

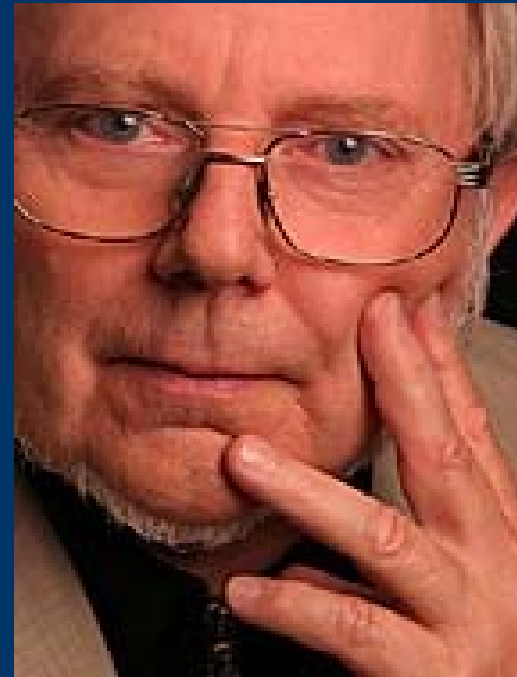
Is the Web turning us into dummies?

Hermann Maurer, Graz University of Technology, Austria,
and Member of the Board of Academia Europaea
based on the ED-MEDIA paper with Klaus Tochtermann

Special presentation for
ED-MEDIA 2013,
Victoria, Canada
June 26, 2013



THE ACADEMY
OF EUROPE



Is technology ambivalent?

Yes? (The hammer argument)

No! (The needle/ weapons of mass destruction argument)

There are many shades in between: Where are internet, web, telecommunication? Mainly good or mainly bad or ...?

Many of us convinced: Above technologies can be used to benefit mankind.

Hundred publications/ books say so. Yet hundreds say the opposite and should make us think.

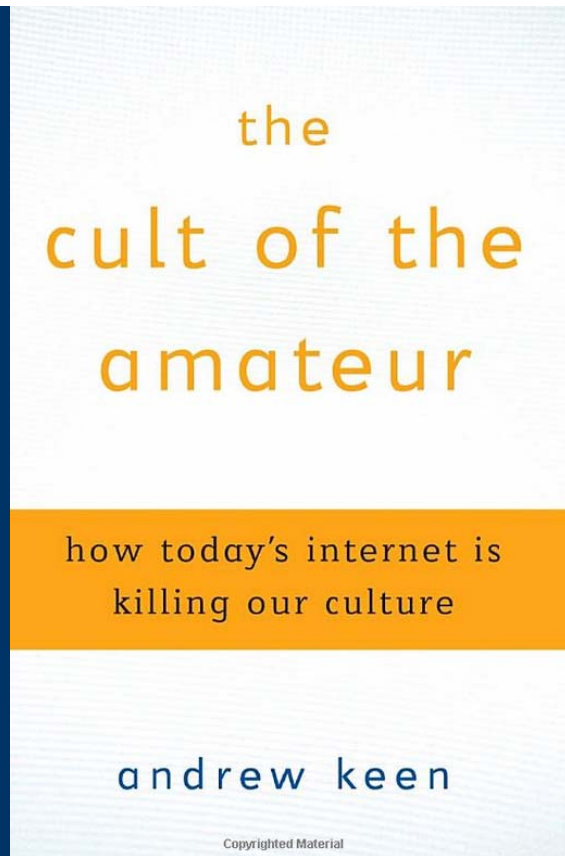


(Published in 2007)

© H. Maurer

“Looking at schools and universities, it is difficult to pinpoint when education, teaching and learning started to lose purpose, aspiration and function.

As the internet offers a glut of information, bored surfers fill their cursors and minds with irrelevancies, losing the capacity to sift, discard and judge”



“How blogs, MySpace, YouTube, and the rest of today's user-generated media are destroying our economy, our culture, and our values...”

(First edition 2007)

“Instead of creating masterpieces million of ‘monkeys’ are creating an endless digital forest of mediocrity. They publish everything from uninformed political commentary, to unseemly home videos, to embarrassingly amateurish music, to unreadable poems, reviews, essays and novels”




by Stephan Weber
(First edition 2008)

(Translation)

How net-plagiarsims endangers
education and knowledge

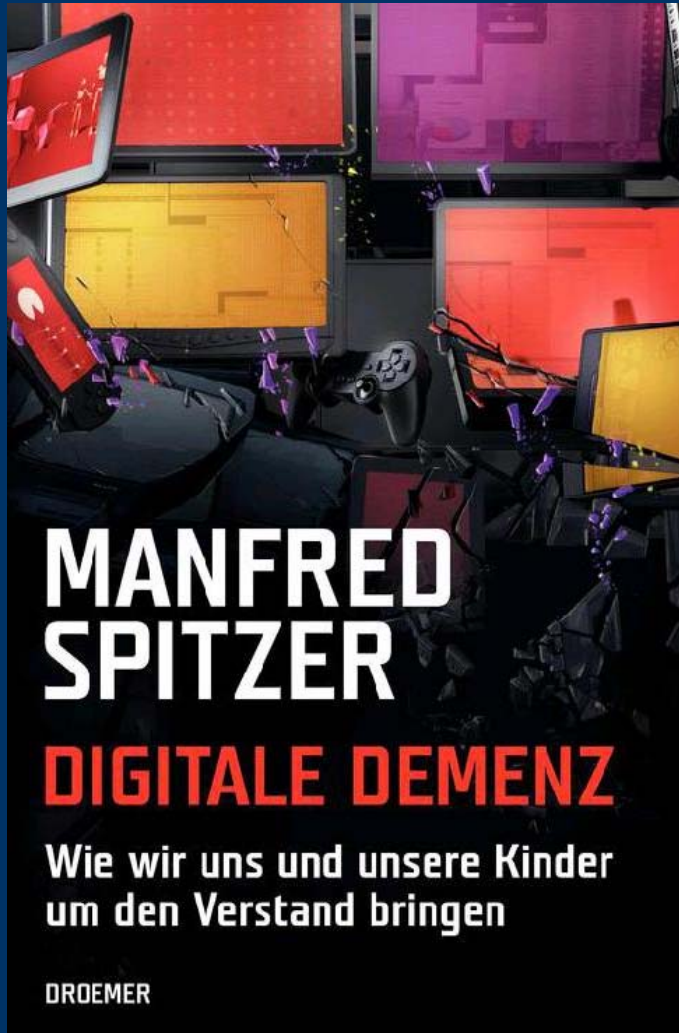
„The real danger is not that
plagiarism is used fraudulently
for personal gain, but that the
copy/paste mentality destroys
thinking.“

THE
DUMBEST

GENERATION

by Mark Bauerlein
(First Edition 2008)

How the Digital Age
Stupefies Young Americans
and Jeopardizes Our Future
(Or, Don't Trust Anyone
Under 30)

Communication technology
creates a barrier between
generations. Young people
Have only one main aim:
to be „in“.



(Published in 2012)

(Translated)

Digital dementia: Making us and our children stupid.

„We need computers in schools to teach a subject like biology as much as we need bicycles to teach children how to swim“

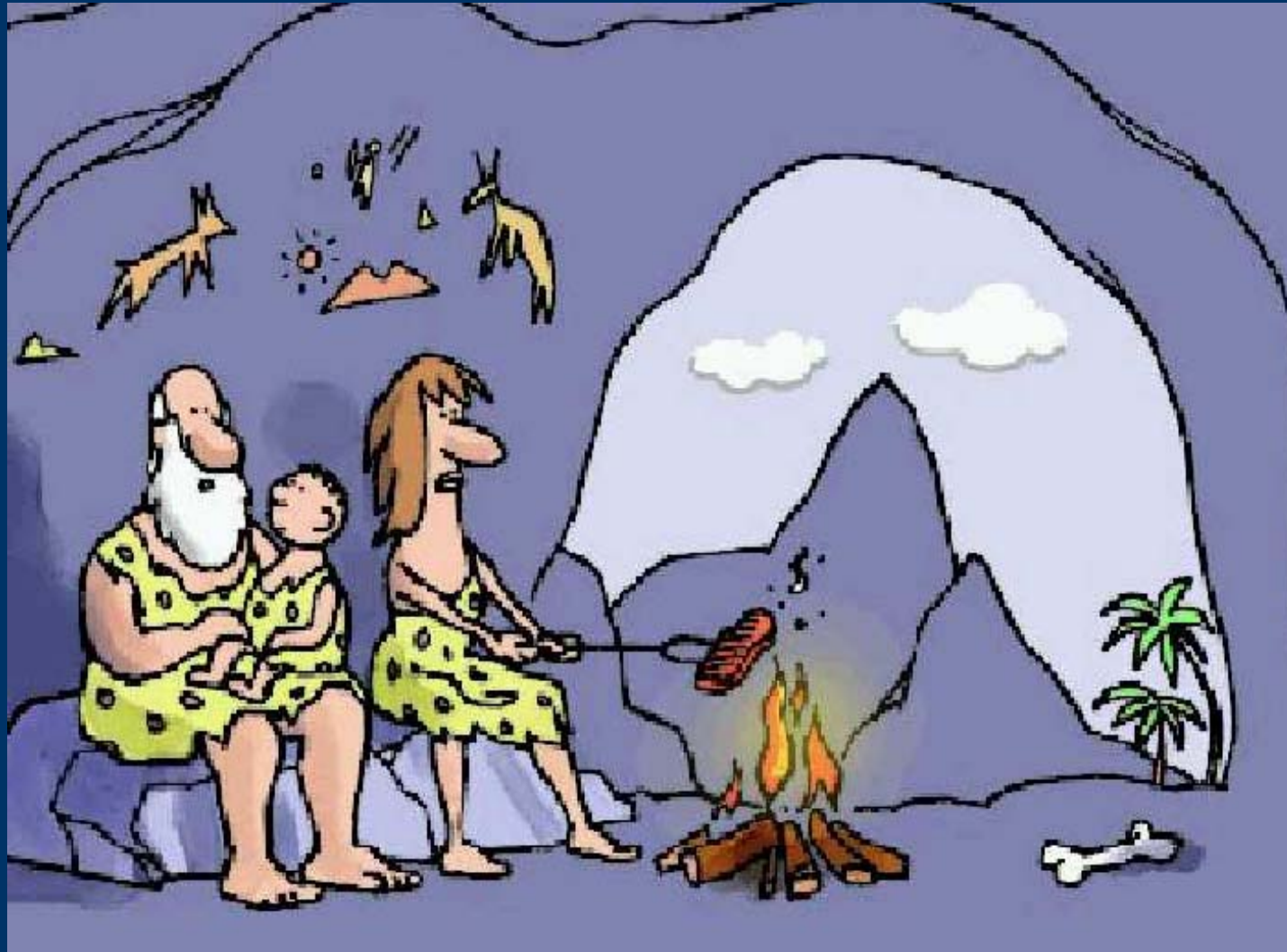
Dangers often listed

Too much dependency on technology is dangerous
Big brother is here/ privacy is gone
The market/industry tells us what we have to like
Different people live in different worlds
Violent computer games and pornography are threats
The internet is threatening some types of business
The „wisdom of crowds“ can be dangerous
Too much distractions prevent necessary concentration
Effort to keep connected to „friends“ prevents
productive work
The internet needs a forget component
Media brainwash us
Copy/paste is used fraudulently
Copy/paste ruins reading, writing and thinking
capability
Copy/paste often uses unreliable material
Memorizing ability disappears, but thinking
without facts is impossible
The need to be „in“ destroys connection between
young and old
E-Learning has never really worked
Learning without sweat is impossible

Some of the
most often
quoted dangers
of modern
ICT technology

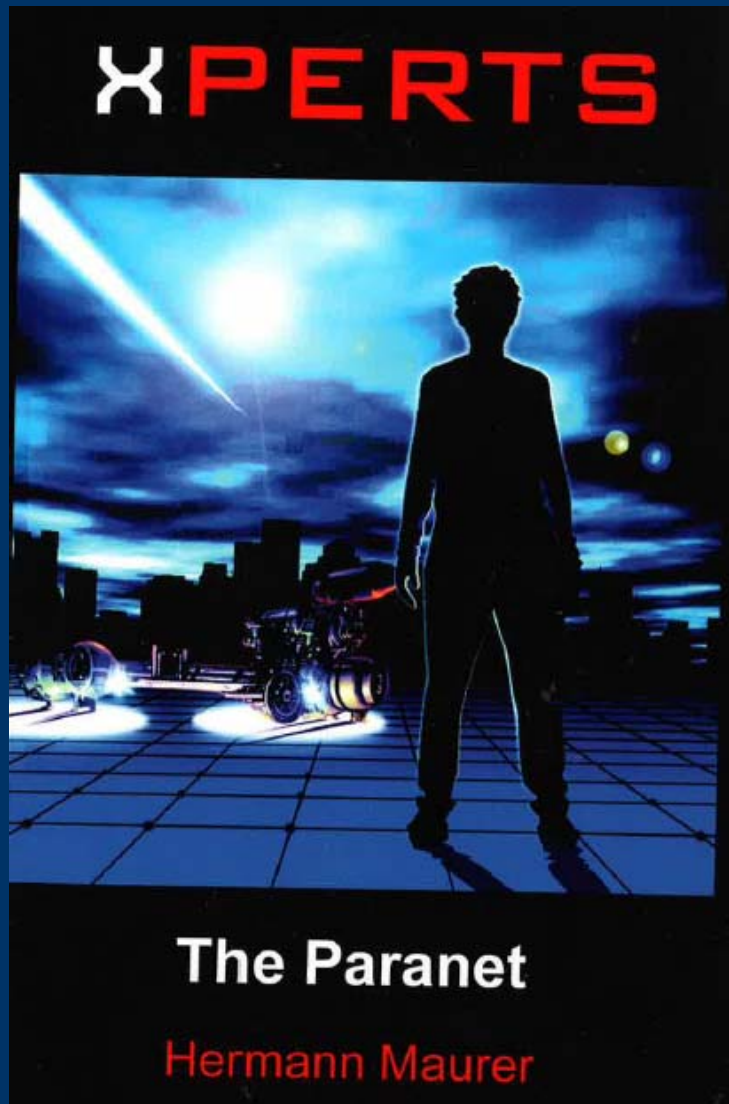
Don't read the
list- I will discuss
the important
issues in my talk

Too much dependency on technology is dangerous



Father says: „... and then one day the internet collapsed...“

Danger is real, as I have shown in one of my Science Fiction novels



Lessons to learn from this:

- make sure systems have enough redundancy
- increase regionalization
- avoid too much globalization

Big brother is here/ privacy is gone

Credit and bonus cards, tracking by cell phone, RFID tags, profiling by internet servers; **who was apalled by NSA data-collection**; and visual supervision: through posts, cameras, Google street view, etc.



Google Glasses





Glasses or watches with
built in HD 30 FPS
camera, battery for 30 min,
USB cable

<http://www.dhgate.com>

© H. Maurer



X47- darpa Drohne



Flying drones for observation are starting to be in size below one inch!



However: How much privacy do we need, or how much did we have in villages 100 years ago?

Is „bye, bye to privacy“ really such a terrible thing?

The market/industry tells us what we have to like

We are not buying products that we want, but products the market wants us to buy (cameras, digital TV, new light-bulbs, bio food,...)

Different people live in different worlds

Recommender systems and profiles make sure that you only see things you are interested in ... so you live in your own personal world

Media present different views in different cultures. Yet within one culture reports on everything are similar enough to amount to brain washing.

The international airport



The city



Typical traffic circle



The hilly parts



The Outskirts, Weekend retreat for some



Residential condos





Museum of Contemporary Art



Cinema complex



Mount “ the bride”



The "Tele-cabin" ends in the Ski Resort at 3900m. It is one of the longest and most scenic in the world



You can ski until the first day of summer



Do you know the city those pictures are from?

Are violent computer games and pornography threats?

There has been much discussion about the effect of violence in computer games:

One view: Violence releases pressure/ frustration through such games in a virtual world, rather than in the real world, i.e. are actually beneficial

Other view: Violence is deforming character and is carried over into the real world.

The second view is correct (see paper)!

Concerning sex and pornography on the internet they (like much other information on TV and the Web) contribute to the „lost childhood“
(Neil Postman)

The internet is threatening some types of business:

Bookshops, travel agencies, music and video shops, newspapers; maybe by virtualization even museums, theatres, and travel; or how about paper industry?

Partially true, yet effects slower than expected (PWC 2013)

And: maybe tele-travel, tele-working, skypeing, reduction of printed material saves valuable energy and resources?

The „wisdom of crowds“ and crowdsourcing“ can be dangerous

It has given us Wikipedia and such, but wiped out traditional encyclopaedias. It is possible threatening high-quality media productions and newsmedia. (Andrew Keen)

Too many distractions prevent concentration

Cell-phones, mail, social networks, multiple simultaneous video streams, Result into increase of attention deficit syndromes!

When did **YOU** lean back for two hours the last time and think seriously about things that should concern you?

Effort to keep connected to „friends“ prevents productive work

To not “miss out on anything” is the all important motivation for most young people (except for overachievers, who go overboard another way)

Keeping track of all friends in social networks eats up much time that would be used better, otherwise

The Internet needs a forget component

It is „inhuman“ to keep the record (on e.g. Facebook) for say 30 years. Opinions may have changed, yet it might well be that the virtual person constructed over time has little similarity to real person.

At least: A person should have the right to insist on deleting information composed by that person (or dealing with that person?)

Where is the border-line between what should be available to the public, and for how long? When are you allowed to post a picture of whom?

Social networks are too recent to show the full need for some change

The need to be “in” destroys connection between young and old

One of the most important observations in Bauerlein’s book „The dumbest generation“:

There is no time any more for any kind of serious communication between e.g. parents and children: interrupts by media, particularly SMS, need to Twitter, send pictures, look at just posted new YouTube clips, etc.

This has a deep negative effect on passing knowledge from older to younger generation. Younger persons mainly „learn“ from their peers!

Copy/paste used fraudulently:

Typically, to achieve a better grade/ a diploma

What can one do about this?

Make it clear that it is not allowed and would have consequences

Find most blatant copy/paste cases using plagiarism detection tools

Clever plagiarism is very hard to detect:

- anti-plagiarism tools are available
- plagiarism detection across language borders impossible
- hence: only continuous checking of progress („study book“)
can help, see written paper

Copy/paste ruins reading, writing and thinking capability

Ample evidence that copy/paste has negative effect on reading and writing.

However, one could argue:

Maybe reading and writing as we know it is really not important.

We just did not have another technology to preserve and spread ideas in the past. Now we have:

- Rather than we reading, let the computer read to us
- Rather than we writing, use voice recognition software and let the computer write
- We can use pictograms, symbols (even animated ones) (see MIRACLE papers mentioned in printed version, or take IKEA!)
- We can use pictures, video clips, audio clips,...

Copy/paste ruins reading, writing and thinking capability

Unfortunately, using much copy/paste also reduces the capability to present ideas in one's own way, present things one has learnt from various sources in a coherent fashion.

Project supported by the Austrian ministry of science an research:



Students could choose topic for an essay. However, they were forced to examine 3- 8 sources (including printed material) and had to document findings before writing the essay. Idea: This would prevent copy and paste from one source like Wikipedia.

However, although they examined different sources, they ended up copy and pasting from them, even transcribing YouTube segments! They had lost the ability of using own creativity for writing!

Bäume

von Sebastian Pollanz 4a



aus: *Wissenssammlungen/Bildlexikon_Österreich/Orte_in_der_Steiermark/Schöneegg_bei_Pöllau/Baum*
Mit freundlicher Genehmigung der Gemeinde Schöneegg bei Pöllau

Bäume sind Pflanzen. Es sind Lebewesen, die einen verholzten Stamm haben und wo man auf dem Querschnitt die Jahresringe, die Altersangabe des Baumes, sieht. Mit jedem Jahr wächst der Baum weiter, somit bekommt er auch jedes Jahr einen Jahresring.

Bäume sind sehr wichtig für uns Menschen, weil sie auch wie alle anderen Pflanzen Sauerstoff abgeben und CO₂ aufnehmen. Wir Menschen brauchen Sauerstoff zum Überleben, deshalb ist es sehr schlecht, wenn z.B. so eine große Fläche, wie der des Regenwaldes abgeholzt wird.

Auf manchen Laubbäumen wachsen meistens Früchte, wie zum Beispiel, Äpfel, Birnen, Kirschen, Pfirsiche und Zwetschken. Nüsse wachsen auch auf Laubbäumen. Bäume haben früher die Häuser überragt und viel Schatten geworfen, aber heute sind die Gärten kleiner als früher und deshalb muss man sich kleineren Varianten zufrieden geben. Ab einer bestimmten Höhe, haben Bäume bleibende Verzweigungen, die zur Bildung einer Krone führen (Kronenbaum) oder die unverzweigten Bäume, die in einem Schopf mit meist sehr großen Blättern enden (Schopfbaum, so Baumfarne und viele Palmen). Nach Art des Sprosssystems gibt es monopodiale Bäume (z.B. die Tanne), bei denen der Hauptstamm dominant gegenüber den Seitenzweigen wächst, und sympodiale Bäume (z.B. die Linde), bei denen dagegen das Längenwachstum des Stammes durch die jeweiligen Seitenzweige fortgesetzt wird.

Nach Gestalt der Blätter unterscheidet man Laub- und Nadelbäume, nach der Lebensdauer der Blätter immergrüne und Laub abwerfende Bäume.

Die Höhe und die Lebensdauer der Bäume sind artspezifisch, die Höhe reicht von 3 bis 152 m. Eine 150-jährige Linde ist rund 25 m, eine 120-jährige Tanne etwa 50 m, ein kalifornischer Mammutbaum bis 132 m und ein Rieseneukalyptus bis 152 m hoch.

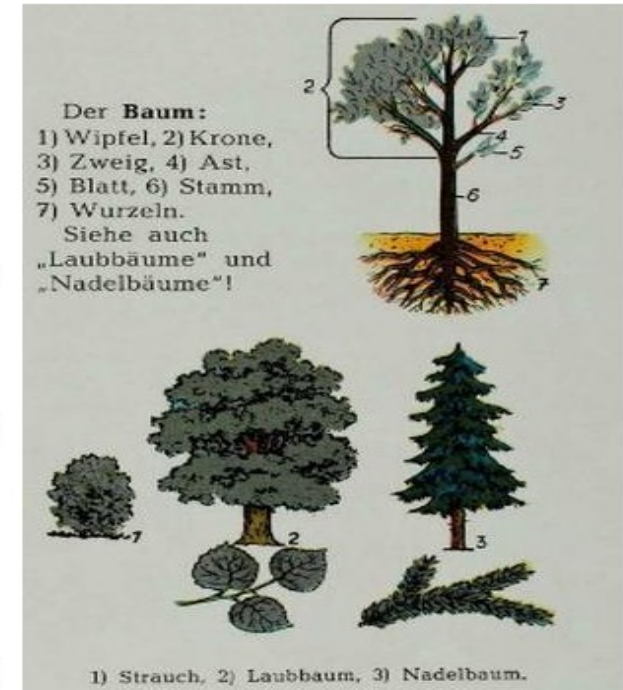
Bäume bieten Feuchtigkeit, Schatten, Wind-, Sicht- und Erosionsschutz, binden Staub und verbessern dadurch die Luft. Bäume bilden in vielen Gebieten der Erde, als Wald, die beherrschende Vegetationsform. Auch in Gärten, Parkanlagen und Wohngebieten schaffen Bäume ein Mikroklima mit höherer Luftfeuchtigkeit und ausgeglicheneren Temperaturen.

Bäume sind als Holzlieferanten weltweit wichtige (nachwachsende) Energieträger und Rohstoff für vielseitig verwendbare Werkstoffe.

Weitere große wirtschaftliche Bedeutung haben Bäume wegen ihrer Früchte und Samen, sowie für die Gewinnung von Harzen, Kautschuk, Gerb-, Farb- und Bitterstoffen.

Recherchen:

- Quelle 1: <http://www.bio-gaertner.de/Baeume/Baeume-Allgemein> 18.12.2012
- Quelle 2: Gilsenbach, Hannelore: Bäume. In: Was ist Was. Band 31, Tessloff, Nürnberg 2001.
- Quelle 3: Burnie, David: Bäume. In: Sehen Staunen Wissen. Gerstenberg, Hildesheim 1988.
- Quelle 4: Eintrag "Bäume" im Großen Brockhaus Lexikon Online 2012.
- Quelle 5: Bäume. In: Brockhaus Enzyklopädie in 30 Bänden. F.A. Brockhaus, Leipzig, Mannheim 2006, 21.Auflage Band 3, S. 387
- Quelle 6: Schematisches Bild aus der "Kinderwelt von A bis Z", S. 33, siehe [Web Books/Lexika/Kinderwelt](#)



Schematische Darstellung
Siehe Recherchen Quelle 6

Copy/Paste also dangerous if material is not citeable:
not stable in time, nor reliable source.

Classical Example: The Ritterling mushroom

Considered good eating since Roman times. A major search engine says:

home
Alle Pilze
Giftpilze
Essbare Pilze
Ungenießbare Pilze
Gattungen
Allgemeines
Pilzregeln
Begriffe
Vergiftungen
Pilzkunde
Andere Pilzseiten
Recht
Quellen
Rezepte
Küchentipps
Fliegenpilze
Kochbuch
Login

← Zurück

Echter Ritterling (*tricholoma equestre*) Ritterlinge (*Tricholoma*)

Allgemein:
auch "Grünling". Er ist ein guter beliebter Speisepilz, der für seine Sandigkeit bekannt ist. Die Art steht seit 1986 in Deutschland unter Naturschutz und darf deswegen nicht gesammelt werden.

Good eating!

Grünling, Echter Ritterling - Windows Internet Explorer

http://www.123pilze.de/DreamHC/Download/GruenlingEchterRitterling.htm

Datei Bearbeiten Ansicht Favoriten Extras ?

Pilz Grünling, Echter Ritterling

GRÜNLING, ECHTER RITTERLING

TRICHOLOMA EQUESTRE

Deadly poisonous

Hence we need citeable, time-stable reliable material on the Web, my currently largest project: www.austria-forum.org

Memorizing ability disappears, but thinking without facts is impossible
and

Students today know less than comparative ones did twenty years ago

This is all definitely true. What does it imply?

Certain facts and logical thinking still have to be learnt, yet
curricula should be looked at carefully: WHAT and WHEN to
teach/learn is the main question to be investigated

However we have to understand:

Yes, memorizing ability and knowledge has been (probably) reduced by new technologies.

However we have to understand:

People have to be judged not alone, but in symbiosis with computers, networks and other people: if they individually are weaker than in past times, so what, as long as they are better as symbiotic beings.

People 150 years ago could run at 5 mph with a 50 pound rucksack for an hour. Most people could not do this today

However, they can go at 50 mph with 500 pounds for 10 hours by car, or at 500 mph by plane

Or: My handwriting has much deteriorated. But what I type can be read better (and spread faster) and has fewer misspellings than my handwritten stuff. So why should I worry?

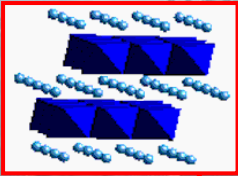
Much research and thinking is not taking into account that we should not measure what people can achieve by themselves, but we should consider what they can achieve using tools available to them:

No matter if is agricultural tools, any other machinery, or IT stuff like calculators, GPS, smartphones, computers, networks,...

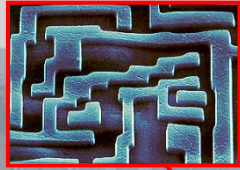
On a typical day in Europe



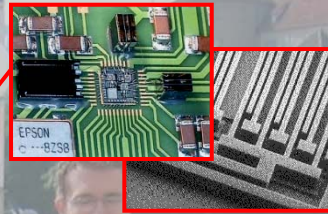
Pace Maker
Li-Batteries
New Materials for Energy



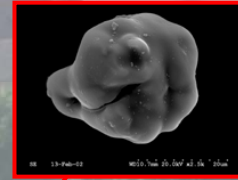
GPS Navigation
Functional Materials



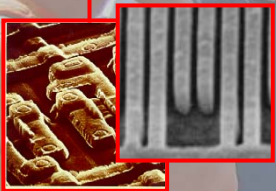
Air Bag
Acceleration Sensors
MEMS



Cosmetics
TiO₂ Nanoparticle



Mobile Phone
SAW Structures



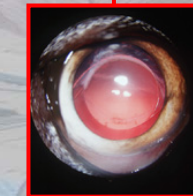
Artificial Hips
Biocompatible
Materials



Glasses and Coatings
Optical Materials
UV Filter

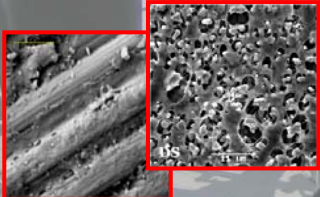


Digital Camera
CCD Chip



Artificial Lens
Biocompatible
Polymers

Bike Frame
Carbon Fibres
Composite Materials



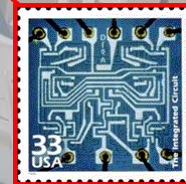
GMR Read Head
Magnetic
Multilayers



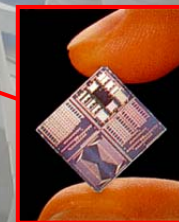
LED Display
Photonic Materials



Intelligent Credit Card
Integrated Circuits



Exact Time via satellite
Semiconducting devices
Micro-Batteries



Taylored Materials at Work

E-Learning has never really worked (Spitzer):

Certainly exaggerated. E-Learning has become important for on the fly / on the job learning, for catching up, for lifting members of a group to same level, for repetition, to avoid long travel, etc.

However, Spitzer is right that there is no solid evidence that E-Learning is making knowledge-transfer truly more effective:

The Freiburg Experiment (Ottmann)

The Bank-Academy Experiment (Hasebrook, Maurer)

The Video Experiment (Spitzer)

Real reason: To learn, we have to make the brain work.

Spitzer puts it like this:

Learning without sweat is impossible

„If at some stage a way is found to actually make learning easier, it will be counter-productive. To understand something complex it is necessary to think hard (and no technology can do this for us).“

There are four sad facts:

- Self discipline often not enough for E-Learning
- Little correlation between quality of lecture and learning
- To explain difficult matters it is wise to make mistakes
- Capturing attention is easier in life-lectures (mistake test)

Let me finish, as I started, with a „philosophical“ observation:

Technology changes how we use and experience the world:
Think of Elsa-Kunkle's or Ann Brabazone's work.

How much technology/ how high a living standard do
people need to be happy?

Answer: Beyond basic needs almost nothing. To be happy
or content has little to do with what we have or don't have ...
and this can be proven easily

So? **What really makes people unhappy if they know
about things others have and they can't have**

Hence it would be nice if our world would be a more balanced place, the difference between poor and rich less (Radermacher: Balance or Destruction)

However, let us not try to change other cultures, let them live as they want, help them if they want help, but don't impose help or cultural values.

Do you know the most dangerous 12 words of the English language?

I am from the USA. And I have come to help you.

Thank you for your attention

URLs:

www.iicm.edu/maurer

email:

hmaurer@iicm.edu

www.ae-info.org

www.jucs.org



Bridge connecting the two parts of the old part of Graz

My SF novels: www.iicm.edu/XPERTS

