may set in. Thus one of the duties of a teacher educator is to face his student's expectation that he/she will be taught 'how to teach'.

Teaching is subtle and complex. The problem is that simple reference to subtlety and complexity will not suffice. Cohen and Mannion (1977, p.14) put the dilemma succinctly: "Clearly it is an extremely difficult task to isolate the processes and practices that constitute teaching in order to subject them to analysis. Such, however, is the essential task as we see it." Sooner or later effective teacher education must give instruction in 'how to teach' that goes beyond a narrow psychologically-based model and gives validity to teacher educators in the eyes of their students and the community to whom they are ultimately responsible.

In their book *Models of Teaching* (1971), Joyce and Weil speak out firmly against dogmatism in selecting a teaching model. They feel there is no 'right royal road' to develop teaching skills in student teachers and state that there exist good teaching approaches and a variety of quite different and often successful teaching styles. Joyce and Weil base their view on the belief that education should offer alternatives to both children and adults and that a single 'perfect' model of teaching is thus inadequate for a pluralistic philosophy. A perfect model reduces education to indoctrination as it denies choice. "Since no single teaching strategy can accomplish every purpose the wise teacher will master a repertoire of strategies" (Joyce and Weil, 1971, p.20).

How can we proceed in teacher education if we are not to indoctrinate yet still 'teach how to teach'? We need to develop a range of skills in our student teachers. We should teach them to be flexible in order to cope with the wide range of problems they will face. There are a number of possible solutions. For example, we could take the traditional approach of Broudy and Palmer (1965) and analyse the historical development of teaching method. On the other hand, we could follow Joyce and Weil (1971) who put forward conceptually varied and complex models of teaching (grouped in families) from which the student is supposed to choose. A multiplicity of complex models may still, however, confound the expectations of our students. Furthermore each family of models has little in common with other model groupings and they derive from a number of different psychological and educational theories rather than an overview of teaching and learning situations.

The purpose of this paper is to suggest a system (a typology) that allows a student teacher to view and analyse any teaching or learning situation (from the radical to the traditional) in terms of certain known variables. To be effective this typology of teaching should be readily understood by student teachers and easily applied by them to their own observation and practice.

Such a system will hopefully resolve the dilemma between teaching being complex and varied while prescriptions for teaching are specific to certain, often simple, situations. The aim is to unite certain approaches to teaching in a framework that is easily understood as a whole and gives a broad base for teaching practice.

To achieve this our typology should, in the first place, not be merely a collection of psychological viewpoints. Secondly, certain dimensions should vary in a predictable way across the system so that its parts are not conflicting. Finally such a system should provide a structure within which the strategies and techniques of teaching and learning can be elaborated.

The Typology

The typology is a series of teaching strategies linked by certain assumptions. A teaching strategy, like any strategy, is 'a series of moves designed to achieve a certain aim'. The components of a strategy, the moves, are the techniques of teaching.

It is assumed (1) that there are certain recognizable dimensions of any teaching learning situation, and (2) that these dimensions can be placed on a continuum that can be described in a systematic way. These assumptions seem reasonable for, if one surveys the whole range of teaching approaches, one can extract certain dimensions which vary in a predictable way from strategy to strategy. (See Figure 1).
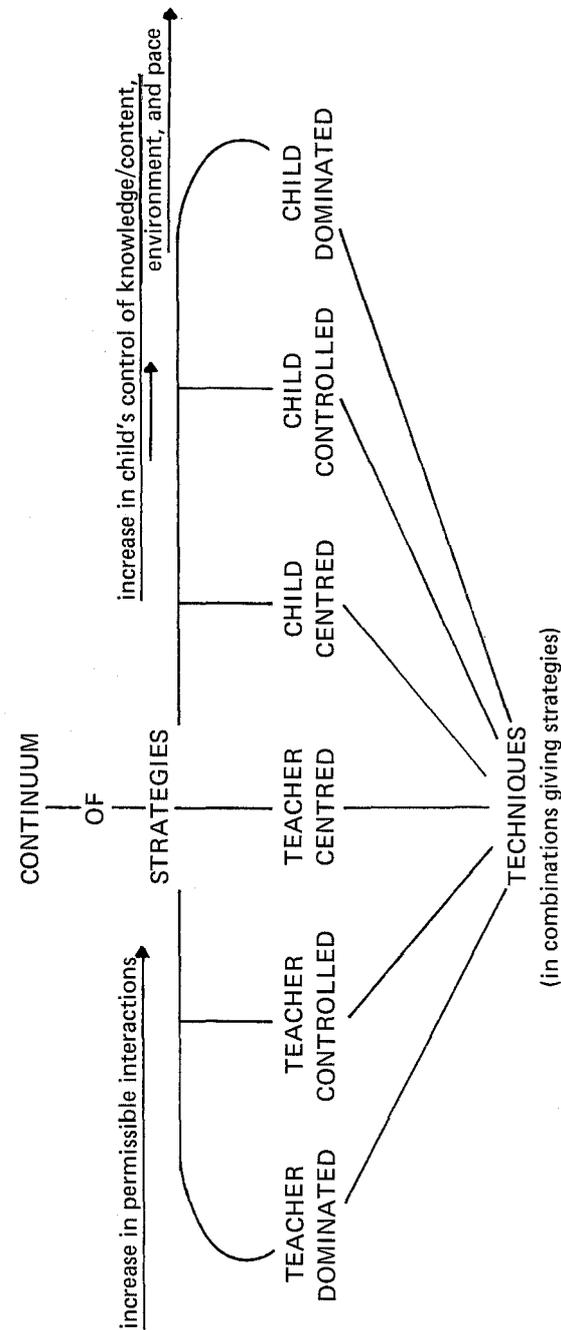

FIGURE 1: Typology of Teaching

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Thus it is possible to place teaching strategies on a continuum defined by these dimensions of the teaching/learning situation. This continuum is central to our typology, and the dimensions which vary along it and thus define it are:

    (i) the permissible personal interaction patterns;

    (ii) the control of knowledge/content or environmental influences;

    (iii) the control of the pace of instruction/learning.

The continuum is seen to range from teacher dominated strategies to child dominated strategies (Figure 1). Any point on the continuum should indicate a strategy but, in order to make the system more usable, we have defined six points over its range. These points are indicated in Figure 1 and are defined by reference to (i) — (iii) above.

Other features of teaching situations vary along this continuum but not in such a regular way as to be of use as defining features at any point. They are:

    (a) the degree to which teaching is emphasized as opposed to learning, or vice versa; and

    (b) the reward/motivation systems of the strategy.

Overall this analysis gives the student teacher a framework within which to view the classroom or learning situation. In particular it shows:

    (i) how control and personal interactions vary in teaching situations;

    (ii) how teaching and learning are interrelated; how one can occur without the other, but how for the most part they are, and should be, interrelated; and

    (iii) how teaching and learning can be analysed into components.

Let us now consider in detail each of the six defined strategies on the continuum beginning with the most traditional, the teacher dominated approach. We describe each strategy in terms of our three definitive dimensions [(i) to (iii) above] and also make reference to the other varying features [(a) and (b) above].

The Strategies

1. *Teacher Dominated Strategy*

    The following features define this strategy:

        (i) the one-way interaction pattern which is from teacher to child. The child cannot question the teacher. The teacher "delivers" the lesson to the child with little or no overt reference to how the child feels or understands;

        (ii) the teacher totally controls the knowledge/content of the lesson (or teaching episode); and

        (iii) the teacher usually controls the pace at which teaching (usually the giving of knowledge or skills) takes place.

Thus this strategy emphasizes instruction or exposition, that is, "teaching" as opposed to "learning". There is no overt concern as to whether learning (in the pupil's head) takes place or not. Learning may well occur but there is no checking in this strategy of whether it does or not.

Likewise the internal thoughts and motivations of pupils are of little *obvious* concern to teachers using this strategy. Pupils may well be motivated or they may well be unmotivated. The teacher merely delivers the package of knowledge or skills. Many lecture situations are examples of this strategy of teaching, and often involve techniques such as narration or explanation.

2. *Teacher Controlled Strategy*

    This strategy is defined by three features:

        (i) the two-way interaction that occurs between teacher and child and which often involves questioning and answering;

        (ii) the fact that teacher controls exactly the content or knowledge area considered. The child can question (or be questioned on) the details given by the teacher and thus enlarge his own understanding, but the details are controlled by the teacher. For example, when the teacher asks a question (s)he directs replies towards what (s)he considers the correct answer. The questioning therefore converges on the correct answer rather than opening up the topic for discussion; and

        (iii) the fact that the control of the pace of exposition or instruction is by the teacher. Teacher also controls the pace of questioning.

In this strategy there is a little more concern (than in teacher domination) with the child's internal learning processes but the emphasis is still very much on exposition and instruction. Teaching is emphasized much more than learning though, through questioning, some internal thought adjustment is encouraged.

In this strategy the teacher does make an effort to engage the child's thought (through questioning) and there is, therefore, some concern with the child's motivation. To this end extrinsic rewards such as praise are often used. Many traditional lessons use this strategy — it is probably the most common mode of teaching in a traditional school system.

3. *Teacher Centred Strategy*

    This strategy is characterized by:

        (i) three-way interactions between teacher and children with teacher initiating the majority of these interactions;

        (ii) teacher choosing the broad area of what is to be done but not the details of content and knowledge emerging during the lesson

due to interactions between pupils and teacher (the teacher has a monitoring effect on what is allowed to arise and what details are emphasized and discussed); and

(iii) the pace of instruction/discussion being controlled by the teacher's directing effect on interaction, discussion and class developments. The teacher can only modify rather than set the pace. Pupils, by their thoughts, actions and answers, have a considerable contribution to the pace of the lesson.

In this strategy teaching and children's learning are of about equal concern to the teacher. Teacher is also very concerned with the child's contribution to the lesson, so motivational considerations are very much to the fore in both extrinsic and intrinsic modes.

When this strategy is developed, something like Socratic questioning takes place. A topic is opened up—one question leads to another, while the teacher selects the direction of enquiry in accordance with his broad aim. In many ways this is guided discovery and is the main feature of many experiments or excursions.

4. Child Centred Strategy

Here the characteristic features are:

(i) three-way interactions where the children initiate most of the interactions;
(ii) teacher setting a series of options for that knowledge/content which is to be learnt, and the child choosing an option from this series and how he will operate with this option; and
(iii) the child alone dictating the pace of learning as the teacher only offers choices and has no control of the child's learning once an initial choice has taken place.

Obviously, with these conditions, learning by the child is emphasised more than teaching by the teacher. In this strategy an important element is the child's choice of topic and mode of operation. Children must be motivated to choose and intrinsic motivation in children is usually of considerable concern to those who use this strategy, though extrinsic rewards can still be used.

This strategy represents what we might call 'true discovery' lessons. In this there is no covert manipulation of the direction of discovery by the teacher. The only restriction on discovery in this case is the limitation of options construed by the teacher and chosen by the child. The teacher is used as a resource during discovery.

5. Child Controlled Strategy

Here the characteristic features are:

(i) interactions are initiated by children and can be with teacher or other children;
(ii) the teacher sets the general environment. The child chooses any aspect of this that interests him and also chooses how he will deal with it; and
(iii) the child alone dictates the pace of learning.

As the child's learning is central to this strategy, learning totally predominates over teaching. Teacher only sets the scene and is not at all an expositor or an instructor. Because of the central position of the child's learning in this strategy, the child's internal intrinsic motivation is essential to its operation.

Certain free play sessions in pre-school, study periods and project work in schools are examples of this strategy.

6. Child Dominated Strategy

This end of our continuum is distinct because:

(i) interactions are only between children, or between children and other people;
(ii) the child totally controls the learning environment and thus all knowledge or content to be learnt; as well as
(iii) totally controlling the pace of such learning.

This strategy emphasizes learning alone; there need be no reference to teaching and no need for a teacher. The child dominates, being intrinsically self-motivated to learn or not to learn.

In many ways this strategy, by definition, does not take place in schools which usually set an environment of some sort. It is a de-schooling strategy. Children certainly learn using this approach as witnessed by child initiated out-of-school hobbies and projects. In many ways this strategy represents learning from life rather than from school. More importantly, this strategy should be a product of teaching rather than a method of conducting it. Self-motivated autonomous learning in real life situations is often seen as a goal of education rather than a mechanism.

The Techniques

Strategies have components. Some of these components we call techniques of teaching or learning applied or exerted by either the teacher or the pupil. Techniques are the moves within a strategy and some are more common in one type of strategy than in another. Most techniques can, however, be used in some form at any point in our strategy scale.

Techniques of teaching are such elements as narration, explanation, demonstration, experiment, application, questioning and discussion.

Techniques of learning involve such elements as perceiving, attending, observing, concentrating, remembering, recording and studying.

Other factors are part of all strategies in varying degrees. They are not moves, but background features present in many teaching situations. We might call them situational factors and they are motivation, planning, discipline, counselling, grouping and testing/evaluating.

Strategies are made up of combinations of techniques and situational factors. Some strategies tend to use certain techniques more than others. Thus, 'teacher-domination' will frequently use narration, 'teacher-control' demonstration, a 'teacher-centred' strategy questioning, while 'child-control' will concentrate on study, application and experiment. However, all techniques and situational factors, in some form, can be used in all strategies.

Interesting teaching can develop when we use techniques not often used in the strategy we have selected. Thus demonstration can be used in a child-centred situation where children have an option to demonstrate to each other.

A lesson may adhere to one strategy but use many techniques. A teacher should use strategies where appropriate and select the right combination of techniques to make the strategy effective.

This typology of teaching can be applied to any age grade though, traditionally, some strategies are used at one age level more than at another. Novel teaching may arise if a strategy is applied at an age level where it is not traditionally used.

Choice of Teaching Strategy

Having suggested to our students that there exists a range of teaching strategies, have we fulfilled our task of 'teaching how to teach'? No, not unless a student teacher can choose appropriate strategies, can vary such strategies, and understand on what grounds he chooses to change direction. If a teacher cannot vary his approach he will be inflexible and inappropriate as he cannot adapt to changing demands. In addition, particular learning programmes may involve several strategies. Thus, if we are to 'teach how to teach,' we must teach our students to choose and vary appropriate teaching strategies.

In this context, Patric G. Souper (1976, p. 108) reminds us that "whatever methods may be employed the sole justification of teaching is the fostering of learning." Thus we should pick strategies that lead to the most appropriate learning on the part of the child. What is being taught, the age and expectancies of the child, our own concern for what should be taught, as well as political, economic and organizational restrictions, will influence our choice of strategy. One could say that strategies are chosen not only to fit children and subject matter but also to fit teachers and systems. We should, of course, try to limit teacher- and system-related influences if

they are not concordant with the production of learning in the child. Even if we concentrate on the purely instructional aspects of teaching in our choice of strategy, sociological, psychological, cultural and political factors will all play a part as they influence both the child and the teacher. In this context, Du Bois, Alverson and Staley (1979, p. 464) suggest five factors influencing choice of strategy. (Similar factors are listed by the Open University Course, E 283.9, 1972, p. 8.) Du Bois lists:

 (i) the teacher's cognitive and affective goals;
 (ii) the characteristics of the pupils to be taught;
 (iii) practical, monetary and temporal constraints;
 (iv) the nature of the teacher; and
 (v) the structure of the subject matter. (See Figure 2)

Variation in these factors as the teaching programme proceeds will point to a change in strategy if learning is to be maximized.

In most instances, where these five factors are of equal intensity, variation in a *single* factor need not dictate a change in strategy. When, however, a *number* of the variables listed by Du Bois change their influence on the learning situation, causing learning to become less efficient, then it is time to consider a change in educational strategy. Conversely, strategies can be changed without reference or alteration to choice factors. It is possible to achieve the objectives dictated by the choice factors in more than one way. For example, the ASEP scheme of teaching science introduces seven types of teaching/learning strategies each dealing with the same subject matter (photosynthesis) and reaching in each case the same conclusion (1974, p. 83).

This scheme of teacher education will meet some of the expectations of student teachers. These expectations are powerful educative influences and need to be considered. Yet we must know our limitations and realize that "theory can offer only a framework of thinking not a detailed solution for every problem" (McFarland, 1973, p. 116). Ultimately our students will have to be responsible for their own actions in the classroom. We hope a typology of teaching will give them a framework within which they can exercise their own thoughts and initiatives to the benefit of their pupils.
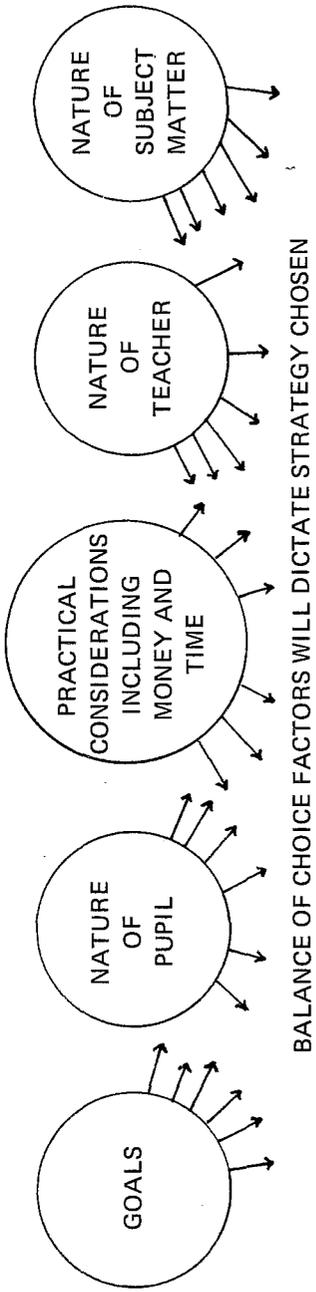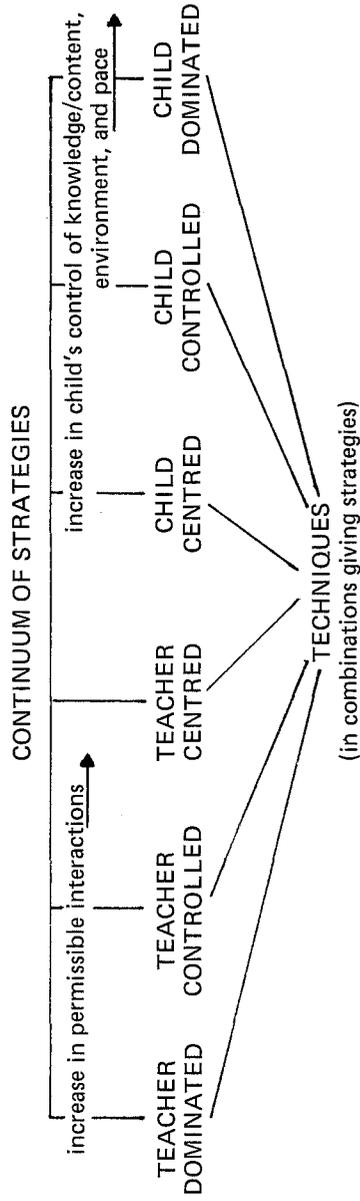
FIGURE 2: Typology of Teaching

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