

# Learning by doing –

the traditional  
way of learning in  
a 21<sup>st</sup> century world

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# Contents

<b>Chapter</b>	<b>Title</b>	<b>Page</b>
1	The first 24 hours	3
2	Learning from experience	3
3	Cognitive overload	4
4	Classroom training – a world of cognitive meltdown?	4-5
5	GEAR up for better learning – gain more knowledge, develop new skills	5-6
6	Retendo training: powered by GEAR, delivered through technology	6-7
7	Be bold – reap the rewards	7
8	Summary	8

## Learning by doing – the traditional way of learning in a 21st century world

### 1. The first 24-hours

I first started travelling when I was in my late teens. I worked on boats as a deckhand in the Mediterranean swabbing decks, hauling sales, grinding winches, taking the rubbish ashore and making the most of my time in the sunshine.

The joy of being aboard a boat is the isolation and the sense of peace that brings. But it is impossible to live in complete seclusion. It is, of course, necessary to go ashore from time-to-time. The second I stepped on land I would realise how little I understood about the country around whose coast I was sailing.

I learnt that the first twenty-four hours ashore was when I was at my most vulnerable. I could get ripped off over the price of a taxi, a meal or a hotel room. Now, I am very wary of buying anything when I first arrive in a new country. I know that those first twenty-four hours are the 'danger zone' and that it takes time to understand my new environment. What looks good at first glance is not always the best I can get.

I learnt this lesson through a series of specific (and usually infuriating) incidents that took place on my travels. I learnt from experience.

### 2. Learning from experience

Think back to when, or should I say how, you learnt to drive a car. Ninety per cent of what you learnt was developed by spending time on the road. In the beginning you made lots of mistakes, but you learnt from these, and their number and frequency gradually reduced. Every time you got behind the wheel your driving skills and road awareness improved. Quite simply, the more experience you gained, the better you became.

Learning through experience is something which seems to have been forgotten in the training world. Today, training focuses on the theory of a task instead of actually doing it. Theory is not reinforced with enough practical experience. This is a very unnatural way of learning and is not how we learn throughout the rest of our lives. Normally, anything we don't put into practice is quickly forgotten.

We learn by doing. Specific incidents happen to us and we wonder about them. This, in turn, makes them stick in our memories. Then we tie them together into generalisations which we remember. This is what makes us experienced, and it is experience which makes us more effective.

It's important to note here that people learn at different paces. Some require more experience, and more failures, than others before they master a task and become effective. Experience, it seems, is in the eye of the beholder.

### 3. Cognitive overload

So experience is a positive force in our quest to learn. But who, or what, is the nemesis? The answer is simple: large volumes of theoretical information. Information overkill actually inhibits the learning process. It's called "cognitive overload".

**Definition:** "Cognitive overload is the result of excessive demands made on the cognitive processes, in particular memory".<sup>1</sup>

Cognitive overload occurs when you are presented with so much new information that your mind simply cannot process it fast enough. As a result the information is not transferred to the long-term memory which, alas, is where it becomes useful.

The result of cognitive overload is boredom, frustration and zero improvement.

### 4. Classroom training – a world of cognitive meltdown?

We know that we learn by doing. We know that we gain experience through failure. We know that people require different degrees of experience to become effective. So why then do we train our people in an environment where theory dominates practice, failure is feared and the pace of learning is the same for all? For students, traditional classroom training can be nothing more than lifeless comprehension. From a learning perspective, this type of training for the masses is cognitively flawed and minimally effective.

Consider this. Learning how to juggle is easy – you can learn from a book. You start by throwing one ball in the air and letting it land in your hand. Eventually you will know the position of your hand relative to the ball without having to look. Then you add an extra ball and go through the process again, programming your hands to be in the correct place. You will drop the balls many times but every time you fail you will improve. Practice makes perfect.

Content can be a problem for classroom courses. They can often focus on theory and not practical application. Would you be able to learn to juggle if we took away the balls but let you keep the book? Human brains just don't work like this. Our short term memory is capable of storing information for no more than 30 seconds<sup>2</sup>. In order to store the information it must be repeated or rehearsed.

Furthermore, many courses try to cram in too much. Course developers are often asked to squeeze eight days of training into five. This minimises spend, and fits nicely into our calendars and course booking systems, but it is not good for the learner. The training room becomes a pressure cooker and not a place for study.

Learners reach the point of cognitive overload when their brains just cannot cope with the amount of information being presented to it. This learning then becomes a waste of time and money.

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1. <http://www.clarktraining.com>

2. [http://en.wikipedia.org/wiki/short-term\\_memory](http://en.wikipedia.org/wiki/short-term_memory)

Another problem with classroom training is that the expert teaching the class has to work at a pace which suits the majority. Consequently the detail into which they can go is intrinsically limited. Furthermore, there will be significant numbers of learners who will fall outside of the 'majority' who will either find the course too fast or too slow. They will either want more or less detail.

Any practical exercises are designed to be completed within a set amount of time. If, for any reason, these exercises are not completed within the allotted time, learners are forced to move on. They will only have a limited opportunity to practice what has been learnt in a traditional classroom because there is no time to do any more. The trainer has, after all, got a lot of material to get through before the centre is closed at 4.30pm and the cleaners move in!

Failure is an opportunity to learn. The more you fail at a task, the more you remember. In a classroom with a large number of delegates the ability to fail is rare because the expert is moving along at a pace which suits the majority.

Learners do not like to be seen to be failing. Peer pressure is strong and students would rather not understand than be seen to be stupid. This is vital experience which is missed. Being allowed to fail is a good thing. And this needs time.

## 5. GEAR up for better learning - gain more knowledge, develop new skills

So how do we make training more effective and avoid cognitive overload? According to Dr. Ruth Clark<sup>3</sup> there are five key rules:

1. Make sure the learning is specifically useful to job and leave out the fluff
2. Ensure there are frequent opportunities to practice and then practice, practice, practice
3. Provide plenty of reference based learning so that students don't have to memorise vast amounts of information
4. To keep students focused, cut learning into small chunks and keep lessons short
5. Allow students to learn at their own pace.

Based upon these rules, a proven instructional methodology has been developed. The new methodology combines instructor-facilitated discussions and team activities; immersive, real-world-based practice environments; and self-directed study, research, and assessment. The result is that students learn and retain far more than they would in a traditional classroom course. This mix of theory and practical application is known as 'GEAR':

**G**ather  
**E**xpand  
**A**pply  
**R**eceive Feedback

GEAR delivers learning in short modules with up to ten times the number of student interactions and collaborations of a traditional classroom course. These short theoretical sessions are mixed with self-paced learning, reference and comprehensive practical exercises. This is followed up with feedback.

The GEAR cycle is then repeated accordingly, guiding the student along a series of cognitive stepping stones that mark out the learning journey toward their objectives.

Each cycle of the 'GEAR' methodology includes approximately four hours of study and feedback. No single component is ever more than two hours long. This is because the human brain cannot concentrate for any longer than two hours – it reaches the point of cognitive overload.

For example, a student would begin by learning theory at a two-hour instructor-led 'Gather' session. They would then move into the self-paced elements of the 'GEAR' methodology which are the 'Expand' and 'Apply' components. At this point, the student will have the ability to develop the theory learnt at the 'Gather' session at a pace which suits them and not one which suits the majority of their co-students. The 'Apply' component is the point at which the student gets to put all of the theory into practice. The student should not be limited to carrying out these practical exercises once or twice. The last stage of each 'GEAR' cycle is 'Receive Feedback' which is where the student carries out an assessment before returning the results to the instructor.

The great advantage of the GEAR solution is that of time. Students get the time to learn at a pace that suits them. They get the time to fail and to practice. Students learn more thoroughly because they are given the time to transfer what they have learnt from short term to long term memory. When they return to their workplaces the students will be more competent.

## **6. Retendo training: powered by GEAR, delivered through technology**

Every Retendo course is developed using the GEAR learning methodology. But how do we apply this traditional, practice-led, way of learning in the 21st century? The answer is simple: online delivery.

On a Retendo course students belong to a learning community where their activities and interactions take place in the online environment. A dedicated website, called the Retendo Learning Portal, is provided for the students as their point of access to everything linked to the learning. Every student has access to the Retendo Learning Portal which contains discussion groups, wikis and blogs. The portal is available after the course so they can continue to ask the instructor or the group questions, or share learning.

The initial 'Gather' session of the GEAR cycle is delivered as a synchronous live training lesson online to the students' desktops by an experienced trainer. The instructor will explain, demonstrate, engage and challenge the students on the subject they are learning. This is not a glorified PowerPoint slideshow. This is a highly interactive, synchronous session. The trainer will keep the students attention through a variety of tools such as polls, team activities and games.

The student then moves into the self-paced elements of the 'GEAR' methodology which are the 'Expand' and 'Apply' components. They use a mix of materials which include self-paced e-Learning and online reference books to expand their understanding of the subject.

The 'Apply' component is the point at which the student gets to put all of the theory into practice. With Retendo students get to practice with technology on real systems, accessed through the internet. This is not simulated. It is real. The students carry out the exercises which are pertinent to the technology they are learning and their job role. The student can configure, implement or adjust the systems in a safe environment where there are no implications if things go wrong. Safe in the knowledge that they can't bring down business-critical systems, students can go beyond the prescribed theory, expanding their knowledge and developing their skills. Practice, practice, practice!

Furthermore, the student is not limited to carrying out these practical exercises once or twice, as they are in a traditional classroom course. With Retendo, the student will get ninety-days of access to both the self-paced materials and the practical scenarios, in which time they can return to any topics they choose. They can practice over and over again.

On a Retendo course, the students don't have to worry about the embarrassment of failure. They have time to re-visit stumbling points and address them. They can do this by replaying recordings of the 'Gather' sessions, exploring the reference materials, taking advantage of the extended access to the practice labs, or by instructor interaction via the Retendo Learning Portal.

The last stage of each 'GEAR' cycle is the 'Receive Feedback' step. Students complete a ten minute assessment and send this back to the instructor for evaluation. This will allow both the student and the instructor to assess progress and decide whether additional study is required.

## **7. Be bold – reap the rewards**

For all those who embrace this return to traditional learning, albeit enabled by 21st century technology, the rewards go beyond optimised learning.

There are clear benefits to online delivery: you save money on travel and subsistence costs, you benefit from not having staff away from the workplace for extended periods, and you can maintain the quality of training across a dispersed workforce.

Global organisations have a need for consistent training across a geographically dispersed workforce but there are few training companies with global coverage. Several organisations profess to have such reach but the reality is that their capability is based on agreements with multiple locally-based training companies. This is a logistical headache and, more importantly, the standard of training will vary in quality by the number of sub-contracted training companies involved in the delivery. An online GEAR solution can be delivered anywhere in the world, from anywhere in the world.

## 8. Summary

Training represents an opportunity to increase the effectiveness of the people who are responsible for driving an organisation forward. Successful organisations will choose training solutions for their cognitive impact as well as commercial viability.

Classroom training has shortfalls because it focuses on teaching theory. Students are given very little chance of actually doing the task. This is not how we learn. We learn by doing. All that is being achieved is cognitive overload.

Training developed using the GEAR methodology will ensure students gain more knowledge, develop new skills and become more effective. Online delivery, moving learning away from the classroom and into the workplace, enables GEAR to be a sound commercial proposition as well as the smart learning choice.

Choosing the right training course is similar to the first 24-hours ashore: what looks good at first glance is not always the best you can get. It's easy to make the wrong decision and get ripped off. The most important thing is that the training achieves its learning objectives. Take your time, consider your options and get to know the environment. Oh, and watch out for bloody taxi drivers!