

My Teacher is an App



In an interesting article in the Wall Street Journal on November 12th of this year ("My Teacher is an App"), the movement toward on line education was discussed--both its pros and cons. Let's look at this trend from a TRIZ perspective.

The first two steps in the TRIZ algorithm are to define the Ideal Final Result ("the function of the teacher is performed without his/her existence") using the resources we already have. In this case this is accomplished with electronic on line courses, iPads, and other services and devices. Note here that these are resources that did not exist several years ago and points out the need to constantly revisit the list of resources that we think are available.

In some states, it is now mandated that students take at least one on line course. California has found a key advantage in using this approach in the ability of computer based teaching to automatically adjust to a student's learning level as the material is taught--something a personal teacher would like to do but in reality can't for a large group (TRIZ line of evolution: Dynamism). The curricula can also be adjusted to the student's capabilities in various courses. Another interesting case is one where parents hesitated to enroll their son in on line education because they felt that the level of education was below his "level", but changed their mind when they saw the plusses of his capability to teach and help others on line. Learning how to teach others improves our ability to educate ourselves

But all is not rosy. In some states, standardized test scores have fallen. Teachers point out the lack of learning in a group setting and students not learning how to relate to others socially. The ability of a student to interact with an instructor can back up to the point where weeks of waiting time becomes the norm. Despite these problems, there is no question that the "digitization" of education, as it is described by former governor Jeb Bush of Florida, will continue as there are huge savings involved. In Georgia a traditional classroom student involves an expense of \$7700 vs. \$3200 for an on line student.

If we put on our TRIZ hats and look at the plusses and minuses of digitized education and pull out our contradiction table, we can map this contradiction as wanting to improve "amount of information" and seeing "loss of substance", "function efficiency", "productivity", and "loss of information" decrease. When we look at the inventive principles suggested at these plus and minus intersections, we see some repeated suggested ideas:

1. Nested doll---Embedding learning modules inside larger modules as a function of the student's need and capabilities. Embed personal contact learning in the on line learning experience.
2. Taking out--eliminating material based on a student's demonstrated capabilities as measure by on line tests.
3. Preliminary action--Have an in person instructor better prepare the student for the on line learning environment. Pre-program the on line learning for the known level of capability of the student.
4. Periodic action--"surprise" the student with on line pop quizzes to maintain interest.
5. "Other Way Around"--the student teaches others. The student teaches the teacher.

TRIZ is traditionally a technical problem solving tool, but as we have pointed out before, its principles are just as applicable in "soft" organizational and management problem solving. Try it out the next time YOU have a soft contradiction you need to deal with.

Next public TRIZ classes are in Houston and Atlanta in March and May of 2012:
<http://www.asme.org/products/courses/triz--the-theory-of-inventive-problem-solving>