PERSONAL THEORIES
OF
TEACHING

Dennis Fox

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1   Abstract

The paper presents a conceptual model for thinking about the process of teaching and learning based on how teachers respond to the question:

> "What do you mean by teaching?"

There emerge four basic theories of teaching:
There is the transfer theory, which treats knowledge as a commodity to be transferred from one vessel to another.
There is the shaping theory, which treats teaching as a process of shaping, or moulding students to a predetermined pattern.
Thirdly there is the travelling theory which treats a subject, as a terrain to be explored with hills to be climbed for better viewpoints with the teacher am the travelling companion or expert guide.
Finally, there is the growing theory, which focuses more attention on the intellectual and emotional development of the learner.

These theories are reflected by, and interact with, the views that students have of the process of learning.

Whichever theory a teacher uses to help him think about the process it will affect the strategies he uses and it will colour his attitudes to students and to any training programme that he undertakes.

It is suggested that the conceptual models presented will assist in the resolution of misunderstandings and differences between teaching colleagues and between teachers and students.

2   Four Personal Theories of Teaching

For a number of years I have been asking newly appointed Polytechnic teachers to tell me what they mean by "teaching".

"What do you mean by "teaching" - what is actually happening?"

Fairly typical responses include the following phrases:

> ..... imparting the principles of mathematics...
> ..... to convey knowledge about engineering principles ....
> ..... it is to give the elements of physics to students
> ..... putting over to students the basic facts of biochemistry

These highly qualified academics just embarking on a teaching career not unnaturally think of teaching primarily in terms of their specialist subjects. They seem to view the objects they teach as some kind of commodity that can be given or imparted or conveyed to students. In their various ways they are all enunciating their own personal theories of teaching.

Teaching and learning are elusive concepts, very difficult to put down. We cannot directly observe learning happening and we seem to need concrete analogies or models or theories to help us to keep hold of such slippery ideas. The analogies which most of these inexperienced teachers adopt fall mainly into the category of what I call the transfer theory of teaching because the subject material is viewed as a commodity to be transferred to the students' minds.

The transfer theory is one of four basic theories of teaching which seem to emerge from the answers given by teachers to the question - What do you mean by teaching? The other three are the shaping theory, the travelling theory and the growing theory. Whilst the transfer theory views the student as a container or vessel to be filled$_9$ the shaping theory views the students as day or wood or metal to be shaped or moulded into a predetermined form. The other two basic theories are more likely to be held by experienced teachers, especially those who have thought more deeply about their roles. These teachers tend to speak of helping students or guiding them, or encouraging them to develop. From the viewpoint of the travelling theory the process of teaching is like helping students on a journey through unfamiliar and often tough terrain. The growing theory on the other hand views teaching as being a matter of encouraging and helping students in their personal growth and development - rather like an expert gardener encourages the growth of plants in the various parts of a productive garden.

Because the travelling and growing theories are more likely to be held by experienced teachers and because they seam to coincide more closely with what we know about how learning happens. I refer to them as developed theories in distinction from the transfer and shaping theories, which I will call the simple theories.

Each of us has his or her own personal theory of teaching which both reflects and influences all aspects of the way we go about our jobs. How then do these theories work out in practice? What consequences do they have for the way a teacher approaches his job and his training? How do they affect his attitudes to his subject and his relationships with his students?

3   Simple Theories in Action - the transfer theory

People who adopt the transfer theory of teaching see knowledge as a commodity, which can be transferred by the act of teaching from one container to another or from one location to another. Such people tend to express their view of teaching as 'imparting knowledge' or 'conveying information'. One of the most memorable examples of the transfer theory came from a chemistry lecturer, who told me, that his job was to 'give the elements of physical chemistry to students'. Presumably rather like a generous uncle giving out sweets. Conscientious transferors spend a great deal of time preparing their material and making sure that it is accurate and up-to-date. Some of them also go to great lengths to develop and refine their methods of transfer and they often devise elaborate teaching aids to inject the essence of their subjects accurately into the heart of the container.

Because the transfer theory concentrates a teacher' s attention on the commodity before it is transferred and then on the act of transfer. It often causes him to overlook what happens to the commodity after transfer. There is therefore some awkward problem in accounting for failure. Thus when it is discovered that, in spite of all the teacher's efforts. The container is not very full. The explanations tend to be in terms of leaky containers. Successful learning is seen to be the result of well prepared material, effectively organised and imparted. Unsuccessful learning is seen to be the consequence of poorly motivated, unintelligent, lazy, forgetful students. Not many lecturers acknowledge that a good deal of the material, although it is being well prepared and 'poured out' is, in fact, missing the target and sloshing over the sides of the container. Many a good cupful has been poured, but the cups are not very full.

Of all the teaching methods, the lecture is the classical manifestation of the transfer theory in action. Most of the traditional jokes about the lecture illustrate this:
+   the old adage about the lecture being an occasion when the notes of lecturer become the notes of the students without passing through the minds of either, illustrates the transfer theory operating rather like a photo-copying process.
+   the picture of a lecture theatre with no people in it, but with a large tape recorder at the front playing its message to be recorded by dozens of small tape recorders, which the students have left in position (presumably to free the owners to do something more worthwhile) is the photo-copying model moved into the audio field.
+   the allegorical story of University students replying verbally to a lecturer's 'Good morning' whilst Polytechnic students write it down, illustrates how some students mistake the string and wrapping paper for the actual commodity being transferred.

3.1 Two variants of the Transfer Theory

The first variant worth mentioning is the baby food manufacturing analogy. In this the teacher sees his job as one of processing very tough material into more easily digestible nutrient for rather simple minds. This seems to be quite an important defence position to be taken against the charge that the subject matter is being distorted during the process of transfer. Some transferrers take the view that the integrity of the subject matter must be paramount. The preparation of the material for transfer must not in any way distort it. Others recognise that part of the teaching process involves simplifying complex ideas to make them accessible to those with a less comprehensive grasp of the subject as a whole. They allow that such simplification inevitably means some distortion but that this is justifiable on one of two grounds. Either it is the only possible way of getting any material at all into such puny containers or it is only a first stage in the development of a digestive system that later will be able to cope readily with the toughest of conceptual steaks.

The second common variant of the transfer theory is the broadcast theory which views teaching as scattering seeds to the wind rather than transferring them to specific containers. All that is required of a teacher is that he delivers himself of his nuggets of wisdom. Whether or not these are relevant or applicable in particular contexts or whether they make any sort of sense to anybody but himself is not his concern. His responsibility is solely concerned with ensuring the purity of the seed.

3.2 Shaping Theories

There are many varieties of shaping theories. One subset of these theories views students, or at least student brains, as raw material (metal, wood or day) to be shaped, or moulded, or turned to a predetermined and often detailed specification. When teachers are describing their teaching in the light of shaping theories their favourite verbs are 'produce' (produce a competent engineer, designer, architect) and 'develop' (develop a capacity to solve problems, to manipulate data, to handle equipment). Typically, teachers say they do this firstly by 'showing' and 'demonstrating' these qualities and then setting exercises whereby the qualities are fashioned in the students. These teachers also frequently use the language of the athletics coach or the industrial trainer. They are unable to find much useful distinction between the concepts of training and education and if they do see the distinction they will see themselves as being engaged more in the former than the latter.

Teachers who see their end products more in terms of connections than shapes will find the electrical versions of the shaping theory more attractive. According to this version, teaching is principally a matter of making connections in the students' minds. This applies to connections between various parts of the subject as well as to connections between various other aspects of the student experience.

Teachers who are guided by shaping theories are in good company. They are given respectability by the behavioural psychologists who have taken the word 'shaping' and adopted it as a technical term for predictable behaviour patterns, which have been deliberately induced by operant conditioning. They probably view this as a behavioural manifestation of neuronal connections being made in the Central Nervous System.

The typical teaching environments of shaping theorists are not only lecture theatres but also science laboratories, engineering workshops, problem classes, gymnasium and studios of various kinds. In workshops and laboratories students will be set specific exercises and they will be given copious instructions on detailed workshop or laboratory schedules. They will be closely supervised by assistants called "demonstrators". The exercises all have quite specific predetermined outcomes and the success of the students in their practical work is judged according to how closely they approach these specified models. Curiously in science laboratories, these exercises are often called 'experiments'. Anything less like a real scientific experiment, with all its essential uncertainty and unpredictability, would be hard to imagine.

In more theoretical subjects such as mathematics and law, and in the more theoretical elements of subjects like science and engineering. The practical exercises of the laboratory and workshop are substituted by equally stereotyped theoretical exercises or 'problems'. The usual teaching strategy in this case is for the teacher to demonstrate the way of solving the problem by 'going through it' at the blackboard or overhead projector and then for the students to be required to solve similar problems by the same methods.

Art and design studios, with the usual connotations of free expression, might seen unlikely places to find shapers at work. However, the world of commercial art is a curious mixture of freedom and constraint with the consequences that many teachers (and students) have fairly precise blueprints for many of the qualities of the professional designer who will be the product of their courses. If this leads them to the view that there are very limited ways of achieving this end then they will probably adopt the shaping theory of teaching.

At first sight the lecture theatre might seem an unpromising environment for shaping students because they have so little opportunity for practice. But it seems that the degree of absolute control that a lecturer thinks he has over what is going on in a lecture appeals to shaping theories. It is a splendid opportunity for the demonstrator to demonstrate. Shaping apparently happens through the sheer force of the spoken word and the authoritative presence of the expert on this controlled, passive raw material.

4   The Building Theory - a hybrid

The building theory is not one of the four basic theories but it is a particularly common form of hybrid

between the two simple theories just described. It is also a possible bridge to the two developed theories, so this is a convenient place to describe it. The words 'build' and 'building' are very frequently used in association with the word 'concept'. Concepts seem to come about by being built or constructed more often than by other means.

The building theory of teaching views students brains as building sites and the theory is a transfer theory in that it recognises that part of the job of teaching is the delivering of the raw materials of the subject-matter to the site. However, it is recognised that when a student learns a concept. He is not simply taking delivery of bad of bricks. A concept is a complex structure built of many different inter-related elements. Teaching, therefore, involves not only delivering the materials; it also involves building the structure according to a predetermined plan. Andrew Northedge, (1976) writing about Open University courses suggests that students get the feeling that courses are 'not so much something to do as something done to them'. He then describes the building theory of teaching as follows:

> 'Knowledge and understanding are seen as fairly rigidly structured and acquiring them is done through a rational piece-by-piece process. The teacher is the builder and the student's mind is a plot of cleared ground on which he is to build. The house consists of bricks of knowledge and skill which are laid on top of each other in a carefully planned way (with interconnecting conceptual beams and rafters, if you like the analogy). As he works, the builder follows a plan, usually prepared by someone else, specifying in precise detail all relevant aspects of the intended edifice. And clearly he works towards a finished product -the house (in other words perfect understanding of the selected course material on the part of students, as demonstrated by their passing suitable criterion-referenced teats). Once built the house remains (given occasional maintenance) a permanent useful structure. Thus we have a 'static' model of knowledge and an approach to teaching and learning as a 'closed system'.

> Northedge. 1976.

In addition to builders, there are other professionals who have important parts to play in a construction project. There is the architect who designs the building and prepares the drawings. There is the quantity surveyor, who translates the drawings into lists and quantities of all the various components required, and there is the builder's merchant who arranges for the delivery of truckloads of components to the site.

The building theory is a transfer theory when the teacher perceives his role to be principally that of the quantity surveyor and builders' merchant. The theory is a shaping theory when the role of the teacher is analogous to that of the architect and builder. Once it is realised that the student has to build his own concepts and that the design will be modified and developed by the <u>student</u> as the building proceeds, then the theory is well on the way to becoming a developed theory.

This step (from simple to developed theory) is often first expressed in the frustrations a teacher experiences when he feels that he has produced and delivered all the necessary components for learning but the student is either unwilling or incapable of doing anything constructive with them. This feeling is sometimes the trigger for the revelation expressed as:

'I can't do their learning for them - can I?'

Of course he can't - but this is not always obvious to transfer and shaping theorists. However when it does become obvious and if the insight can be developed in a positive way (instead of remaining as simple frustration with dim and unmotivated students), this can be the first step in a movement to more developed theories. In these the student, with his individual experiences and abilities and motives, becomes a very significant contributor to his own learning, not only to its efficiency but also to its direction.

5   From Simple Theories to Developed Theories

The simple theories of teaching express a very simple relationship between teaching and learning. If a topic has been taught it must have been learned. If the tea has been poured, the cup must be full (transfer

theory); if the metal has been drilled, it must have a hole in it (shaping theory). This simple relationship between teaching and learning is often expressed in the confident assertion - '... of course they can do quadratic equations, I taught them last term'.

The essential element of simple theories is that the teacher is (or at least should be) in total control of the commodity being transferred (transfer theory) or of the shape and size of the finished product (shaping theory). These 'end positions' can and should be predetermined and teaching is a fairly simple matter of arranging the transfer or the shaping.

The essence of the two developed theories is that the student is viewed as a contributing partner in his own learning. His contributions are not simply the flaws and irregularities in the raw material, nor even simply the building labourer helping to construct his own concepts. In the developed theories the student is a fellow traveller with individual and valuable experiences and abilities, motives and objectives, many of which might be rather iii defined and disorganised and some of them less useful than others. The teacher's job is to use his own experience and expertise to help the students to get their own ideas in order so that they can make more
sense of their experience and of what lies ahead still to be mastered.

5.1 The Developed Theories in Action - The travelling theory

The commonest of the two developed theories (at least amongst the teachers I talk to) seems to be the travelling theory. They use words and phrases such as 'guide'. 'lead', "point the way'. Education is seen as a journey and the subject being studied represents one of many interesting and challenging areas of countryside to be explored. There is nothing flat about this terrain and the effort of climbing the hills is rewarded by the views from the tops. These views enable the traveller to see, in perspective, features he has previously only experienced out of context. A river crossing here, some marshy ground there, a small settlement and a road winding away to another area all now appear as part of a pattern that is inter-connected and meaningful when viewed from above.

Some subjects encompass a number of relatively small but isolated hills and one can get an appreciation of the whole area only by climbing several of them. As more hills are climbed, more of the area comes into view and many of the most exciting climbs are towards the edge of the territory because these give tantalising views into other regions.

Some subjects on the other hand are dominated by a huge mountain. In this case the higher you climb, the better the view (except when the mountain has its head in the clouds), but there is no easy way up this mountain. The higher slopes can only be reached by first getting up the foothills and establishing well provisioned base camps.

The teacher in this analogy is a local guide. He has climbed all the hills and mountains; he knows most of the views. He walks along the tracks and bye-ways with the assurance of one who has seen it all in context - but he is still exploring. he knows that the countryside is continually changing and that there is always something new to learn. He enjoys sharing his experience with newcomers; he can provide maps and compass and other travelling equipment and he will accompany novice explorers as a travelling companion with lots of helpful suggestions about the best routes and about what to look for on the way. he can help others to make sense of the views from the tops and he often finds himself learning something new himself -perhaps when one of his students from a slightly different perspective, points out something that he himself has never seen before. At one time he used to feel embarrassed when that happened - feeling that it showed up some of his inadequacies as a guide. But now he recognises that he will never know everything and he shares the excitement of being a fellow explorer - albeit an extremely knowledgeable and experienced one.

Some parts of the terrain are fairly easy going and with a good map and compass students can be pointed in the right direction and left for fairly long periods to do their own expiring. Other parts of the terrain are much more difficult and most newcomers need constant help from a guide if they are to make reasonable headway. No guide though, no matter how competent or experienced can do your expiring for you.

Exploration is a personal activity. Many guides therefore see their main responsibility to be that of continually monitoring the students' progress and providing them with detailed feedback on their developing skills and knowledge so that they may continue to improve.

Lots of different kinds of explorers arrive in the area and they are exploring for dozens of different reasons. Some are fit and healthy, others may be weaker but with plenty of persistence; some are farsighted; others so short sighted that they can only sea a yard or two ahead. Some are over-dependent on the guide and have to be encouraged going out on their own; others are more adventurous, even foolhardy and rush straight off into boggy ground where they sink up to their knees and get stuck. Some have been no attracted to the area that they intend to take up permanent residence. Others are there because, although their destination is elsewhere, there are vantage points here from which they can get essential sightings into other areas. For all these education is a journey. But it is a journey of exploration, not a direct trip from A to B. The teacher is a local guide and equipment supplier, not a coach driver on a packaged tour.

5.2 The Growing Theory

The essential difference between simple theories and developed theories is the recognition in developed theories that the students make significant contributions not only to the process and pace of their learning but also to the direction to the objectives. The building theory becomes a developed theory only when students are seen to be able, legitimately, to make modifications to the building as it proceeds. The building theory is then becoming the horticultural version of the growing theory of teaching. Northedge (1976) describes this development as follows:

'In this case we conceive of the teacher as a gardener with the student's mind, as before, an area of ground. But this time I suggest we view the ground as already covered with vegetation (concept systems), some of which is clearly worth retaining and cultivating. Indeed the area shows all the signs of having been tended by many previous gardeners. And, in fact, the present gardener is only one of a group each of whom tends to specialise in different kinds of plants, but whose work may well have side-effects good or bad on the work of others. In the garden plants will tend to grow quite readily regardless of intervention from the gardener, and it is his aim to encourage certain plants at the expense of others; finding ways of acting as a catalyst in bringing out the best he can from the available ground. The gardener does not work towards a precisely defined end, since the garden is continually changing as different plants come to their prima. he has broad plans as to how he wants the garden to develop (probably rather flexible ones, which change as possibilities within the garden reveal themselves), but he does not attempt to specify the exact dimensions that each plant (or concept structure) is to achieve. And though he may sit back from time to time to rest and survey his work, there is never a stage when further constructive activity is not anticipated.'

6   Subject Focused and Student Focused Theories

Why make distinctions between the two kinds of developed theory? Both recognise the student input to the teaching process resulting from the student's own experiences, aptitudes, abilities, interests and goals. Both place the teacher in a more human and responsive role than that of provider of information or shaper of inert material.

The distinction that seems to be worth retaining is that travelling theories seem to place more emphasis on the <u>subject</u>. There is a world "out there" to be explored and there is a sense of this terrain having a quits separate identity and existence distinct from the traveller.

Growing theories (like shaping theories) seem to place more emphasis on what is happening to the student as a person. The driving force for growing is internal. The emphasis is on what the student is becoming as a person rather than on where he is going in terms of mastery of the subject. The material "out there' the subject-matter is significant only in terms of what it does for the personal growth of the student. Rather than exploring the outside world the outside world consists of experiences which become subsumed in the growing personality.

I have noticed that travelling theories (and also transfer theories) seem to be more often associated with subjects that have a large factual content such as science and law. Shaping and growing theories are commoner in subjects where attitudes, activities and personal skills are more important than detailed knowledge - such as fine art, drama, management and subjects associated with the caring professions. This distinction is sometimes illustrated by different kinds of answers given to the question - "What do you teacher"? The questioner usually expects the answer - 'I teach chemistry" - or law or engineering, but sometimes the respondent quite intentionally switches the meaning of the verb by replying "1 teach under-graduates' or (especially if he is involved in extension or in-service courses) - 'I teach accountants' or managers or production engineers. Transfer and travelling theories relates to teaching where the object of the verb is the subject that is taught, like chemistry or law. Shaping and growing theories relate to teaching where the objects of the verb are the people who are learning such as under-graduates or accountants.

The four basic theories of teaching can than be represented by the following relationships:

	Simple Theories	Developed Theories
The verb 'teaching' is applied to the academic subject. It is likely to be one with a lot of detailed facts to learn.	Transfer Theories	Travelling Theories
The verb 'teaching" is applied to people. The subjects are related to personal attitudes and skills.	Shaping Theories	Growing Theories

7   Teaching Strategies Derived from Developed Theories

7.1 Experiential Learning

Developed theories place much more emphasis on the activities of the student and the contributions he makes to his own learning. Teachers speak less of teaching methods and teaching strategies and more about learning activities and learning experiences - and especially about what some of them call 'experiential learning". This term is increasingly used to describe activities such as simulations, role-play activities and games in which students learn by experiencing particular kinds of situations or encounters or relationships.
That is, they experience them rather than simply read about them, hear about them, write about them or discuss them. Experiential learning enables a student to explore his feelings and attitudes about things and issues in addition to making an intellectual reaction to them.
Experiential learning is widely recognised as being important in such subject areas as social studies, business studies and management.

7.2 Projects

The project is perhaps the commonest teaching/learning strategy derived from developed theories. The project features increasingly prominently (especially in the final year) in a whole range of subjects from science and engineering through the social sciences to the arts and humanities. Projects are also becoming more widely used in the earlier years of many courses. In fact in some of the subjects in Schools and Faculties of Art and Design, the project is the principal teaching and learning strategy employed throughout all three or four years of the course.

Not all projects however give students the opportunity of making their own significant contributions to the style and direction of their own learning that the developed theories of teaching imply. Some projects are very tightly prescribed in a detailed project specification which may allow no more freedom of development than the 'recipe' sheets which accompany so called 'experiments' in some science laboratories and engineering workshops. Some project specifications on the other hand consist of little more than a title -and this paradoxically can inhibit exploration just as effectively as a tight prescription.

8   Theories of Teaching and Studies of Student Learning

There has recently been a good deal of attention paid to how students approach the tasks of learning. A number of studies have revealed that different students adopt different styles of learning and have different approaches and attitudes to the learning process. These differences not unexpectedly have consequences for the academic success of the students.

Marton and Säljö (1976) at Gothenburg, focussed on how students approach the task of learning from a written paper. They have differentiated a "surface" approach from a 'deep' approach and concluded that the deep approach is more likely to lead to a more fundamental and long lasting understanding. Studies at Lancaster (Ramsdan 1979. Entwistle 1981) have investigated the influence of the learning environment (including the teacher) on the students' approach to learning. It seems that certain kinds of activities and expectations of the teachers will encourage a surface approach rather than a deep approach to learning. For example, an overloaded syllabus, long and daunting reading lists, overcrowded time-tables and an emphasis in the examination on the recall of facts are the kinds of conditions that seem to encourage a surface approach to learning. They are also consistent with the simple theories of teaching.

From a long series of interviews with students at Harvard, William Perry (1970) derived a series of nine stages of intellectual development through which students proceed in the college years. At stages one and two of the scheme Parry's students look on the business of learning as a process of the 'quantitative accretions of discreet rightness to be collected by hard work and obedience'. There are also many teachers who have hardly progressed beyond this simple view of learning because it is consistent with their own simple theories of teaching.

9   Some Common Problems of Teaching and Learning Interpreted in the Light of the Theories of Teaching

9.1 Mismatch between teacher's theories and students' theories

Students also have their own personal theories of teaching and one of the common problems mat by teachers whose theories of teaching are developing to become more student orientated is that, paradoxically they discover that their students are still wedded to teacher-centred theories. A mismatch between the students and their teachers in terms of their theories of teaching can result in two kinds of frustrating experiences.

One kind of mismatch will be that in which the student sees teaching and learning in the light of developed theories whilst the teacher has fairly simple theories. The student will feel constrained and frustrated at having to sit hour after boring hour in lectures having, as he sees it, an enormous amount of material 'pumped' at him with very little time or opportunity to range for himself over different ground and to get the material into a meaningful context. He will be disillusioned to find that success in assignments and examinations can be achieved by a fairly simple regurgitation of what has been given. The teacher will possibly see the student as surly, uncooperative and unprepared to get down to the hard graft of learning the basic facts.

The other kind of mismatch is probably more common. In this case it is the students who view the teaching and learning process as a transfer of knowledge. They will expect well-structured lectures, which leave them with a set of comprehensive notes, which they can learn and later reproduce in an examination.

Such students will be impatient with any attempts at introducing experiential learning such as projects, simulations and games. They will see such exercises as a waste of time because they know that the information transferred in such procedures can be transferred much more rapidly in lectures and duplicated notes. Sometimes students see some of the more creative exercises (which they have to work on independently or in groups) as an abdication of responsibility by the teacher. The students are resistant to activities designed to help them "learn for themselves' because they see it as the teacher's job to teach them. 'Why should we do his job for him? It is not our job to teach ourselves' - that is what he is paid for'. A situation in which the student is in effect saying: 'Here am I, give me the knowledge" and the teacher is saying something like: 'Let's take a journey together. Do you fancy climbing that hill over there?' - is bound to lead to frustration for both of them.

9.2 Attitudes to the Training of Teachers

Most people, who embark on a teacher-training course, initially seem to hold one or other of the simple theories of teaching. Most staff of the training institution on the other hand will view teaching from the perspective of the developed theories. This state of affairs tends to lead to considerable frustration and mutual loss of respect between trainee teachers and their tutors.

For transfer theorists, the most important thing about being a teacher is being well qualified in the subject no that what is being transferred is of the highest quality. Singh (1976) writing in the Times Higher Educational Supplement is typical of those who are prompted by this blinked viewpoint to oppose bitterly the notion of training for University teachers.

> 'Once a man has been appointed to a teaching post on the basis of his academic merit and qualifications, the university has no more right to oblige him to attend such a course than it has the right to ask him to cut the hedge around the master's or vice-chancellor's lodge".

> '... there is nothing remotely pertinent one can say apart from giving them such tips as clearing the throat before speaking, and not talking to the class whilst writing on the blackboard'.

If this represents the attitudes of some of the senior people in an institution it is not surprising that many inexperienced teachers take the view that, given high quality material there is not much to learn about getting it across - and what there is, is fairly low level and obvious like clearing the throat before speaking.

Furthermore, the newly appointed lecturer frequently finds that he is going to be expected to teach in areas of the subject somewhat removed from his narrow specialism. He therefore becomes very concerned with the business of researching and preparing the material so that it is up-to-date, accurate and comprehensive. This becomes so consuming of time and energy that learning about the process of transfer comes a log way down the list of priorities.

Shaping theorists on the other hand usually have a quite different set of attitudes towards training. They assume that participation in a training course will result in their own 'shaping' into a pristine, fully functional teacher. They see themselves as shapers of students and they expect in turn to be shaped for that role. They do not understand why training colleges became collages of education and they spend time searching unsuccessfully for the blueprint of the British Standard Teacher. When it dawns on them that even the tutors on the training course do not have a blueprint, they loss whatever respect has survived their earlier misunderstandings and they develop more and more cynicism and hostility. Some of them are able to re-establish their sense of purpose by modifying their shaping theory, perhaps via a building theory to a developed theory in which the outcome of their training experience is uncertain and necessarily varied.

9.3 Development, Reversions and Pathologies

There seems to be a generally observable pattern of development for many teachers as they gain experience, as they think more deeply about the job of teaching and as they subject their personal theories to the test of interaction with students. Such development takes the form of a modification from a simple

theory to more developed theories and often eventually to some sort of synthesis between the travelling and growing theories.

This development is expressed graphically by one of my respondents in an "automotive' version of the shaping and growing theories. he reports:

> 'I now see myself less in the driving seat and more as a mechanic helping to keep the engine of learning running smoothly".

Nevertheless, there is observable in some experienced teachers an unconscious reversion from developed theories to simple theories. There are also 'pathological' forms of developed theories, which can arise from a misapplication of some of the elements of the developed theories.

There are several kinds of reversions and pathologies and I shall describe two by way of illustration.

The first is the 'traveller' who unwittingly becomes a 'shaper'. He is usually a very enthusiastic teacher and is widely recognised by his students and colleagues as a very able one. Therein has the danger. In his enthusiasm he has arranged that there is so much to see, so far to travel, so many vistas to view that the whole excursion has to be taken at a full speed gallop - or in a high speed coach like the worst of the stereotyped American or Japanese tours of Europe. The teacher has become so overtaken by his own enthusiasm for his subject that there has become, for the student, little option but to follow breathlessly in his footsteps. The teacher may not consciously have produced a blueprint of what the students are to learn. But in a variety of ways by his own enthusiasm, perhaps even by the sheer clarity and force of his explanations and arguments, perhaps through the stature of his personality or intellect he has provided such powerful models that most of his students become cast in the mould that he has created. Teachers such as A. J. P. Taylor and David Bellamy are riveting presenters of their subjects. But their critics claim that such teaching produces students who merely parrot the teacher's answers to his own rhetorical questions.

The second example of a pathological development is that which affects the 'grower' (and less frequently the traveller) when he becomes an anarchist. The problem with both of the developed theories is that, in the absence of any clearly defined blueprint there is a danger that teaching and learning can be seen as a very purposeless set of activities with no clear criteria for establishing the worth of various possible directions of travel or kinds of growth. Thus an 'anything goes' set of attitudes is sometimes adopted. The anarchist pathology may be either student led or teacher led but it can develop very rapidly and dangerously as students and teachers reinforce each other in its development. It might be encouraged by a teacher who has fairly recently adopted a more developed theory. He is delighted to recognise a student who is showing signs of thinking for himself and contributing to his own development. He (the teacher) might recognise the student's thinking as being very confused and the contribution he makes rather trite but he is afraid of snuffing out an early flame of originality Bo he places an inflated values on the student's contribution. The student himself has just arrived at what Perry (1970) has identified as the fourth stage of intellectual development where he (the student) has discovered that everybody has a point of view and that his is as good as anyone else's. He finds that his views are readily accepted by his teacher who seems to be prepared to accept and value almost anything from anybody. This can lead to the student being more and more carefree and superficial in the contributions he makes and to the teacher becoming more and more accommodating of the variety and freedom of thought expressed - and both of them loss sight of the need to establish criteria for judging the directions of academic endeavour and intellectual growth.

10   Conclusion - Recognising and Reconciling Different Viewpoints

Teaching and learning are common everyday activities. They are, nevertheless, abstract concepts and different people use different kinds of models and analogies to help them to think and talk about these activities in which they are engaged. The kind of analogy a person uses will not only reflect his way of thinking about teaching and learning. It will also affect the way he approaches the tasks and will determine the tasks he attempts. If he is a teacher it will also determine the kinds of tasks he sets his students and the

expectations he has about the students' approach to learning. In some analogies the activity of teaching concentrates on the subject matter being taught; other models concentrate more centrally on the Larne as a person. In either case teaching can be viewed as a fairly simple activity with easily prescribed ands and straightforward mans for achieving them. On the other hand, more experienced and thoughtful teachers view the process from a more developed viewpoint, which accommodates the experience, motives, personality and objectives of the learner. In the developed theories the student is acknowledged as having a very significant part to play in his own learning and the teacher assumes the less directive role of helper or guide.

It is not suggested that developed theories of teaching are always better than simple theories. There are many contexts where it is appropriate to prescribes clear-cut objectives and where there are straight-forward» generally applicable techniques for achieving them.

It is suggested, however, that a person who has reflected deeply on the teaching learning process and whose thinking has advanced from the constraints of simple theories to the broader perspectives of the developed theories will be in a better position to choose the most appropriates approaches. There will always be situations in which teachers and students have quite different perceptions of the process of teaching and learning. There will also be academic departments and course teams whose members differ in their viewpoints. If these differences are not reconcilable there must be frustration and disappointment. If they are reconcilable they will first have to be recognised and made overt - and than they must be examined and discussed rationally and sensitively. The conceptual schemas described in this paper are aids to recognising and discussing these differences.

11 Postscript

I have recently been reminded that at last two of theories, I have described in this paper were described by Charles Dickens in 1854 in 'Hard Times'. The first two chapters of that novel constitute a vivid description of the transfer theory in action. There is a school-room containing 'an inclined plane of little vessels than and there arranged in order, ready to have imperial gallons of facts poured into them until they were full to the brim'. Moreover, the assistant schoolmaster, Mr. M'Choakumchild had 'with some hundred and forty other schoolmasters .... been lately turned at the same time in the same factory on the sample principles like so many pianoforte legs'.

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THE FOUR THEORIES

SUMMARY SHEET	Verbs commonly used.	View of the subject-matter	View of the student	View of the teacher.	Standard teaching methods	Monitoring progress	Explanations of failure: Teacher's view	Explanations of failure: Student's view	Attitude to training
Transfer theory	Convey Impart Implant Imbue Give Expound Transmit Put over Propound Tell	Commodity to be transferred, to fill a container	Container to be filled	Pump attendant. Food processor. Bar maid.	Lectures Reading lists Duplicated notes	Measuring contents of vessel. Sampling contents (for quality)	Leaky vessel. Small container	Poor transfer skills. Poor aim	Need simple skills of transfer.
Shaping theory	Develop Mould Demonstrate Produce Instruct Condition Prepare Direct (give orders)	Shaping tools Pattern Blueprint	Inert material clay, wood metal - to be shaped or moulded	Skilled craftsman working on clay woods or metal (inert material) or selecting and assembling components.	Laboratory. Workshop. Practical instructions (like recipes) Exercises with predictable outcomes.	Checking size and shape of model.	Flawed faulty raw material.	Incompetent craftsman. Poor or missing blueprint.	Need shaping to blueprint of British Standard Teacher.
Travelling theory	Lead Point the way Guide Initiate Help Show Direct (show the way) Enlighten	Terrain to be explored. Vantage point from which to view the world. Difficulties to be mastered.	Explorer	Experienced and expert travelling companion. Guide who points the way. Provider of travelling aids: maps, compass, etc	Experiential methods: Simulations, projects, etc Exercises with unpredictable outcomes. Discussion. Independent learning	Comparing notes with travelling companion.	Blinked vision. Lack of stamina. Unwilling to take risks. Unadventurous. Lethargic	Poor guides. Poor equipment Too many restrictions. Required to keep to the path: no opportunity to exploring more widely.	Need the specialised skills and equipment of an expert guide as well as specialised knowledge of the terrain.
Growing theory	Cultivate Encourage Nurture Develop Foster Enable Help Bring out	Experience to be incorporated into a developing personality.	Developing personality. Garden with growing plants (concepts).	Parent. Resource provider. Gardner.	Experiential methods same as travelling theory but tend to be less structured and more student-centred	Listening to reflections on and descriptions of personal development	Poor start. Inadequately prepared. No will to develop.	Restricted diet. Not enough food. Incompetent gardener	Need specialised knowledge of development process and skills of diagnosing need of individual plants

Olika inställningar till inlärning och undervisning.

Synsätt	Syn på ämnet Kunskap är…	Synen på den studerande Elevrollen	Synen på läraren Lärarrollen	Standard-metoder i undervisningen	Kunskaps-kontroll	Förklaringar till misslyckande Lärarens syn	Förklaringar till misslyckande Den studerandes syn	Attityder till inlärning
Överföra	Nyttighet som ska överföras. Kan mätas i någon måttenhet.	En "behållare" som ska fyllas med nyttighet	Beredare av lättsmälta portioner. Servitör. Pumpövervakare.	Föreläsning Litteraturlistor	Mäta innehållet i en tentamen. Nivåkontroll. Kvalitetsmått.	Läckande kärl. Liten behållare. Svaga elever. Lata elever. Dåliga förkunskaper.	Dålig överförings-förmåga hos läraren. Dåligt mål.	Behöver enkla medel för överföringen. Små steg. Läraren måste ta upp allt för att möjliggöra inlärning
Forma	Verktyg. Mönster	"Dött" material som ska formas	Skicklig hantverkare	Laboratorium, Verkstad, Praktiska instruktioner som recept. Övningar med givna svar. praktikfall	Kontroll av storlek och modellformning	Fördärvad, felaktig råvara	Inkompetent yrkesman. Dåligt eller inget utdelat material.	Elev behöver formas till standardformat.
Färdas	Terräng att utforska Utsiktsplats över världen. Svårigheter att övervinna.	Nyfiken forskare Upptäcktsresande.	Erfaren och kunnig reskamrat Vägvisare Anskaffare av färdhjälpmedel	Upplevelsemetoder, simuleringar, projekt, övningar utan givna svar,	Jämföra anteckningar med färdkamrat	Trångsynt, saknar styrka, ovilja att ta risker, försoffad	Knapphändig vägvisning, dålig utrustning, för många restriktioner	Behöver den speciella skickligheten som finns hos en tränad vägvisare och den specifika kännedomen om terrängen.
Tillväxa	Erfarenhet att införliva med en personlighet under utveckling	Personlighet i utveckling Trädgård med spirande växter (begrepp).	Resursanskaffare Trädgårdsmästare omvårdare	Upplevelsemetoder, mindre strukturerad från lärarens sida, mycket elevstyrning. PBI	Att lyssna till reflektioner och beskrivning av personlig utveckling	Dålig start, olämpligt förberedd elev, utan vilja att utvecklas	Icke fullvärdigt material, för lite resurser, Inkompetent "trädgårdsmästare"	Man behöver kunskap om utvecklingsprocessen och skicklighet i att fastställa behov hos olika "växter" människor