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REVIEW ARTICLE

Ten Deadly Sins of Education

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ABSTRACT

Education is necessary but 'schools' (as we know them) are not. How much of what we formally learn is ever useful in real life? Some studies show that it's only between 8 and 12%. The article tries to analyze the challenges and issues facing contemporary education. What are the 'deadly sins': The existing educational system is not very useful as far as the quality of its outcome is concerned; it is not flexible in embracing the Wiki world and high technology; education is slow in moving from bureaucracy toward entrepreneurship and creativity; separation between learning and working should be abandoned; instead of cramming, the students should be stimulated to analyze, reason, research, inquire and 'think with their own head'; learning is important, but so is unlearning; teachers must be able to teach the rational stuff in a cool and inspirational way; the students should be trained for attitude, not just knowledge and skills; education must re-establish the lost connection between art and science, wisdom and practicality; education should go lower on theory, and higher on applicability. If we want to create a better educational system, changing culture is by far more important than changing curricula.

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EDUCATION IS NECESSARY BUT 'SCHOOLS' (AS WE KNOW THEM) ARE NOT

How much of what we have learned is ever useful in real life? Seven years ago, while I was serving as the Vice Dean for international co-operation, my university performed a research[1] involving a portion of nearly 50,000 alumni of the school for economics and business. The reply to the above question was: between 8 and 12%. Simply stated, only 10% of what our students have learned during their college education was ever useful in the real life. And my school is not an exception; similar results have been obtained by studies in different countries. This fact is one of the starting points in describing the deadly sins of contemporary educational system. The schools as we know them are lacking real output quality. Imagine any other production system creating only 10% of useful output. Would it ever been considered good and satisfactory?

My second point is based on Albert Einstein's wisdom stating that we cannot solve any problem by the same thinking that created it. Thus, we should change the way we see education as a system. In other words, we must redefine the concept of learning.

What seem to be the key challenges? The first one has just been described above: the existing educational system is not very useful as far as the quality of its outcome is concerned. The second challenge is associated with the changing role of technology and widespread knowledge. Who do you trust more, Wikipedia or Encyclopedia Britannica? Which one do you use more often in your research and everyday life? How often do schools use open courseware and apply mobile phones and tablets to everyday learning situations? We are not ready for the Wiki world and high technology; most educational institutions are not willing to face the issues involved. The third challenge has to do with growing regulation, standards, accreditation procedures and other bureaucratic issues blurring the real nature and goals of education. The schools and universities need a shift from bureaucracy toward entrepreneurship and creativity. The next challenge has to do with growing number of years people study and learn, being separated from everyday practice and isolated from work and real life. Instead of learning by studying, we must go back to the traditional idea of learning by doing, experiencing, creating. Unnatural separation between learning and working should be abandoned. The 'students' of the future should work and study throughout their lifetime, and not, as it is now often the case, spend decades 'studying,' and then, after earning a diploma (in James Bond's terms the license to kill), move into the practical world and spend the rest of their life 'working'. The existing educational system on all levels relies on rigid structure of curricula, puts emphasis on memorizing and insists on discipline. The fifth challenge has to do with the need to get rid of the 'parrot syndrome: Instead of cramming, following the teacher and obeying the administrative rules, the students should be stimulated to analyze, reason, research, inquire and 'think with their own head'. The sixth challenge has to do with the idea that learning is important, but so is unlearning. Getting rid of the ideas, concepts, theories and approaches that are no longer valid is equally important as learning the new stuff. We must be able to teach the students of tomorrow haw to learn and how to unlearn. The seventh challenge lies in the fact that we live in an environment based on rationality, but that very rational set of truths, ideas, beliefs and values seems to be failing us. The rational, boring and conservative teaching style is no longer appropriate. The professors of the future will have to be entertainers, able to teach the rational stuff in a cool and inspirational way. The following

challenge is based on the prevailing human resource management idea that the good educational system provides the students with knowledge, skills and, above all integrity and values. Simply stated, we must train for attitude, not just knowledge and skills. Challenge number nine is an outcome of administrative quest to put every educational content into a properly separated 'box' and isolate it from other 'boxes'. We must reintegrate the separated approaches. Metaphorically speaking, education systems must re-embrace the real transdisciplinarity, the notion that everything is both art and science, wisdom and pragma. Education and training aimed at producing insensitive and professional 'fachidiots' must give way to multidisciplinary concepts aimed at producing a good, competent person with empathy and social responsibility. Finally, there is a tendency in education to be too much 'scientific', which most often means a lack of applicability. To paraphrase Albert Einstein, there is nothing more practical than good theory. Too many obsolete and old fashioned theories are still central parts of curricula. The educational systems of the future will be more successful if they manage to go low on (irrelevant) theory, and high on useful practice.

So these are our challenges. As you can see, they are mostly a matter of principles and concepts. Therefore, my last introductory comment is simple: If we want to create a better educational system in the future, changing culture is by far more important than changing curricula.

CAN WE SEE MORE CLEARLY?

Many years ago, as a graduate student of an American University, while cramming for a tough exam and reading a scientific journal, I came across a poem. It was titled 'In Broken Images'[2] and appeared as follows:

He is quick, thinking in clear images;
I am slow, thinking in broken images.
He becomes dull, trusting to his clear images;
I become sharp, mistrusting my broken images.
Trusting his images, he assumes their relevance;
Mistrusting my images, I question their relevance.
Assuming their relevance, he assumes the fact;
Questioning their relevance, I question the fact.
When the fact fails him, he questions his senses;
When the fact fails me, I approve my senses.
He continues quick and dull in his clear images;
I continue slow and sharp in my broken images.
He in a new confusion of his understanding;
I in a new understanding of my confusion.

Blinded by the exactness of science and concerned about how much I still had to learn, I found myself angrily contemplating why anybody would misuse the space in a scientific journal to publish a poem. The author could have better confronted us with facts and findings of his own research instead, thus teaching us something. Why a poem?

The unconscious is, luckily enough, always more clever than the conscious. And, over the years, despite a strong internal resistance, the poem remained in my heart and mind, even against my will. It took many years and many experiences to make me appreciate the complexity of life and the limitations of all the clear images I possessed. My growing number of broken images helped me to learn how confusing any problem solving situation was, and how only a few real life issues could be resolved by recipes or hard knowledge.

As I was writing this article, the poem suddenly crossed my mind. Unlike the first time, I recognized it was an old friend, a lighthouse guiding internal itineraries, a precious jewel to enrich my personal intellectual treasure box.

In the rest of this article I plan to do just that: searching for 'deadly sins' means questioning the clear images about education.

QUESTIONING THE CLEAR IMAGES

Thomas Edison used to say that if you cannot solve a problem, you must change it. You must redefine it; see it differently and maybe than you will be able to solve it. However, we are accustomed, educated, mentally programmed and trained to look at problems pretty much the way everybody else does, based on prevailing paradigms.

We enjoy seeing things clearly. We like our (educational) world to be structured, organized, rational and predictable. The reality, on the other hand, seems to be quite different. More often than not, our clear images fail us and we end up being confused.

Sin No 1. Education is too much Bureaucracy too Little Innovation

Look at the following Table 1.[3] It summarizes the characteristics of bureaucratic and innovative approach when dealing with key facets of any (educational) system. I don't intent to go into details. Let's just ask ourselves a simple question: What set of ideas more appropriately describes the present educational system? For example, is it aimed at development or status quo? Is it quick, offensive or slow and defensive when dealing with change? Are the new ideas easily accepted or rejected? From organizational point of view, is it rigid and stable or flexible and dynamic? If you agree that, as far as the majority of issues is concerned, it is characterized by the bureaucratic approach, I have another question: What set of ideas should be associated with the educational system better tailored to the needs of

Table 1: Bureaucratic *vs* innovative approach

Issue	*Bureaucratic approach*	*Innovative approach*
Goal	Status quo	Development
Changes	Slow, defensive	Quick, offensive
Approach	Follow rules	Change rules
Objectives	Follow procedure	Make things happen
Decision making	Outvoting	Consensus
New ideas	Rejected	Accepted
Key resource	Money	Knowledge
Organization	Rigid and stable	Flexible and dynamic
Leadership	Autocratic	Democratic
Authority	Formal hierarchy	Participation and competence
Problem solving	Empirical	Innovative
Selection	Formal criteria	Skills and attitude
Training focus	Specialization	Multidisciplinarity
Ideal student	Obedient	Independent
Control	Ex-post and imposed	Anticipative self-control

tomorrow? If you agree that it is the innovative approach, I rest my case.

Sin No. 2. Education is Aimed at 'Producing' Administrators, not Change Masters

The goal of most educational and training activities is to teach administrative procedures, rules and well structured approaches that can be repeated and replicated. The very nature of education is to 'produce' administrators (followers, obedient executors) and not change masters (leaders or innovators).

What is the difference and why is it important? The administrators in any industry, trade, field or activity will control, analyze, make plans, communicate and co-ordinate. On the other hand, the leaders[4] will set a vision, encourage and motivate, manage change and inspire. Leadership is, above all, a capability to influence behavior of people, including their value systems. As an outcome, organizational goals are attained with will, dedication and enthusiasm. Leadership is about commitment, and commitment is about values. Putting emphasis on educating administrators is like building a huge brake to prevent change from happening.

Leaders create visions, and make people follow them, while administrators plan, organize and supervise their teams. Administrators are susceptible to rules and regulations, based on experience. They develop stable procedures and build strong organizational structures. Unlike leaders who want to experiment, innovate, explore and reinvent. Leaders expect initiative and make people fight for a vision while administrators distribute tasks and expect obedience. Imposed control is the key to success in administrators mind. On the other hand a leader knows that self-control is the best control, and self-motivation is the best motivation. Leaders build innovative strategies, while administrators pedantically plan activities for attaining goals. Leaders inspire the collaborators to participate in a dream-come-true experience, while administrators deal with trouble shooting.

Administrators are risk avoiders who rarely provoke or fight. On the other hand, leaders are susceptible to risk and infrequently engage in conflicts. Administrators must use power to get what they want, while leaders receive co-operation without even asking for it. It is mostly because our inner values drive our behavior much stronger than any imposed rules and regulations.

Administrator is a perfect response to the challenges of a stable system. On the other hand, leaders are needed to alter the course, to innovate and take chances. Administrators keep the system running while leaders save it from failing in times of transition. Leaders are explorers, while administrators take paths already established. Since, most present day systems and organizations are fully immersed in change, we need leaders, promoters of the new set of values instead of administrators, fighters for the status quo. The goal of education and training is to provide us with better output.

Sin No. 3. We are not Successful in Teaching Creativity and Innovation

Creativity is defined as ability to solve complex problems in an original way. Also it is an ability to produce ideas. On the other hand, innovation can be described as applied creativity or successful implementation of ideas. What do we do wrong in problem solving and education? We serve solutions, approaches and concepts to students to memorize, and not to challenge and reinvent. Creativity means freedom and lack of creativity equals to lack of freedom. Rigid and structured educational systems do not encourage exceptions, rule breaking, free choice and open mind. Instead, they are based on discipline, order, rules and procedures. We need to change that on all levels of education and training.

Sin No. 4. We Teach Rational Intelligence, not Emotional and Social Skills

Building professional intelligence is the key goal of any education and training. It is aimed at giving students professional degrees (professional competence, knowledge and skills of a trade). In real life, success and results are not so much correlated with professionalism as they are correlated with personality traits, social competences and emotional intelligence.[5] What is emotional intelligence? It is the capacity for recognizing our own feelings and those of others, for motivating ourselves and for managing emotions well in ourselves and in our relationships. It describes abilities distinct from, but complementary to, academic intelligence, the cognitive capacities measured by professional standards. Basic emotional and social competences are self-awareness (confidence), self-regulation (control), (self)-motivation, empathy, various social skills (communication, networking…) and optimism. Putting too much emphasis on 'what' we usually neglect 'how'; our educational systems are much less successful in teaching emotional intelligence, personal competence and social skills.

In his book 'The Fifth Discipline,' Peter Senge[6] describes the following concepts associated with his 'learning organization':

1. *Application of systems thinking*–holistic approach to problem solving, based on co-operation and team work;
2. *Will to develop personal skills*–a process of mastering the knowledge and spiritual values of the new paradigm;
3. *New mental models*–application of new ways of thinking where self-oriented approach and conflict are being substituted by co-operation and orientation toward others;
4. *Common vision*–future oriented, vision seeking leadership is the basis for building collective spirit and development of any business system;
5. *Team learning*–work in a group is built on consensus and modern leadership rather than on hierarchy or formal authority.

Sin No. 5. We Build Professionalism and not Passion and Initiative

Most educational systems are organized in such a way to educate and train 'the perfect expert, worker or employee'. What is the perfect employee? Traditionally, it is a person with professional attitude, equipped with knowledge and skills of the trade, proven by a certificate, diploma or degree. Such a person is expected to exhibit diligence and effort, show obedience (we don't want troublemakers), and if these standards are met, we expect from the perfect employee initiative, creativity and passion.

As we have already mentioned, the new approach to education and training of 'professionals' should put much more emphasis on emotional attitude. The best employees will always be the people with passion, able to work long hours because they enjoy what they do. No wonder the most successful entrepreneurs in computer industry have, as a rule, been college dropouts like Steven Jobs. They were chasing a dream, and not a paper certificate. Passionate people will be inquisitive and resourceful; they will make up for a lack of formal education, degrees, certificates or diplomas. The knowledge on paper is very often worth next to nothing but the bureaucrats are always impressed by formal and not by the essential attributes of employees, the ones that produce real results.

Passion, creativity and initiative are the key sources of success, great work and important accomplishments. Formal education (professional intelligence), diligence and obedience should be put low on the list of preferred traits and characteristics of any innovative knowledge worker of the future.

Sin No. 6. We Teach Learning but not Unlearning

There is a story about Nanin, Japanese teacher of Zen. One day a university professor from the West, who was eager to learn about this school of Buddhism, paid him a visit. The teacher, according to the old tradition, personally served tea to his guest. But, even after the guest's cup was full, he continued to pour. Unable to watch the tea flowing all over the table and dripping on the floor, the professor decided to interrupt him by saying: 'The cup is full, you shouldn't pour any more.' 'Like this tea cup', Nanin answered, 'so are you full of ideas and prejudices. I cannot teach you Zen if you are not ready to empty your cup.'[7]

The story has a point: One must empty one's cup! It is equally important to learn and to unlearn. Most of the things we know may no longer be right, correct and applicable to changed situations. The values we believe in may not be the right ones. Our experience and cases on which we base our action may no longer hold true. Our attitudes may be the very source of trouble and failure. That's why one of the challenges facing the actual education system is its inability to teach unlearning. Because, in times of rapid technological change the problem is how to get new, innovative thoughts into our mind, but also how to get the old ones out!

Sin No. 7. Education is Rational and Serious, it should be More Cool

If you ask majority of pupils and students about it, they will tell you that the present education and training experience

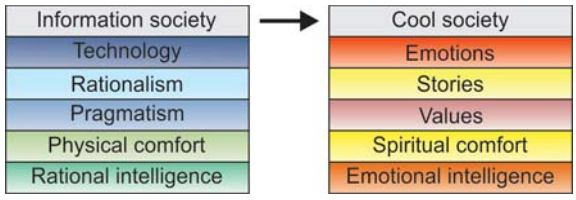

Fig. 1: From information society toward a cool society

is boring. As already mentioned, the professors and teachers of the future will have to be entertainers, able to teach the rational stuff in a cool and inspirational way. Every education and training experience has its content, and its form. As far as the content is concerned, we live in the world dominated by technology, rationalism, pragmatism; we seek for physical comfort and rely on rational intelligence. On the other hand, there is a world of form, based on emotions, stories and values. In this world we seek for spiritual comfort and our behavior is guided by emotional intelligence, as pointed out by the following picture (Fig. 1).

The education and training have traditionally been too much 'rational' and that very fact made them boring, unattractive and tedious. A shift in paradigm is needed, if we want to have more successful system of transferring knowledge, skills and attitudes. In a cool world we must require that education and training also become more cool!

Sin No. 8. Education is based on Fear; it should be based on Love

The corporation as we know it, which is now 120 years old, is not likely to survive the next 25 years. It will survive legally and financially, but not structurally and economically. These are the words of Peter Drucker some 10 years ago. The management guru perceived corporations, government bureaucracies and other institutions we know (including schools and universities) as old-fashioned organizations based on fear. They have developed ill-functioning concepts like hierarchies, cubicles, standard operating procedures (SOPs). In such hierarchies the bosses and teams are appointed by senior management, the goal attainment is based on command and control. Working within such environment causes alienation and depression.

The point is that we need new types of 'corporations'. Instead of organizations based on fear, we should build organizations based on love. Instead of hierarchies, cubicles, SOPs we need self-organized teams, based on friendship, partnership, common vision and mutually agreed values. Instead of bosses and teams appointed by senior management, we need a system in which the leader is a person who calls the meeting and people show up, and teams are self-selected. Instead of goal attainment being based on command and control, we need organizational environment in which everybody is responsible, and all control is based on self-control.

Traditional corporations (as well as universities and schools) have been developed in times of hard work, today most employees are knowledge workers. Their source of motivation is not imposed control and fear but love for what they do, feeling of accomplishment and self-fulfillment! New organizations need new educational value system based on passion, enthusiasm, appetite for life, engagement, commitment, great causes, determination to make a difference. The students and workers of the future will have to be trained for shared adventures, bizarre failures and appetite for change. Otherwise, as stressed by Tom Peters,[8] why bother?

Let's take a look at the values creating a framework for 'organizational' side of education of the future:

- Endless creativity
- Full adaptability
- Inspirational environment
  - Organization based on love
  - Ideas compete on equal footing
  - Tasks are selected, not administered
  - Authority is not based on position
  - Hierarchies are natural, not imposed
  - Teams are self-organized
  - Leaders serve
  - Resources are attracted and not budgeted…

Where can one find such a culture? It already exists for couple of decades on the internet. Imagine that some hierarchy decided to build the www based on long term plan, clearly defined budget, strict and rigid rules… No way! It emerged, step-by-step, as a self-organized endeavor based on endless creativity, full adaptability, creating a lovable and inspirational environment in which ideas compete on equal footing, tasks are selected and not administered, teams are self-organized and authority is not based on position but on the quality of an idea and its execution. Isn't it all equally true for education and training?

Traditional schools and universities are rigid hierarchies, resembling corporations. We need new, internet-like environments supporting new values, creativity, innovation and change. In traditional hierarchies, for one thing, the boss is there to catch an employee in what he does wrong. We need schools and universities in which professors and teachers will be able to catch students in what they do right! Also, the education of the future will have to put more emphasis on win-win attitude. Imagine a conflict between two people. In the present culture, one will end up as a winner, and the other as a loser. We must train for the win-win attitude. Remember Steven Covey and his

simple idea. Whenever you disagree on something, stop and try to resolve the situation with a help of simple question: are you ready to give up on your proposal, and I'll give up on mine, in order to search for a proposal which is better than both starting ones?

Sin No. 9. Learning is Separated from Working, Art from Science, Theory from Practice

As already mentioned, one of the problems is a growing number of years people study and learn, being separated from everyday practice and isolated from work and real life. Instead of learning by studying, we must go back to the traditional idea of learning by doing, experiencing, creating. We keep talking about lifelong learning, but in practice the concept is far from being fully operational. First of all, a separation between learning and working is not natural. The 'students' of the future should work and study throughout their lifetime, and not, as it is now often the case, spend decades 'studying,' and then, after earning a diploma, move into the practical world and spend the rest of their life 'working'. Also, in education and training environment there has been an extensive administrative quest to put every educational content into a properly separated 'box' and isolate it from other 'boxes'. The new paradigm requires that we reintegrate the separated approaches. Metaphorically speaking, education systems must re-embrace the real transdisciplinarity, the notion that everything is both art and science, theory and practice, wisdom and pragma. Education and training aimed at producing insensitive and professional 'fachidiots' must give way to multidisciplinary concepts aimed at producing a good, competent person with empathy and social responsibility.

Sin No. 10. Education is not Building Integrity and Ethic Behavior

One of the important features of the educational system of the future must be the search for building integrity. Imagine a world in which all the students, teachers, employees, bosses and workers are educated and trained to tell the truth, keep the promise, take responsibility, admit the mistakes, abide by the rules, win the right way, enjoy life with humor, joy and humility. If you think that's impossible, remember that any crazy idea was considered totally insane until it managed to win.

Sin No. 11. We are not Really Searching for the New Paradigm

Even though the educational system seems to be in deep conceptual trouble, there is no paradigmatic shift in sight. Nothing has conceptually changed in the USA, the leading world power since Ronald Reagan who, 3 years into his first term as President, appointed a commission that wrote a remarkably critical analysis of public education. Called 'A Nation at Risk', this document charged that the US risked losing the economic competition among nations due to a 'rising tide of (educational) mediocrity that threatens our very future as a Nation and a people'.[9] In 2009, EU has come up with a new framework called 'Education and Training 2020' (ET 2020).[10] The document points out four strategic objectives:

1. *Making lifelong learning and mobility a reality*: progress is needed in the implementation of lifelong learning strategies;
2. *Improving the quality and efficiency of education and training*: all levels of education and training need to be made more attractive and efficient;
3. *Promoting equity, social cohesion and active citizenship*: education and training should enable all citizens to acquire and develop skills and competencies needed for their employability and foster further learning;
4. *Enhancing creativity and innovation, including entrepreneurship, at all levels of education and training*: the acquisition of transversal competences by all citizens should be promoted and the functioning of the knowledge triangle (education-research-innovation) should be ensured.

Except, maybe, the fourth point, this list seems to be a very broad and imprecise, and presents a rather bureaucratic way of looking into the future of EU education and training. There is no vision of real change, and there are no concepts and principles on which such a change should stand. Hence, the concluding 'sin' lies in the fact that politicians and governments are not searching for the new paradigm; instead, they are just proposing cosmetic changes of the existing one.

CONCLUSION

Is Educational Paradigm Shift just Another Monkey's Business?

Can the old educational bottles any longer hold the new wine? Human systems, organizations, institutions and individuals, they are all changing within the new paradigm's norms and values. The point is that we cannot see better, if we keep looking in the same direction. The education of the future will have to deal more successfully with 'cultural dilemmas' mentioned in this article. What does a new paradigm really mean?

Imagine the following situation: Put five monkeys in a cage. Hang a bunch of bananas in the middle and put a

ladder nearby. Soon a monkey will climb the ladder, trying to get some bananas. As soon as he touches the ladder, sprinkle ice-cold water over other monkeys. Another monkey will soon go for the ladder just to find out that all the monkeys will get ice-cold water all over their heads. Now, if any monkey tries to get the ladder, other monkeys will stop him. Remove one monkey from the cage and replace him with a newcomer. Seeing the bananas, he will reach for the ladder, only to find out that he would get beaten by all other monkeys. Remove another monkey from the cage and replace him with a new one. Trying to reach for the ladder, he will get beaten by all, including the former newcomer. Repeat the procedure until the initial five being removed from the cage. Regardless of the fact that neither of the monkeys has ever been sprinkled by ice-cold water, no ape will ever try to get the bananas because, if he does, he will immediately be stopped by all others. Why? They have learned that this is the way things are done here. And who are they to question that? The story perfectly describes people accepting rules and values of an existing organizational culture. They are living within a given paradigm and are not aware of its limitations. Don't we all, to certain extent, resemble these monkeys, trapped within a cage of the old educational paradigm?

If you ask students, teachers, professors, pupils, even administrators, they will all express their dis-satisfaction with the present education and training. If you propose a change, they will all be for it. But each group, or individual, will look at the potential paradigm shift with the same attitude: I am all for change, but don't change me, change everybody else!

Education and training are at the crossroads, as they have always been. The existing school and university concepts are both, old-fashioned renaissance ideas, in desperate search of a paradigm shift. The ideas presented in this article are just a few comments aimed at 'questioning the clear images'. I suppose it is really hard to do it, otherwise it would have already been done. Remember, I am also an old university professor. As most of my colleagues, I was educated and trained many decades ago, and at present I teach my students who will live and work during the next several decades. And, as Tom Peters pointed out in one of his books, '…if you want a paradigm shift, it is not enough for the old professors to retire; they must die!'

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