

“THE MOST IMPORTANT TEACHING VISUAL AID”

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How often have we heard that “one picture is worth a thousand words”. Well, it’s true. Instructors often utilize various teaching aids to reinforce learning and to emphasize a specific concept. A visual demonstration if used properly can be a powerful tool to significantly enhance the learning process with very successful results. However an undesirable picture can be just as powerful reinforcement of learning, but producing an unwanted outcome.

A Cartesian diver is not a recently discovered teaching aid. It has been around for many years, and it has served many Scuba Instructors as one of the most versatile teaching aids. It is an excellent way to demonstrate Archimedes Principle, Boyle’s Law, and with a little imagination other laws and principles applicable to diving. The Cartesian diver is a figure of a diver cut out from a piece of neoprene. It does not have to look pretty, but it must be weighted properly with tiny bits of lead or any other pieces of metal, to cause the diver float vertically at eye level when submerged in water. Placed in a clear flexible soda bottle (one liter works well), filled with water to the neck of the bottle and capped, the Cartesian diver is now ready for a simple but one of the most graphic demonstrations of diving physics. When the bottle is slightly squeezed, pressure inside the bottle will increase, resulting in compression of the neoprene. Guess what happens? As pressure is increased, the volume of the neoprene diver is decreased, and the Cartesian diver begins to descend. With just the right amount of pressure on the bottle, the position of the model can be held steady anywhere in the water column. Positive, neutral and negative buoyancy can be effectively demonstrated during a lecture in a classroom environment. Students have a graphic visual demonstration of changes in volume as it is directly affected by pressure. This simple teaching aid is a positive reinforcement of learning.

But not all teaching aids are that positive, however they may be just as powerful and reinforcing.

An Instructor shows up at the pool. Students are eager to begin their diving exercises. They feel confident in the Instructors ability to teach them the necessary skills. He or she is a professional with lots of experience. Hundreds of dives in diverse conditions, wreck dives, cold water, deep dives in zero visibility, laborious artifact collecting, many close call experiences, etc. Why should they doubt it, he/she told them so. And besides, the Instructors equipment tells it all. Like a stripped down Christmas tree, dangling weathered gauges with an empty computer holster, clips, rings, suicide hooks (they don’t know that yet) for a goody bag and tools, scratched up mangled fins, and a weight belt that could sink a battle ship. They look at their Instructor move through water. Diving must not be very difficult to learn, they think to themselves. As long as there is a bottom near by, and the surface is not too far away, it’s easy.

Several pool sessions later the students are still bouncing off the bottom, and popping up to the surface, just like their Instructor. To turn around underwater, or to settle down on the bottom, they use their flaring arms to bring themselves under control. Although they already own a mask, snorkel and fins, further purchasing of equipment at this time is out of the question. This sport is not as effortless as they were promised and originally perceived.

Open water training dives are not much better. Instructor shows up on site with double eighties, forty cubic foot pony, up line, dry suit or a wet suit looking like it went through a combat zone. At the end of the training dive in a cold quarry, students and their Instructor exit water while huffing and puffing. As the Instructor is praising their performance, he/she is looking around counting heads and silently reciting a prayer.

It must be really tiring to blow bubbles for a while, why else would they be so tired? Or are they so exhausted because their fin kicking is totally ineffective, and buoyancy control nonexistent? Sure, they know how to establish neutral buoyancy. All they have to do is just put more air in the buoyancy compensator, but that's a far cry from having any kind of buoyancy control. At this point they are still not very good candidates to spend several thousands of dollars for underwater photo equipment. Ha! They have enough to do with their hands just to maintain their underwater stability. Will they ever be ready?

The Instructor's personal appearance, condition and set up of equipment, performance of skills during demonstration, and ease of movement in the water is the most powerful teaching aid the students will ever see. No wonder that some students are seriously considering of becoming a Diving Instructor themselves. There is nothing wrong with that ambition. An Instructor should promote continued education and eventually guiding toward leadership courses. The problem is, that by the third session into the basic course students honestly think they are as good as their instructor. The sad part is, that sometimes they are. They did not see anything from their Instructor they can't do themselves half way through the basic course. Continued education and advanced courses! What for? What possibly can this Instructor teach them that they don't already know?

A good Instructor is always in training on improvement of his/her image to represent the most ultimately positive role model for the students. Because this might be the most important visual teaching aid an Instructor has to offer.

Instructors must continually reevaluate their own diving ability, and always work on the improvement of personal diving skills and underwater comfort. Dive shop owners in their best business interest should encourage their staff in continued retraining and self improvement.

The simple act of teaching same skills over and over again is not enough. There is always another plateau of skill level to reach for, and those that have no inspiration to become the best, will never be the best. Just like astronauts who are continually training to be able to perform efficiently complex tasks in a weightless environment, Instructors also should continually strive to achieve perfect underwater controlled

balance and effortless mobility with graceful elegance. Just to saddle down on the bottom and taking off a mask, putting it back on and clearing it is a basic elementary skill. But hovering ten inches off the bottom in a yoga position, and then performing the same mask skill without moving an inch up or down while breathing normally on scuba, that does require some practice and fine tuned buoyancy control. Or swimming horizontally just beneath the surface, with an arm stretched out and letting the fingers do the walking along the surface without breaking contact, that also takes a little bit of work, and lot's of buoyancy control. Another skill that Instructors can practice to improve their skin diving breath holding ability, is to skin dive to the bottom of the pool with an empty aluminum soda can and blowing little puffs of air into it, or venting it as needed to make the can hover neutrally buoyant. After mastering that trick, the skill of skin diving ditch and don should be easily accomplished on a level of proficiency that can be expected from an Instructor or an Instructor Candidate. Are skills on such level of excellence necessary for an Instructor to be able to perform? Absolutely, why do we have our students perform equipment removal on the bottom, and other skills which they are not likely to ever utilize during normal sport diving activities? Obviously the reason is that it will enable them to handle a stressful situation if they are comfortable with multi task skills, and we can also expect that clearing a mask when needed would be a cinch, not a stressful situation. An Instructor having such level of control would have no problem demonstrating to the students a simple mask clearing skill on an inspiring level. Students watching the Instructor demonstrating any skill with such ease and comfort will not be intimidated when their turn comes to do the same.

What is it that we expect from our students when we hand them the "C" card? The answer is crystal clear. A safe knowledgeable diver comfortable with basic diving skills, having good buoyancy control, efficient underwater trim, neat and well maintained equipment with no dangling gauges, and most of all, having the responsibility and awareness that learning has just begun. To accomplish these goals Instructors themselves must recognize the need for continued education and improvement of personal diving skills to be able to emanate a representative role model to the divers they train.

There is more to selling the sport then just signing up a new student to an upcoming scuba class. The final report card of a job well done is how often the new certified diver visits the dive shop after the course. Because a well trained and comfortable diver will remain an active diver, and some eventually will become quality Instructors themselves to start the cycle all over again.