

The Relieson - Backwards is the new forwards

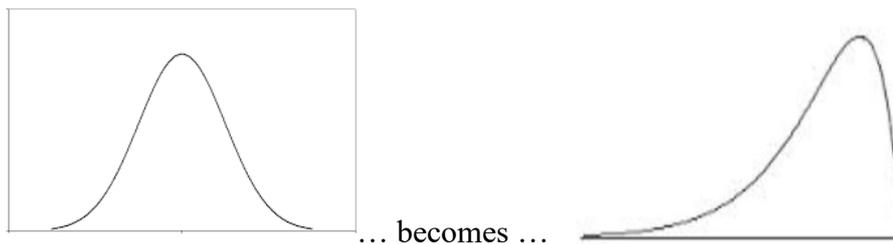
The goal of education should be that everyone achieves. Anything less is accepting a degree of failure that would be unacceptable in most other spheres. Imagine the outcry that would happen if the health service had the same failure rate as education.

Traditional teaching assumes a planned progression through a curriculum. Start with the easiest concepts or those concepts/information on which the rest of the course needs. Teachers spend a lot of time preparing a logical and coherent scheme of work. They then use potential teaching time to sell this scheme to their charges so that they have a mental map of where they are going and why. Teaching can begin now that everyone is on board.

For example, a teacher responsible for delivering first year chemistry might start with an overview of the periodic table. They might then spend a week or two on each chemical group before honing in on the specific properties of particular elements. Finally, the students could then be shown some of the most commonly occurring bonds. Throw in an experiment or two each week and explain how to write them up and a scheme of work is born.

Few would contradict the sequence above. It starts at the beginning, gives the grounding necessary to progress to the next stage. The students are taken on a clear and logical path. This would get a tick from those to whom the teacher is responsible. Studies have shown that ability is normally distributed and therefore the results at the end of the year are also likely to be normally distributed.

Bloom developed a teaching technique which he called Mastery Learning. Under this system the pupils progress at their own speed through each element of the scheme of work when they have shown in a test that they have mastered the current item on which they are working. This implied that each student could be at a different place in the scheme of work. The system includes peer mentoring and peer administered assessment. This was found to have a strong positive influence on progress, motivation and self-esteem. Instead of the results being normally distributed, they were highly skewed to the upper end.



However, some still failed. In each class there were those who even good teachers were unable to reach. For some of these there was too much going on in their life. They were bereaved, abused or full of hormones. The others though felt demotivated to such an extent that even trying was not an option. They looked at the first element on the curriculum, could not understand it and therefore gave up. They had become so used to failing that they were more comfortable being told off for inactivity than they did for being a "failure". This label

would have been years in the making, in fact it was so ingrained that it had become part of who they felt they were. We have all taught people like that.

But what about those who are not part of the "failure" category? Of these, some will be lesser achievers. Yes, they pass, but not as well as most others. Some will be willing to try, but lack whatever is needed to be more successful. That may be natural inability, but is more likely to be missing underpinning knowledge or initial motivation. They may be expecting to do badly again, but find that they can achieve at last when they have to deal with far smaller tasks and have the time they need to understand them.

These students will not reach their potential in this course, but their new found spark of confidence can be carried into the next course. If they also succeeded there then a cycle of underachievement could be eroded.

The problem therefore becomes one of lifting students into the "I can" category. Motivation and self-perception could take it from there. A good level of metacognition is likely to increase success rates faster than tinkering with the curriculum.

The discussion above identifies two groups. Those that cannot be helped because of their personal circumstances and those for whom underpinning knowledge is the issue.

Current teaching strategies see a progression along the curriculum, but this is rather too simplistic for the majority. Most people need to revisit previous learning or plug gaps that were not filled originally. If people progressed with confidence that they had understood each section of the curriculum then more would succeed. They would have a feeling that they can because they have.

The current system is not greatly different to that used in Victorian times; put a large group in a classroom and expect them all to travel at the same speed. The size of the classes has changed but the underlying philosophy has not.

Mastery Learning implies that each student might travel at a different speed, but it does not allow underpinning knowledge to be accessed, none of our educational system does. A student struggling with a new part of the curriculum may need to take one or more steps backwards to take the next one forward. This would be seen as a negative mark for the student - they have somehow failed to remember everything they have been taught or not understood all the implications of the ideas to which the caring educational system has exposed them. However, the students will feel more secure when they do.

It would therefore be helpful if sections of learning came with references to the learning materials for topics on which the current one relies – one or more "reliances". Instead of learning being a one-way trip, it could become bi-directional – both up the tree of knowledge and down to visit the beautiful buds missed or barely appreciated on the way up. This would allow a broader, more secure path for students to follow.

There are arguments against this approach:-

1. it would take time out of the curriculum.
2. it would lead to a shallower overall achievement level.

Whilst using reliesons will take time out of the learning, the payback is that new items are more secure. This will then speed up their acquisition and therefore make education more efficient.

This leads on to the second criticism, that the level of achievement at school would be less. If students have firmer foundations then the loss of time for the higher learning would be likely to offset the time needed for this level of learning. The level of shallowness would be expected to be minimal.

However, there is another aspect to this more solid foundation. Educationalists and the politicians assume that their responsibility is only for what happens in the educational system. If students feel secure then they will continue their education outside the system. Education does not have to be in a formal setting nor does it have to stop when full time education finishes.

So what is a relieson? It is a pointer to materials on learning that immediately underpins the task under consideration. This concept does not assume links to every piece of learning that is used. For example, the opening week of the imaginary scheme of work for chemistry described above starts with the periodic table. This would need reliesons for the concepts of tables and elements. It would not have them for letters or the concepts of rows and columns. The reliesons would only link to the closest concepts. The materials on, say, tables could then have its own reliesons for rows and columns. This could, over time form a tree of learning materials which would make learning more fun and more accessible.

There could be two kinds of reliesons; direct and indirect. Direct reliesons are those which underpin the current task directly. An understanding that a table is formed of rows and columns in which the items of each row is linked and the items in each column are also related underlies the periodic table. This is a direct link and all these links would form that tree of knowledge.

Indirect links are ones where an understanding of a different area is required. For example, some years ago a colleague and I set a piece of coursework for a statistics course in which we asked the students to compare runs of economic statistics for the 20s and 30s with the same runs for the 50s and 60s. We had a good giggle when the coursework showed that half the students had not realised that there had been a world war in between. However, the problem was that this coursework needed an indirect relieson for the Second World War. The mistake was ours rather than theirs.

Those of us in education tend to assume the students know when they don't understand. But this may only become apparent when asked to complete a task based on this new knowledge. It could therefore be helpful to make these relieson links explicit rather than assume that the student knows what they have missed or misunderstood.