

Three essential teaching techniques

Peter Fox

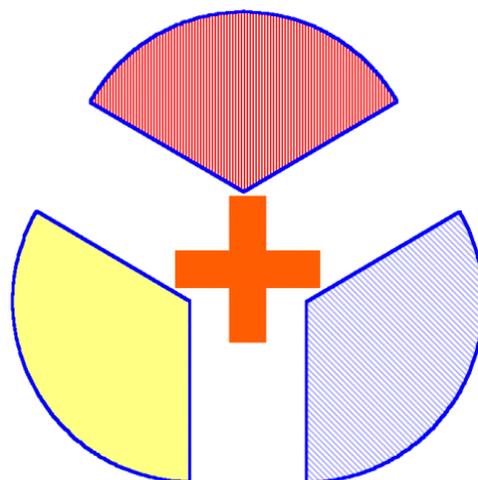
PeterFox=Coach@eminent.demon.co.uk

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Introduction

In this article I will discuss three essential techniques for teachers. It was written with amateur trainers, coaches and teachers in mind but no doubt there are also professionals for whom these might come as a revelation. If you have never been shown how to teach properly then this article is a must-read. If you think your teaching is adequate but lacks something then stand by for some turbo-charging.

These techniques can and should be applied to all teaching whether it is The history of France or the Highland fling or How to bake a flan or How to book a flight. In a few minutes you can see how to achieve every teacher's dream of cheerful, confident and competent pupils.



Have you ever wondered why some things are so difficult to learn? If you are teaching do you wonder how some students 'get lost' and stay lost but still you carry on - perhaps they will 'click' next week. OK, whose responsibility is it to organise the teaching to get the best results with the least stress? Teacher or pupil? Correct - The teacher. As pupils we might put our varying abilities solely down to our own 'two left feet' or 'I'm naturally stupid at science' - But haven't we just said the quality of the learning is down to the teacher?

Technique one - Elicit

Have you noticed the style of the preceding paragraph? It is full of questions - The nearest I can get on the printed page to a seminar where I'd be getting you to give your views. In the process you'd be crystallising thoughts into ideas and I'd be getting a good idea of how well you understand the issues. I'd also be setting up a big wide communications channel ready for use as the session develops. I'll use that for throw-away facts and hints, personal contact, trust building and of course specific pedagogical purposes.

The first teaching technique is to get the pupils to tell (or show) you the subject.

The pupils are doing all the work for themselves: Let's eavesdrop on a hypothetical example: Teacher:How many notes in an octave? Pupil:Eight. T:Good. Can you show me an example on the piano? P:[Plays a scale say from A to A] T:Good. Are you sure that's eight notes? P:[Checks] Yes. T:What was the first note called? P:A. T:Um.. But if I count the note letters on my fingers [does so A-1 B-2...G-7] then I run out of note letters at seven! P:But you've got to go back to A to finish. T:[Still not convinced] What does seven notes sound like? P:[Plays an unfinished scale] T:Which sounds complete 7 or 8? P:Eight. T:Yes. Everything we do in music we do because of what it sounds like. I see you know your A to A scale that's good.

Before we leave the piano lesson: One of the delightful challenges of teaching is that you get unexpected questions from time to time but most are predictable. If you were a pupil then what question do you have for the teacher? (“Why do I have to practice all these scales” would be mine.) There’s a really good way to deal with too-complicated-yet and what’s-the-point questions. Can you think what it is? I hope you said ‘pre-empt’. You can arrange your arguments for and against logically then get the pupils to work them out for themselves with your prompting. T: Amos, these scales are boring - why do we do them? A:I was hoping you’d tell me that. T:What bits of you are you using when you practice? A:[Who is very smart] Hands, eyes, ears and brain. T:Excellent ... And so they agree scales are a necessary evil and the teacher makes a note to look out a motivational pat-on-the-back-it-really-is-worthwhile-look-how-fast-you-are-progressing lollipop rather than plodding on with remedial exercises for a slow (and soon to be absent) learner.

Technique number one is applicable everywhere at all times. If you know a subject and like to see others enjoying it then this is your baby. If you haven’t ever done this before then have a go, see the pace increase, and see the results.

Technique two - Divide

Technique two is very simple, everyone understands it but in general are abysmal at applying it: Divide.

Dividing is essential but there are traps. I’m about to show you the traps and what to do about them. (Two parts to the discussion - Division! - Not very clear though was it.)

Trap 1 : More bits means more things to try to get a grip of.

“Hold on! A moment ago there was just ‘Building a web site’ now there’s this, that, the other andI’m lost.” Diving into complexity is not helpful. A barrage of technical terms or ‘things to remember’ will lose most people...

Trap 2 : Slides and crib sheets

... “No problem! - Here’s a handout”. Handouts have their place as we will see later, but a list of things doesn’t do much clarification for somebody who can’t see how they fit together, if they are of the same importance. Particularly distracting is the idea that “I need to know this list ... but I’ve got it for reference... should I be referring to it or memorising it or is it bumf?... and anyway we’re deep into the first item - do I take notes or what?” Mostly, hand-out lists are distractions. (But see below.)

Trap 3 : Not dividing finely enough

Suppose we split cooking into phases (1) Decide what to cook (2) Get ingredients (3) Prepare (4) Cook (5) Serve. These categories are fine for discussing general issues and techniques but lack the detail to do the job. So sub-divide and go ahead? Well no, while “A small melon” might be clear to the teacher or an experienced cook, many pupils will need to know a lot more. ‘What does “Small” mean? Ripe? Availability? Variety? Alternative?’ The same applies to Calculus or Country dancing or Court procedure. Failing to recognise the need for really really *really* simple steps is perhaps the most common crime perpetrated by teachers. (More below - It’s easy.)

Trap 4 : Confusing purpose with procedure and method

Take for example a proven method for what to do ‘at an accident’ : “Doctor ABC” as a mnemonic for First Aid procedure. [If ever there was a situation where people need

confidence and competence, this is it.] T: Amos. What's the 'A' for? A: Airway.
T: Good - Now what do you do? A: Err... Poor Amos knows the mnemonic but has forgotten the procedure due to lack of practice. (This isn't a fault of the teaching, just an illustration that headings are only tags for the real thing.) The other, more common, dispiriting, stagnating and terribly expensive approach is to teach the method without getting across the objective and background. Anyone who has dealt with bureaucrats will be only too well aware of 'going through the motions' without any attempt at looking at the situation sensibly and trying to solve a problem. Of course, if tick-the-box learning is about as much as the people 'teaching' them can cope with ... So that's why we need to do it the *right way* as follows:

Did you noticed the change of style? Sorry for the turgididity, but that's just to illustrate the normal standard of presentation - The good stuff, the stuff to take on board will be better presented...

Suppose for a moment you have been to the supermarket and brought a whole trolley of items. Do these stay in the trolley all the way to your kitchen cupboards? No, they get put into carrier bags. That is they are *divided*. Now then - this is the important bit - how many bags can you carry at a time? Two possibly, three is a strain, six is bonkers! Does the same apply to ideas? I think so. Also, when picking up say two out of ten bags do you rummage around in the other eight? No: You know how many there are left but get on with making sure you don't spill the contents of the ones you're dealing with at the moment.

Presenting a list of ideas should work in the same way:

- 1 - How many items in the list
- 2 - Each one in it's self contained (as much as possible) world.

It is really helpful if you can find a simple real-world model for your list. For example:

- * Four things in order - Positions on a clock face.
- * Repeating elements separating variable elements - A sandwich (bread-filling-bread-filling-bread).
- * Preparation before execution : Making and baking a pie.

Have you fallen-in as to why handing out a list at the beginning is a bad idea? It distracts from (a) your put-it-all-together model and (b) the part you are working on at the moment. By all means use a visual aid illustrating *the model* because your model is the foundation for a lot of work to follow. For any subject or skill there is probably more than one way of dissecting it, part of the skill of teaching is to do this well.

If you're a really bold teacher you can use your class members as components in your model - It's fun and effective, an example is (for the purposes of this discussion) a time-line from door to board in a classroom: "Paul (past) came in through the door. Sue (present) is standing at the desk. Rita (future) will write on the board. So where does John (is/was) late go?" (How many pictures do you see in the papers without people in them? Not many. This illustrates a very important matter. *People relate to people*. Would "the door was open" stand out like Paul? It certainly couldn't answer questions and react to amusing or puzzling complications. (This is anthropomorphising abstractions not role-play but there are shades of grey: "Tony will be the American Colonists....")

I make it my practice to tell people how many bits there are, hand-wave or hint as to

what they are, then ensure that the pupils have grasped the model. (That was *three* things did you get that? Would it have been better if I'd told you how many at the front?) By the way, a perfectly acceptable model which is familiar to children is "In this lesson we will do X then Y". (Adults prefer a what's-in-it-for-me payoff.)

Can you picture 3 things? Can you hold 20 ideas in your head at a time? Somewhere in between there is a comfortable number of bits which can be glued together to make the whole. What is it? Something like 5? Probably.

Before we go onto sub-sub-sub division are you clear what you should have achieved by it? I would sum it up as "This thing is made up of a (specified) number of parts. We will *focus* at each part *on its own* then stick them together *at the end* to get the whole thing."

We've just looked at 'top-down' division. Most people are capable of doing that and it can be put down on paper. The difficult bit is coming up from the bottom: Getting the smallest components right to make assembled items which are in turn assembled and so on until of course the top level of assembly gives you the whole thing. Why is this so difficult?

Because it takes as long as it takes - not as long as is allowed. Because unless you get all the little bits right you never get to build the whole thing. Because there is no room for skipping over the detail due to time or inclination constraints. Because if pupils miss one session it can be very difficult to slot them back into the right place as a fully functioning unit. Because it can be difficult to see progress. That's lots of because!

We now get to the main problem with quality of teaching: Teacher's don't have the confidence or experience to stick with getting the fundamentals right before joining them up. To start *right* at the bottom. It is a real struggle to cope with everyone's impatience. It can seem a bit like starting to build a house only when *all* the bricks, timber, bathroom fittings and carpets have been delivered to the site. Now that would be silly! So what's the answer? Divide! Foundations-Walls-Roof-Windows&Doors-Pipes&Wires-Finishes-Furnishing.

So, following our house building metaphor, if on Day One the trenches for the foundations are not right then do you fill them up with concrete on Day Two regardless? I should hope not. Instead you upset everybody by making them fix the problem. Believe me it really does upset everybody - but it soon shows who's the boss and the house will stand up straight when it's finished. (And you soon see who are the cowboys, con-artists, dim-but-cocky and so on. - Amusingly a builder once confided in me that his mate was, and I quote exactly, "as nutty as two short planks" hmmm. Reading the attitudes of pupils and organisations to 'getting it right' is a talent all teachers should have and use to their advantage.)

What does "getting it right" mean? My definition is "sufficient for use when put together with other bits". For example if I don't know you can shuffle the shelves and set the heat on the oven then I'm not going to let you bake a cake. What we're looking for is confidence in the pupil's competence not perfection.

Let's recap on division: Firstly we looked at traps. Secondly by realising that when trying to learn we can only deal with one-thing-at-a-time we saw why these were mistakes. Also we learnt the value of *modelling* the top division. Thirdly we identified

'top-down' and 'bottom-up' approaches. Fourthly we looked at the troublesome aspects of the very detailed, dare I say *pedantic*, get-the-components-right-and-the-whole-will-appear-by-magic bottom-up approach. Dividing isn't difficult, but you need a logical approach.

Did you feel that the bottom-up discussion skated over some tricky territory a shade too quickly? Are you wondering what happened to the third essential teaching technique? (If you'd forgotten about it that's probably because I didn't model the 3 techniques - How would you do it?)

Technique three - Exercises.

You probably know of lots of exercises. What are the characteristics of a good exercise? [Jot down your answers.] Hey! That's an exercise. What purpose does it serve? Would it have been better if I'd asked for say "three things" or "most important at the top" or "200 words"?

Actually I don't think that exercise was a good one at all. Even if we were face to face rather than communicating via print it is little more than 'are you awake?'

My definition of a good exercise is one where *at least the first three* of the following opportunities are exploited:

- An opportunity
- To Practice some skill or knowledge to develop fluency and accuracy
 - For the teacher to assess competence and confidence
 - For the whole class to appreciate the poor-adequate-good scale
 - (If possible) to demonstrate that 'progress' has been made - We're getting there!

There are also important practical matters such as: Quick and cheap to organise, easy to control, everyone participates, relevance and fun. Many well intentioned sessions have collapsed in confusion through over-ambitious plans attempted by inexperienced teachers. Good teachers seem to be able to manufacture enjoyable exercises in seconds from thin air - Cherish those teachers and build on their technique. (Why do pairs and groups of three work but fours not? Odd isn't it.)

To return to the opportunities a good exercise provides:

Practice some skill or knowledge to develop fluency and accuracy

Anyone can see we have to give the pupil enough information to make multiple attempts and learn a bit each time and get a bit better each time. So the 'test' part comes after the 'instruction' part. (Obvious - but the 'exercise' at the top of this section didn't follow any instruction - did you identify that? If not then make a mental note to distinguish between 'Activities' and 'Exercises' in future.)

This isn't to say that the pupil can't find out for themselves what *doesn't work* on an exercise or there are no opportunities for discovery! The 'instruction' might concentrate on the *method* or the *purpose* or *both*.

Example: "I'll show you how to make an arm sling then you can do it yourselves, pair up and try it on left and right arms." The objective *of the exercise* has been clearly stated but in this case (perhaps we learnt this before) not why or when to use an arm

sling. So in this case the objective of the exercise is to perfect the *method*.

Example: "I want you to come on and dominate the stage - Everything that happens in this theatre depends on you." The purpose or ultimate objective has been clearly stated. The *object of the exercise* - to acquire stage presence techniques is left unsaid. Perhaps we see what happens or perhaps we need to discuss ideas first. (Bearing in mind 'see what happens' is like 'guessing' with no preceding 'instruction' is there ever a case for 'seeing what happens'? Activity or Exercise?)

The big mistake - not making things small enough.

It is easy to assume that your pupils can take things in their stride. Err... no they can't. Time after time you'll find that breaking things down into the very smallest steps is needed if pupils aren't to get lost somewhere. All this takes time which is why you need to be an efficient exercise organiser. But what you will find is that once you've spent that time getting the fundamentals right for one application, they will be there for re-use with others. For example taking time to ensure everyone knows the meaning of terms used in one dance will mean all other dances are easier *and faster* to teach with less sorting out of confusions. Getting fluency in something that will be used a lot means less stress, less fumbling and being able to focus on new stuff. As a teacher you need to have in your mind a minimum level of fluency in a skill required before you can move on. You're not expecting perfection but you are looking for competence.

Here is a proper exercise for you to have a go at:

- (1) Look at a skill or a body of knowledge that requires basic understanding that you teach.
- (2) Find the really basic things - how to hold a chisel, the difference between 'goods in' and 'goods out', the gear-stick pattern, what internet clients are on a typical computer - and so on.
- (3) Now break it down into smaller parts: What is a chisel? That's the handle...what do we call the metal bit? Are there left and right handed chisels? Is there one grip or many? How can a chisel be dangerous?... ..good technique and so on.
- (4) Tick off the bits you check as you go when teaching normally. You are looking for all ticks of course. Missing ticks might be worth thinking about, while all blanks mean you really need to develop your technique.
- (5) Quiz recent pupils directly on the items in your broken-down list to see how well they picked up these fundamentals. If you have a formal class structure you can plot the scores numerically.
- (6) In this self-assessment you will probably find rather more hazy ideas and sloppy skills than you thought. Remember, these are the very basics and if these aren't right the rest will never be. Would you live in a house where the mortar for the bricks wasn't mixed correctly?
- (7) Think about changing your approach to systematically teach and check each part.
- (8) Later, compare the 'results' of the updated method in terms of confidence and competence with the old.

Finally: Teachers are naturally keen to move onto the next thing. Pupils may be also or they may be floundering at an exercise and dreading the next thing - a recipe for failure. It's the old quality -v- quantity problem. As mentioned above there are standards below which you (your pupils) must not drop if they are to progress. This isn't a new concept! The trouble some teachers have is insufficient time to properly cover a syllabus and the obvious answer is to let some students fall by the wayside in a pell-mell rush. This might be acceptable to some in some circumstances (I never

understood Latin at school and never cared) but for the most part the teacher should not let stragglers develop in the first place. The method is to do lots of small and simple exercises. (a) So the teacher can spot laggards quickly in order to step in with assistance; and (b) to 'burn-in' the skill or knowledge...

...Practice makes perfect - But only if you know what you or your mentors are trying to achieve. Repetition is worse than nothing if it reinforces bad habits! Another exercise for you to try:

- (1) Find some aspect of your teaching that uses repetition.
- (2) If you were judging this as a performance what points would you be looking for?
- (3) Quiz your pupils to see if they are aware of those same points.
- (4) Self assessment: You should expect a fairly high response rate - easy to get by leading them on as you would in a teaching session, but you might find some serious gaps... ..indicating where you need to be clearer in future, or where you let your assessment eye off the ball... ..or where the exercise wasn't very good at doing what it was supposed to do. By the way things like essay writing are repetitious. "Write an essay on the uses of fossils" - Is this an English competition, fact finding competition or creative competition?

For the teacher to assess competence and confidence

We have practically covered this aspect already. What were the two C's being assessed? You don't often see 'confidence' in exam tables - What's that doing there? What can you do better if you have confidence? Everything! Including applying your skill or knowledge, including not having to worry about that thing when put into something more complicated, including being able to cope under difficult conditions, including asking for clarification when you're not sure, including being able to help others with your skill and knowledge.

If you've got lots of small steps then you need lots of exercises. Actually you can have a few exercises but develop them - 'First the front brake, then the back brake then both together'. But, but, but: If there is some aspect that's causing trouble then try to split it into a side-branch exercise. If at first you don't succeed then create a mini-exercise. If there's confusion with left and right hands then shouting, shrugging or sarcasm probably isn't the best thing. Create another exercise to add to your repertoire. (Left-Right is probably the best illustration of where failing to clear up a tiny matter spells confusion later. It's also a good example of the importance of confidence.)

For the whole class to appreciate the poor-adequate-good scale

Activity:

- (1) Line up your pupils and tell them you're going to try and catch them out by calling "left" or "right" and they are to turn in that direction.
- (2) Proceed to call "Left" - see what happens. Everyone knows if somebody gets it wrong.

This illustrates the most basic form of pass-fail awareness. (By the way : When do you think adding a competitive edge is a good idea? Do you do it enough in your teaching?)

A class is continually learning from itself as one pupil helps or vies or commiserates with another. What's 'good' can easily be distorted by fashion - Cars may be easier to draw than horses and get better marks for the same effort - All very well, that's something worth knowing, but it doesn't mean that drawing a car is a better than

drawing a horse - after all only the best artists could even attempt a horse! Clearly the teacher needs to manage the value framework here. This is an important issue because every student wants to do the least work to get the most result and there will always be pressure to fudge, shortcut, cheat. What's wrong with taking the easy option if it gets an acceptable result? The teacher needs to clarify what the acceptability scale looks like and how it is measured. "Amos! Those shoes are an utter disgrace! Tomorrow I want to see...". "That's alright Sue, take it easy, we're not expecting pensioners to jump round like gymnasts."

A class of one still needs to gauge their performance. In a one to one coaching situation it is even more important for the pupil to know where they stand. Many coaches just give a barrage of commands which means the only way a pupil can twig where to channel their energies is by competition and exams.

Demonstrate that 'progress' has been made - We're getting there!

Do you recall the problems with the bottom-up approach? One was that we only get to see the whole result at the very end. Until that moment everything has been in bits on the workshop floor. This is very dispiriting for the pupils who never feel they are achieving anything. They don't have the vision and experience that the teacher takes for granted. It also gives 'authorities' the willies because it looks like they might be giving out a diploma for three quarters of a subject (instead of a whole subject even if a blind eye is turned to the poor quality.)

The answer is of course to divide. But the logical division we did above may not be the right way to block-out stages on the ladder of learning progress. Firstly not all learning is constrained by timetables and tests or even have a formal syllabus. Secondly, and to my mind more importantly, pupil motivation through achievement should be the priority rather than regular assessment for project management reasons.

The easy way is to ensure that every session has at least one exercise (or more for long sessions) with some definite 'I can do that now' or 'I can see I'm getting better' exercise. Revision exercises at the start of a session have lots of good points to recommend them. Put-it-together at the end of a session exercises should leave people feeling the effort has been worthwhile and keen to continue next time.

Conclusion

So that's it! Only three things. This should have been revision for professional teachers but since so much teaching goes on outside classrooms it is really handy for everyone to understand how to do it the right way. If you've been the subject of lots of information, "do what I do" and 'testing' then you'll appreciate why it is so important to engage, enumerate and exercise. When training yourself you'll get a real buzz from the dynamic atmosphere, watch the competence and confidence of the pupils take-off and see your own competence and confidence do likewise.

Here is a quick-reference list of the points covered.

Enquire and engage to elicit

The most powerful technique for building understanding
'Dry knowledge' can be dressed up using this technique
Always praise reasonably acceptable answers.
Work at giving pupils confidence

Top-down

Divide into a handful of parts at a time.
Present a model of the logical structure of the division.
Say how many parts there are.

Bottom-up

Never take any small detail for granted.
Be clear what competence is required before gluing bits together
Monitor confidence as you go and stop as soon as a pupil 'loses the plot'
Frequent exercises keep pupils on toes and improve your assessment

Exercises

Practice some skill or knowledge to develop fluency and accuracy
For the teacher to assess competence and confidence
For the whole class to appreciate the poor-adequate-good scale
(If possible) to demonstrate that 'progress' has been made - We're getting there!
Prior instruction: Method or purpose or both.
Some standard for deciding if pupil is ready to continue.

Here are some other tips for teaching

Don't be fuzzy in any instruction. Really make an effort to be ultra-clear. For example compare "Split into two groups" and "Split into two groups. Boys at this end, girls at the other." Which will get things moving quicker? Compare: "Follow my steps" with "Starting with your left foot - Left, right, left - I'll do it with you." Which will be least confusing?

When setting any task (activity or exercise) ensure everyone knows exactly what they are supposed to be doing and when they will have achieved a reasonable result.

Before setting a task, and afterwards, refer to the objective, the worthwhile achievement. The exercise is about concentration and effort at the *method* - You need to preempt the 'why bother' question and point out when worthwhile goals have been reached. If there are few goals ready to hand then institute something artificial, say a merit scheme, badges, competitions.

Be dynamic, cheerful, positive, relaxed: By all means exaggerate humourously and use other de-stressing techniques.

Don't forget to praise at every opportunity.