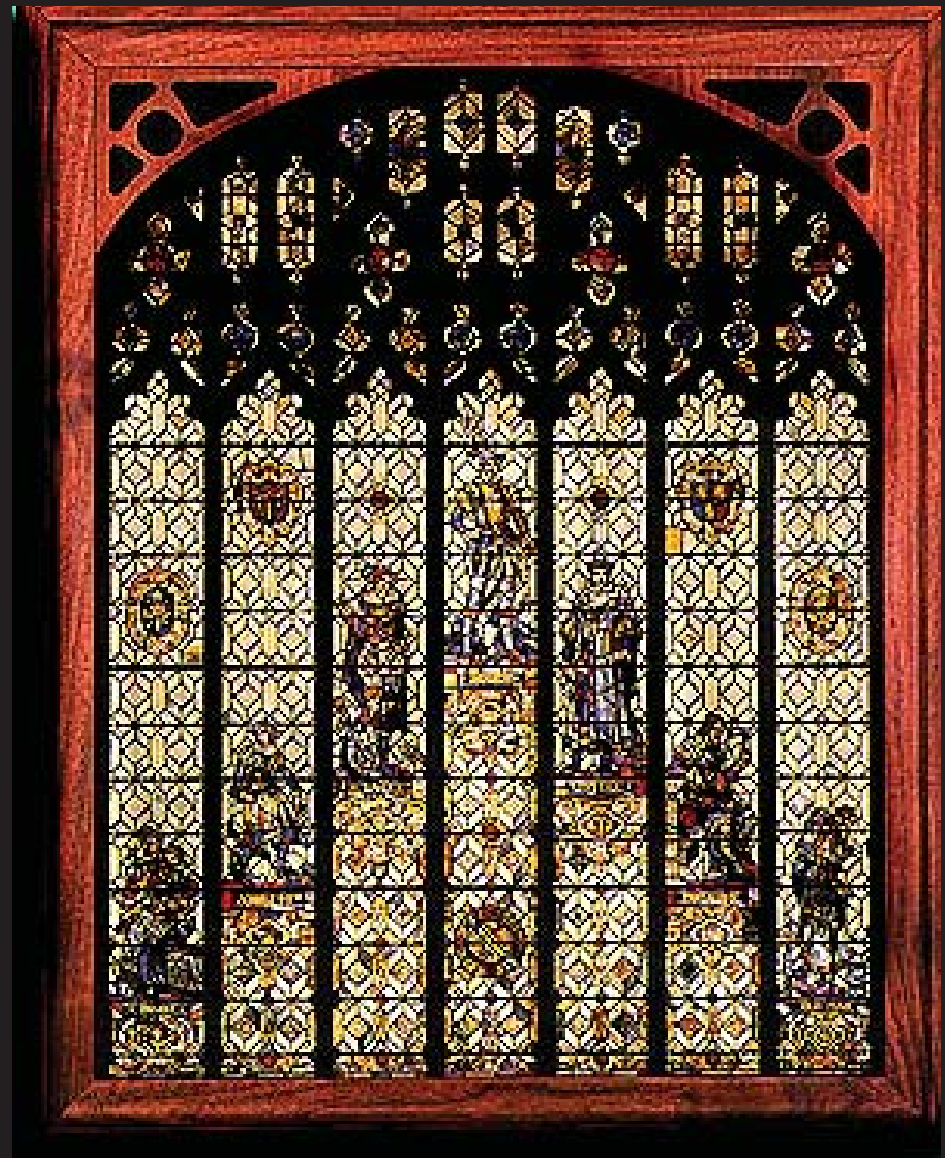


*Seven ages of
Technology in
Education*

Prof Johannes Cronje

Johannes.cronje@gmail.com



All the world's a stage ...



- And all the men and women merely players:
- They have their exits and their entrances;
- And one man in his time plays many parts,
- His acts being seven ages...

William Shakespeare
As you like it

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Your work – to make this Interactive

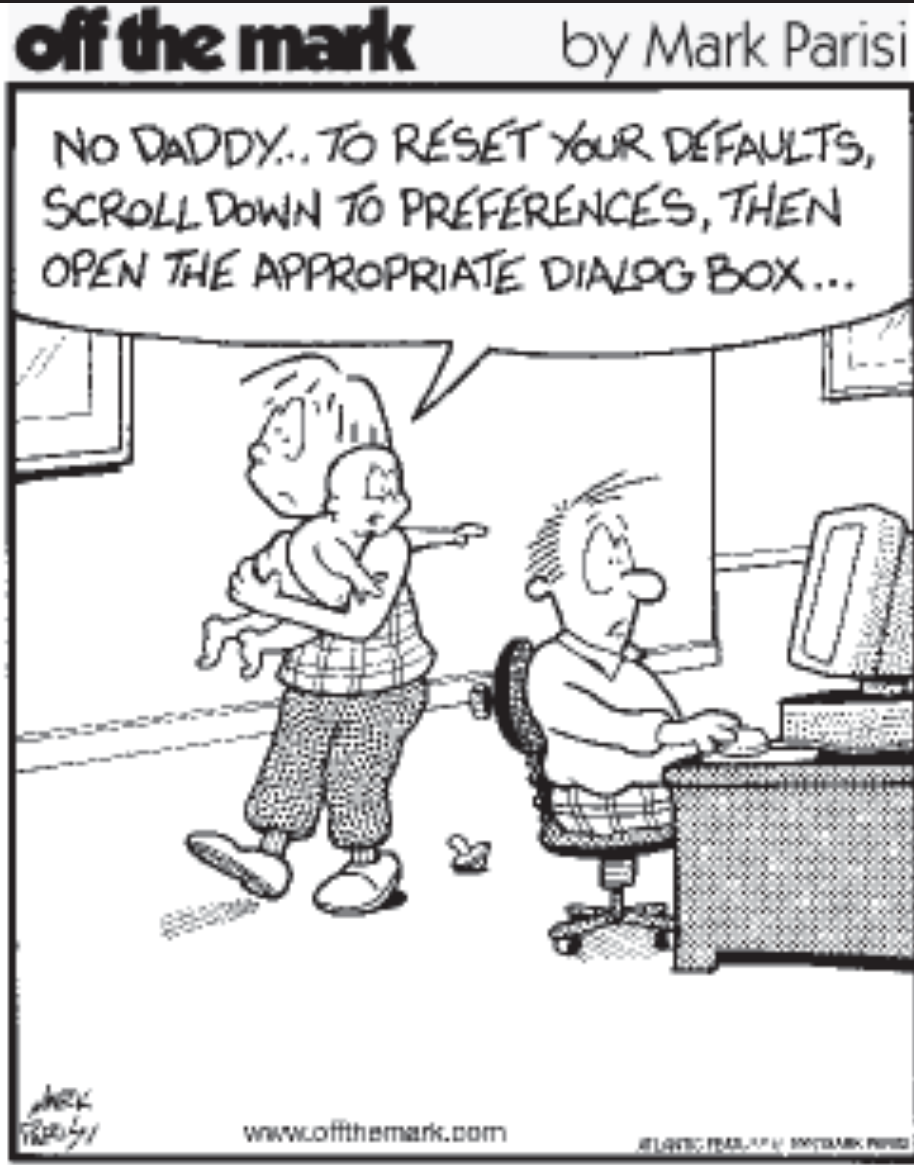


- Send me an SMS that says what YOU think ALL the winning schools have in common

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At first th

- Small byte
- Scares easi
- Computer
- Violent rea



or

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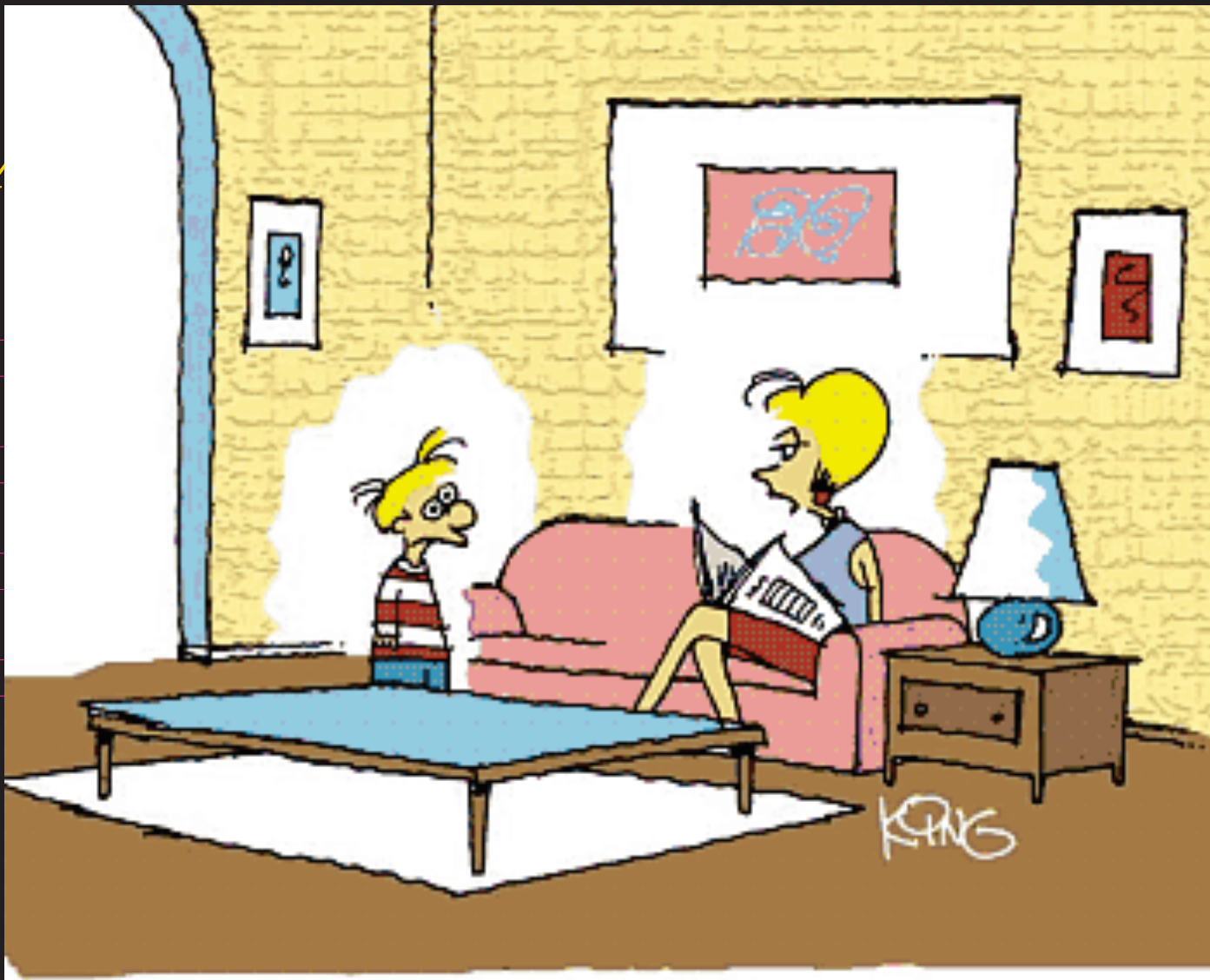
Remember when



- A computer was something on TV
From a science fiction show.
A window was something you hated to
clean,
And ram was the cousin of a goat.
- Meg was the name of a girl,
And gig was your middle finger upright.
Now they all mean different things,
And that really mega bytes!
- Memory was something that you lost with
age.
A CD was a bank account.
And if you had a 3 .5" floppy,
You hoped nobody found out!
- Compress was something you did to the
garbage,
Not something you did to a file.
And if you unzipped anything in public,
You'd be in jail for a while
- Log was adding wood to the fire.
Hard drive was a long trip on the road.
A mouse pad was where a mouse lived,
And a backup happened to your commode..
- Cut you did with scissors,
Paste you did with glue,
A web was a spider's home,
And a virus was the flu.
- I guess I'll stick to my pad and paper
And the memory in my head.
I hear nobody's been killed in a computer
crash,
But when it happens they wished they were
dead!

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oy



"No, you weren't downloaded.
You were born."

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off the mark

by Mark Parisi

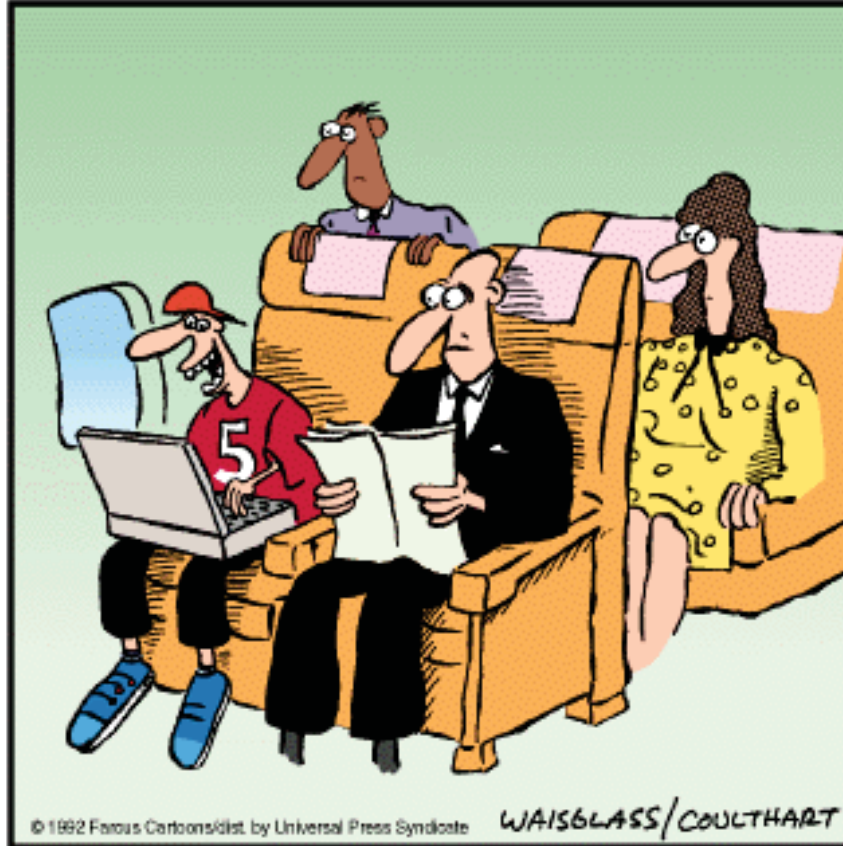
EXCUSE ME A SEC... I WANT
TO CHECK I DON'T HAVE WHAT I GOT
ON MY

Farcus

by David Waisglass
Gordon Coulthart



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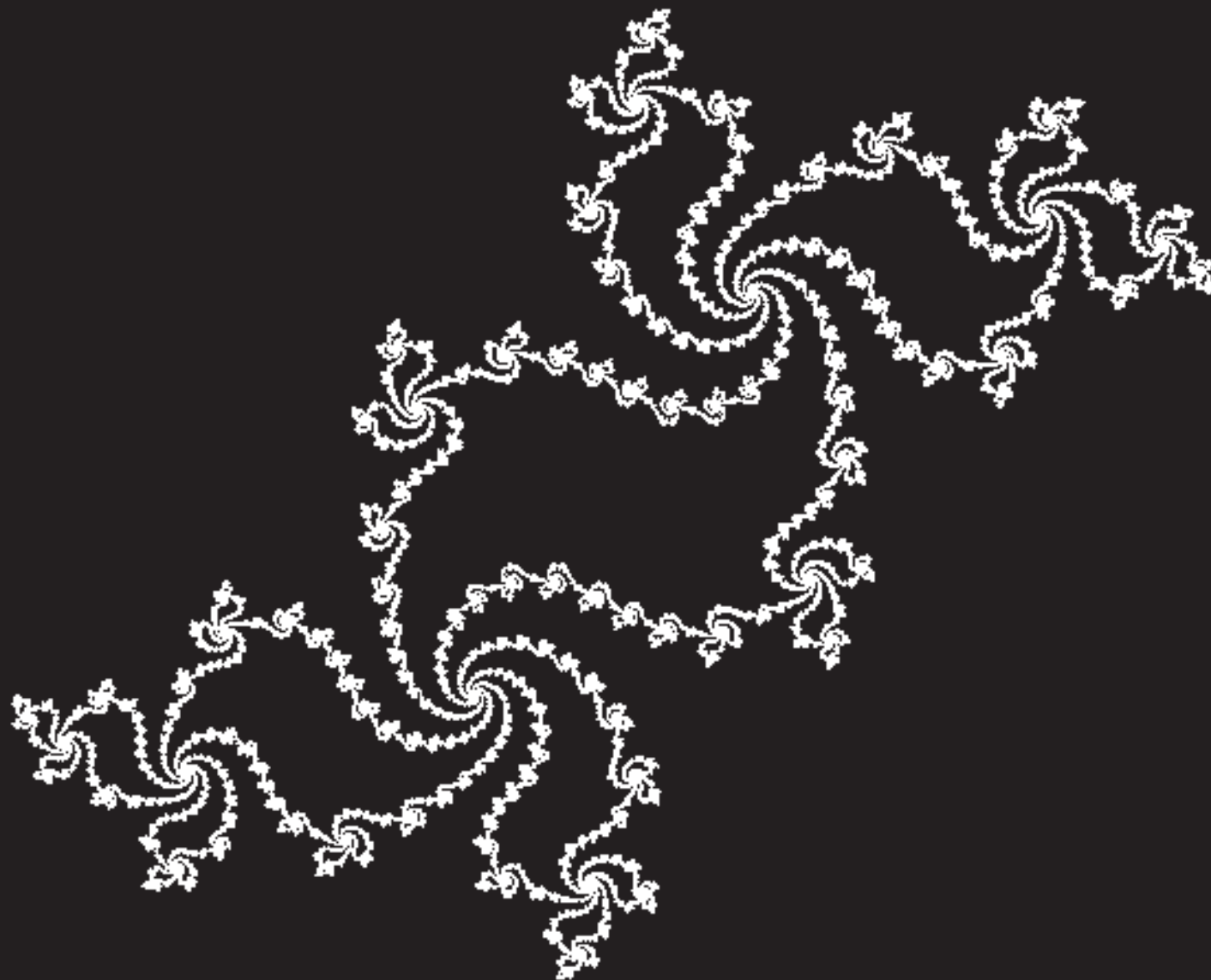
© 1992 Farcus Cartoonist by Universal Press Syndicate

WAISGLASS/COULTHART

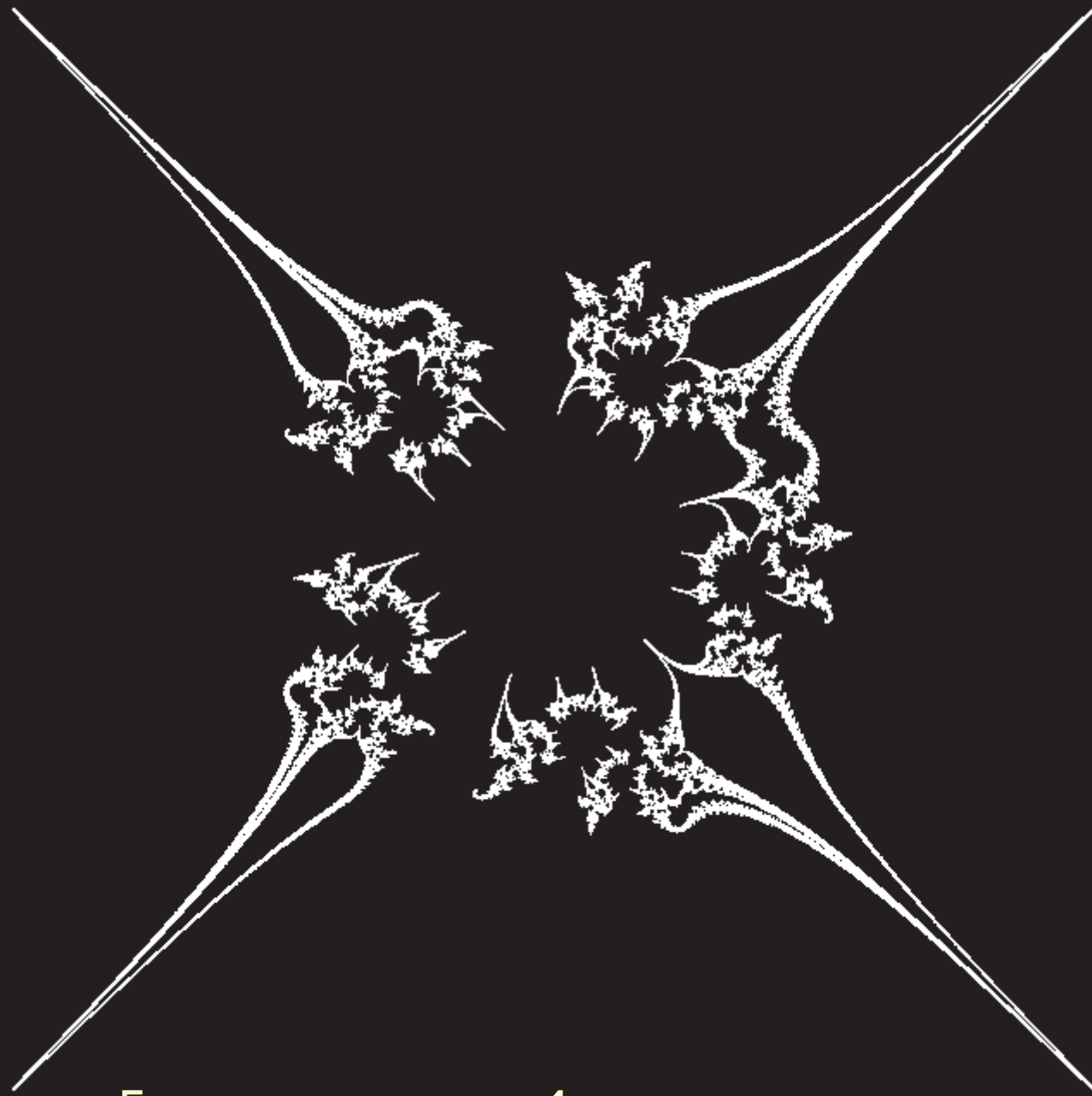
74777.3301@compuserve.com

“Cool! I just jammed the air traffic
control tower!”

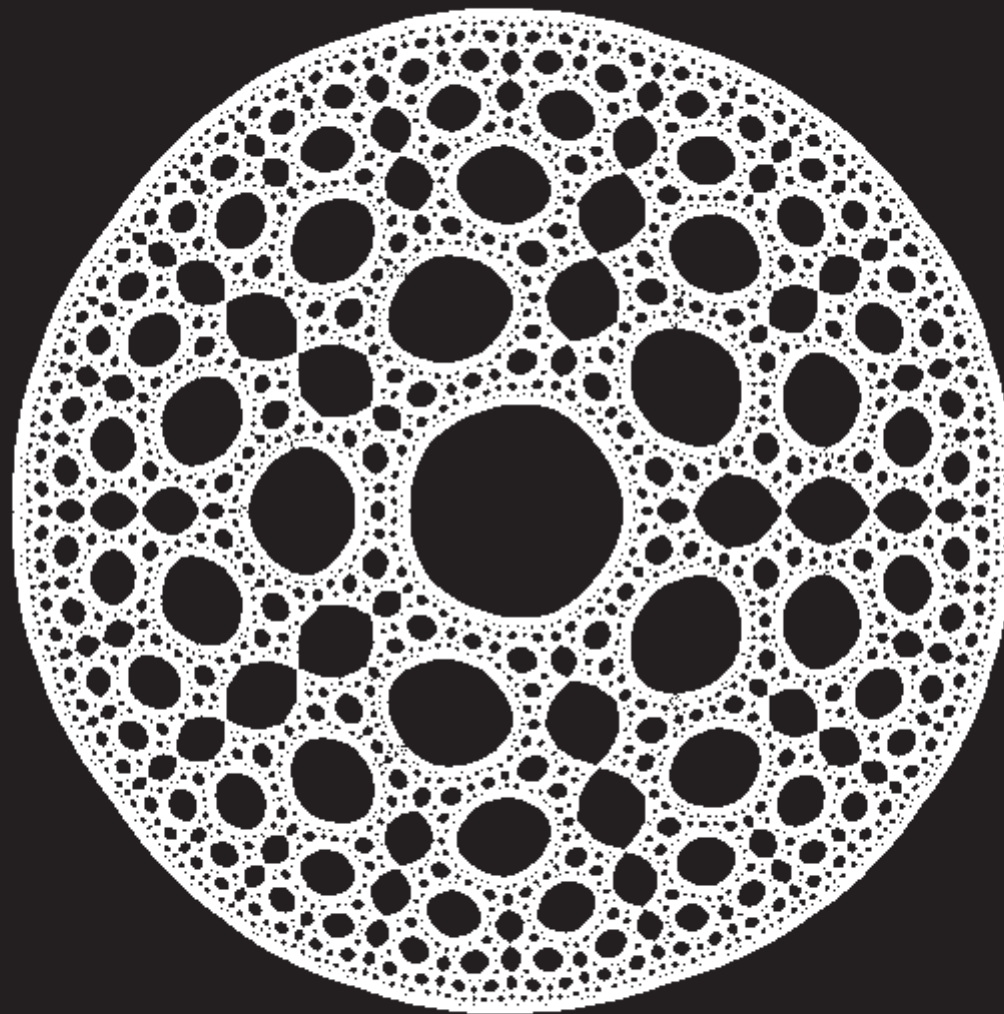
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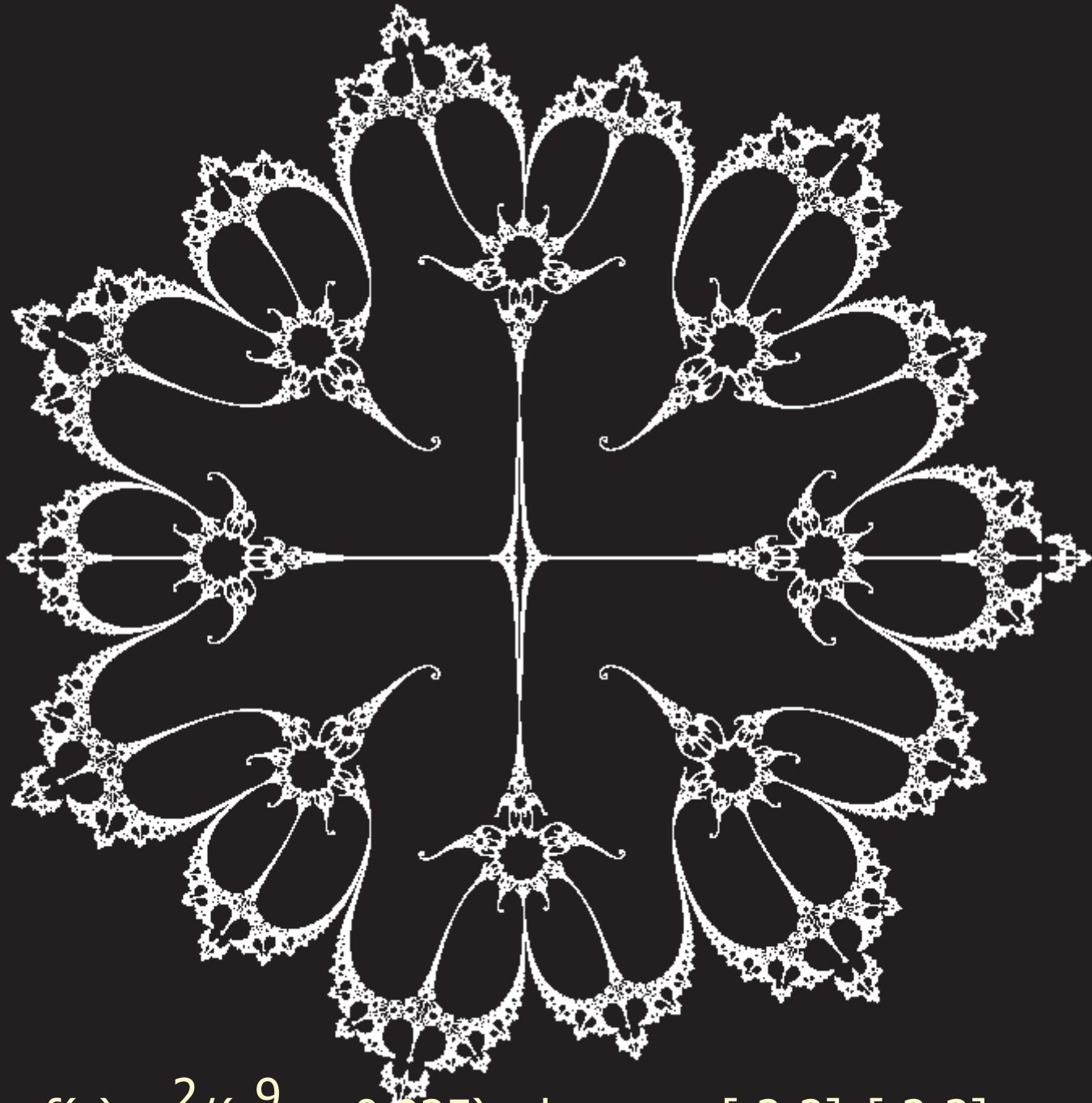
$f(z)=z^2+c$ with $c=-0.2-0.7i$, shown on $[-1.8;1.8]\times[-1.8;1.8]$



$f(z) = \frac{-4.0004z^5 + 0.005(1-i)}{-4iz^4 + 0.001i}$ shown on $[-1;1] \times [-1;1]$.



$f(z) = (z^5 + c)/z^3$ with $c = 0.001(?)$, shown on $[-1.5; 1.5] \times [-1.5; 1.5]$.



$f(z)=z^2/(z^9-z+0,025)$, shown on $[-2;2]\times[-2;2]$.

What is this?



- They are all Julia sets, but what is a Julia set?
- If a function f maps a region G to itself, f can be iterated. The Julia set of f then is the set of all points of G , at which this sequence of iterated functions is not equicontinuous.

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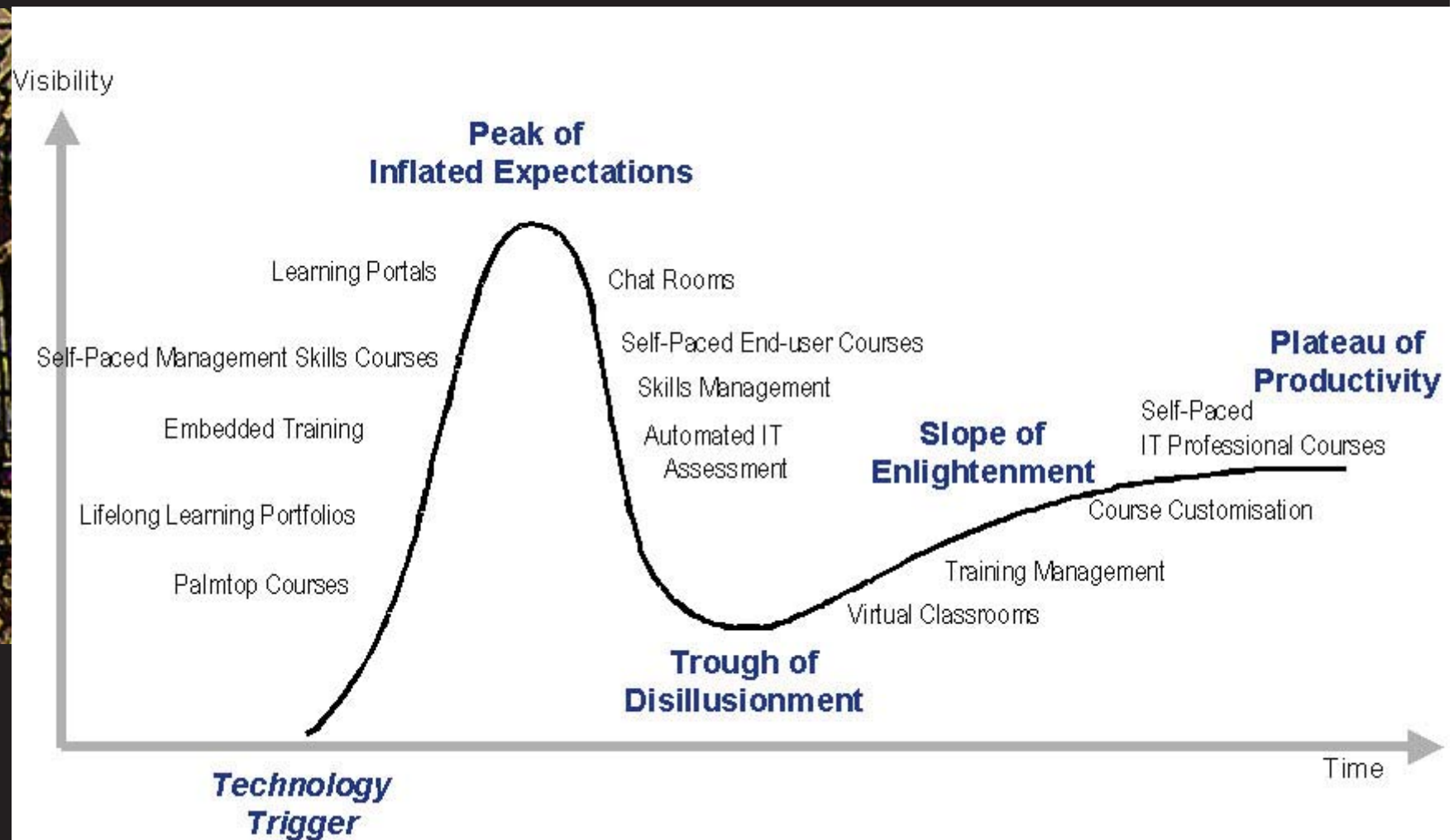
Or put differently





1100 550 502

Gartner's hype cycle (www.e-learning.nl)



The lover of technology

- Home is where you hang your @
- The E-mail of the species is deadlier than the mail.
- A journey of a thousand sites begins with a single click.
- You can't teach a new mouse old clicks.
- C:\ is the root of all directories.
- Pentium wise; pen and paper foolish.
- The modem is the message.
- Too many clicks spoil the browse.
- The geek shall inherit the earth.
- Don't byte off more than you can view.
- Fax is stranger than fiction.
- What boots up must come down.
- Windows will never cease.
- In Gates we trust.
- Virtual reality is its own reward.
- There's no place like <http://www.home.com>



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And finally...



- Give a man a fish and you feed him for a day;
- teach him to use the Net and he won't bother you for weeks.

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"Word around the office is that your promotion to supervisor has gone to your head."

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A pair o'dimes shift



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Old paradigm

- Passive learners
- Exam-driven
- Rote-learning
- Syllabus content-based, and in subjects
- Syllabus as rigid and non-negotiable
- Objectives: what teacher wants to achieve
- Behavioural approach to learning and assessment
- Assess isolated knowledge & discrete skills
- Individual learning and products

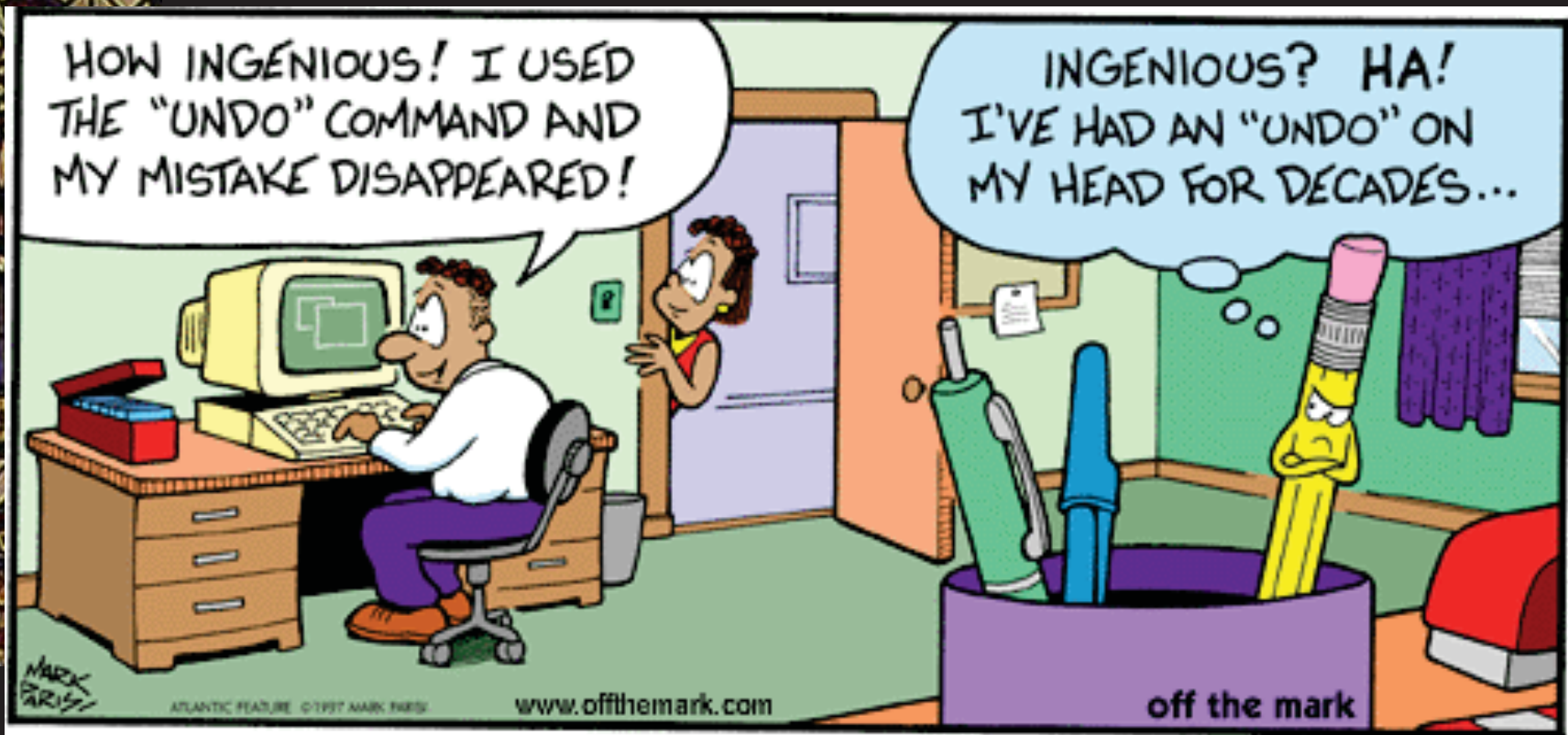


New paradigm

- Active learners
- Continuing assessment
- Critical thinking,
- Integrated, relevant & with real-life situations
- guides to make teachers innovative and creative
- Outcomes – what learner becomes and understands
- Cognitive approach to learning and assessment
- Assess abilities, thinking processes, meta-cognition and attitude
- Collaborative learning and products

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Is this really Old and new?



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Is there really old and new?



- Old Math v New Math
- Traditional teaching v Innovative
- Positivist v Relativist
- Socratic v Platonic (NB who's older now?)
- Prometheus v Ephemethius

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The root of all evil



- Prometheus
- Literally “Third
- *Stole* from Zeus
- TAUGHT it to
- Action oriente
- Positivist
- Instructivist

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The root of all evil



- Ephemethius
- Literally “Thinking back” - reflection
- Was punished for his brother’s crime
- By getting a **wife**.
- *Relativist*
- Constructivist

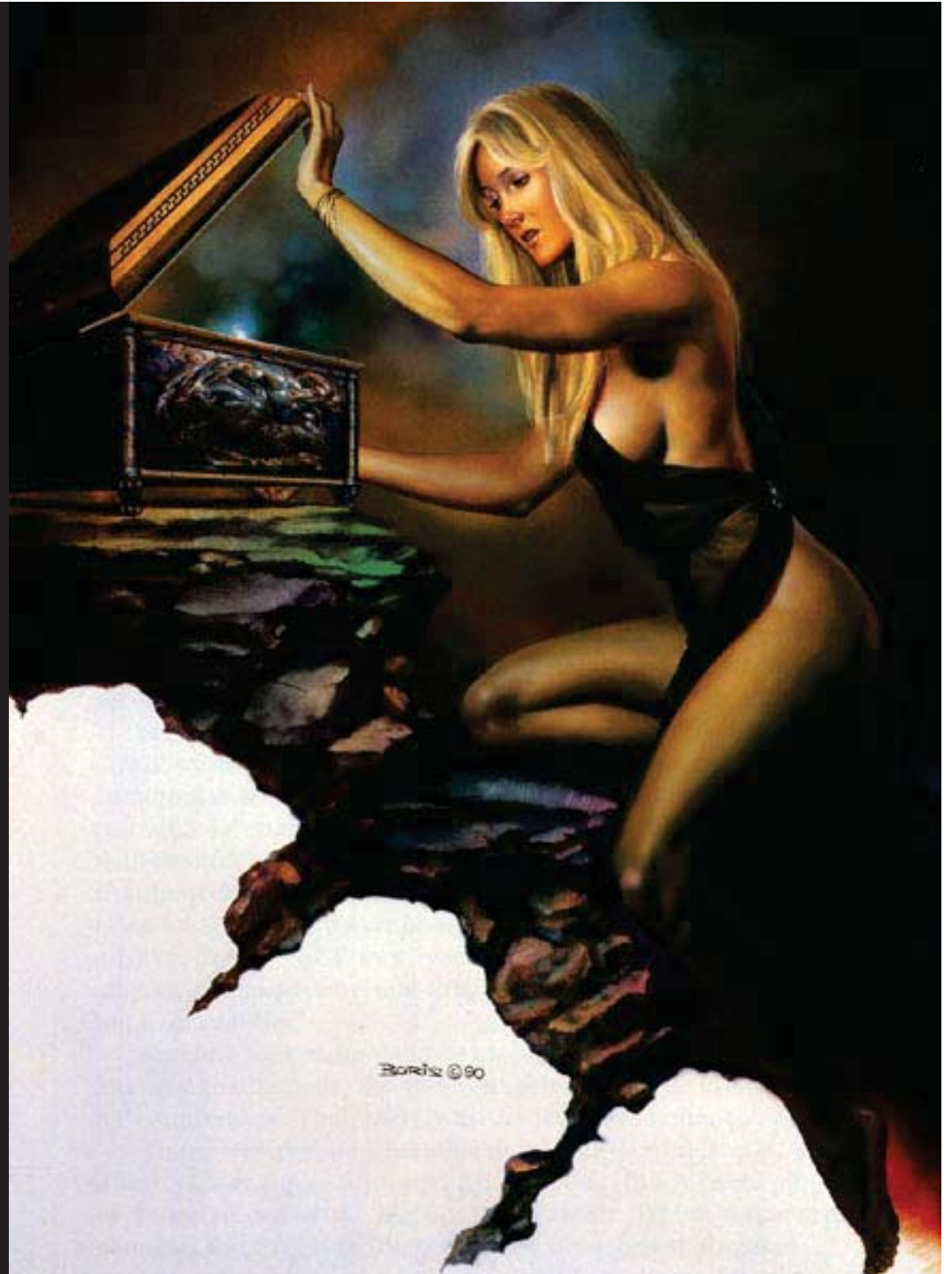
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Pandora



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And then the justice

GNURF

copyright 1995-1997 Paul Söderholm
e-mail: gnurf@surfnnet.fi



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And one remained



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I VERSUS C?



- Instructivism: How to put knowledge across.
- Constructivist: How do we learn?
- They are NOT opposites
- They are at CROSS PURPOSES
- Therefore they cannot be plotted at 180°

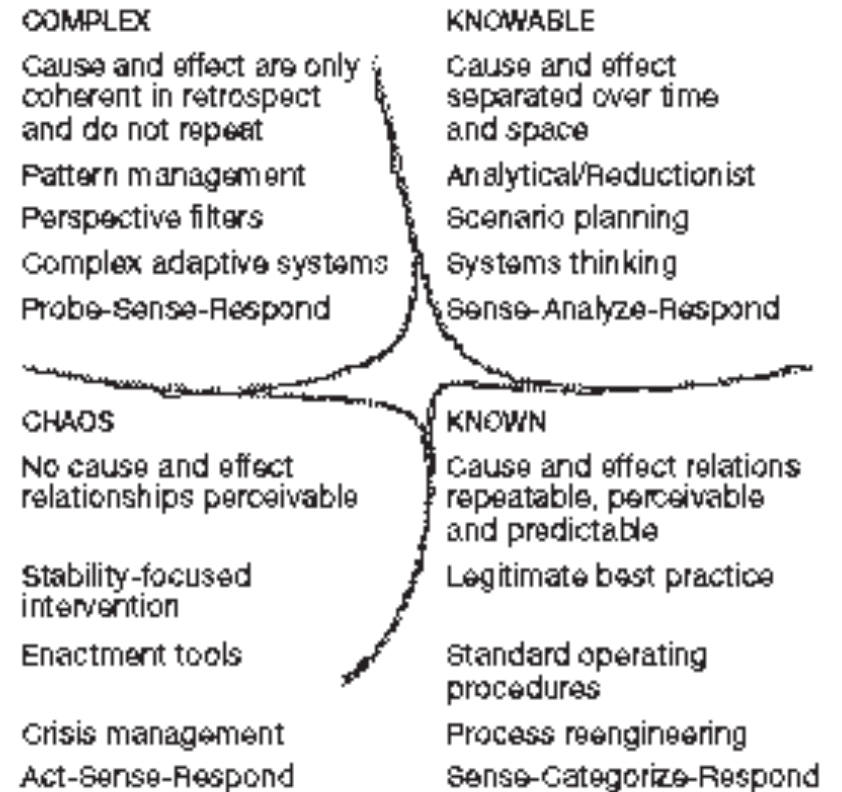
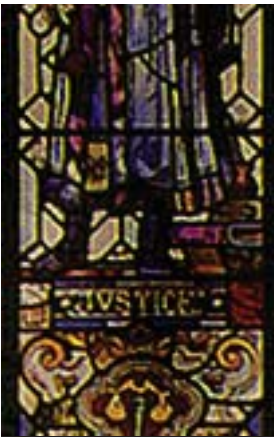
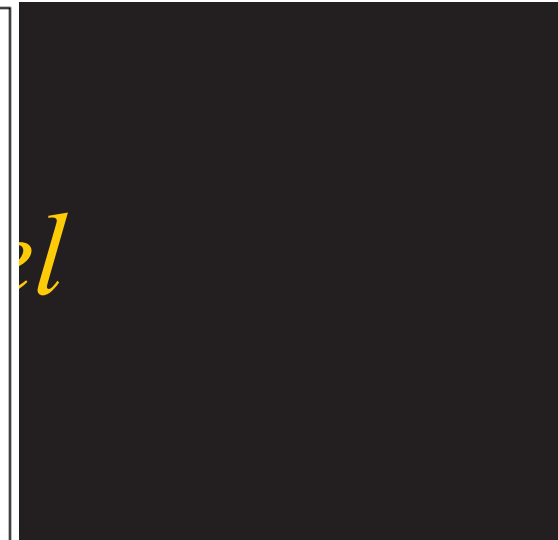
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ENTER THE MATRIX

Objectivism

10		
9		
8	Instruction	Integration
7		
6		
5		
4		
3	Chaos	Construction
2		
1		
0	1 2 3 4 5	6 7 8 9 10



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Judging the strategies



- Classrooms or laboratories
- Subject choices
- Computer staff
- Selection of software
- Selection of hardware

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<http://localedclipsed.hypermart.net/>



r'd

ment

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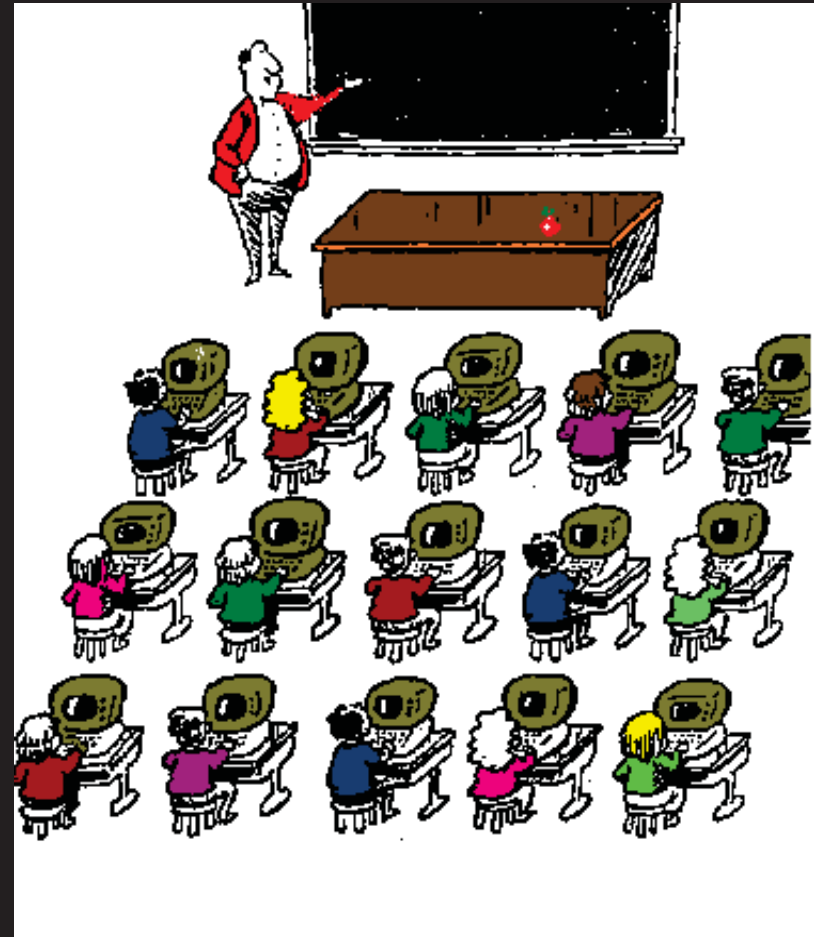
What-is-a-School?



- Factory model
- Workshop model
- Construction site model (information processing)
- Opportunity (one computer per school)

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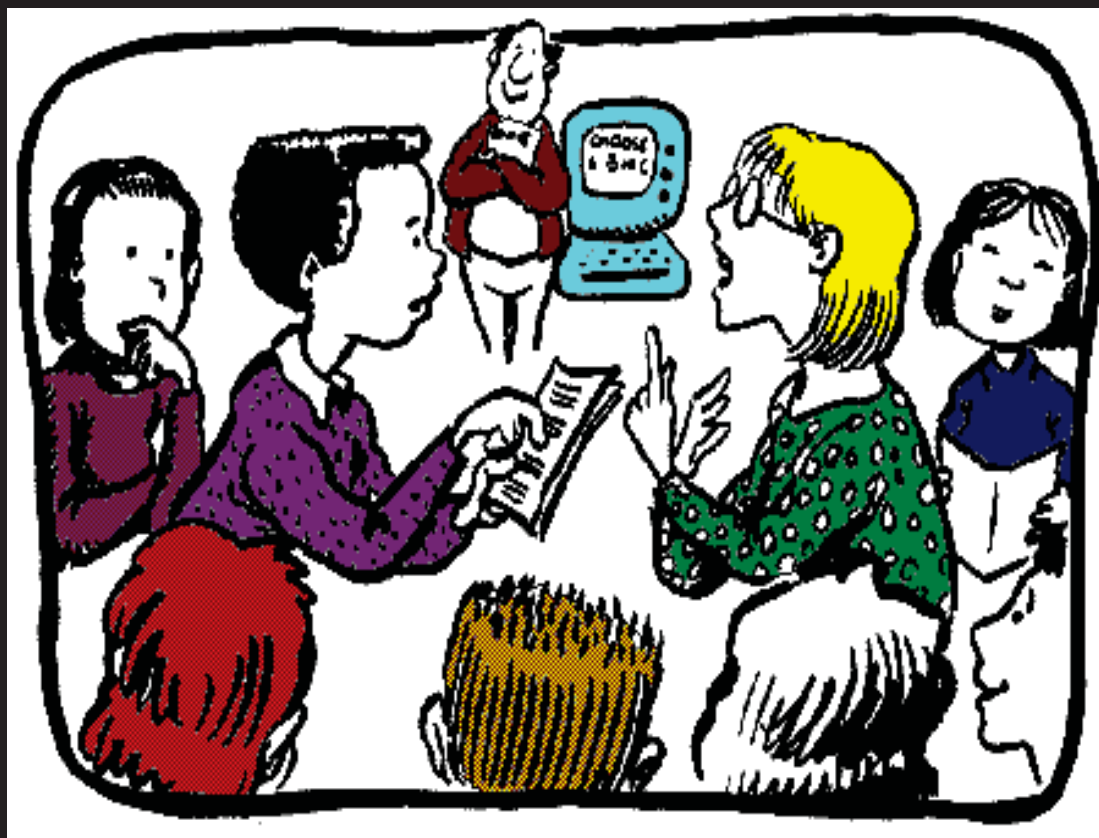
Factory Model



What's wrong with this picture?

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Workshop model

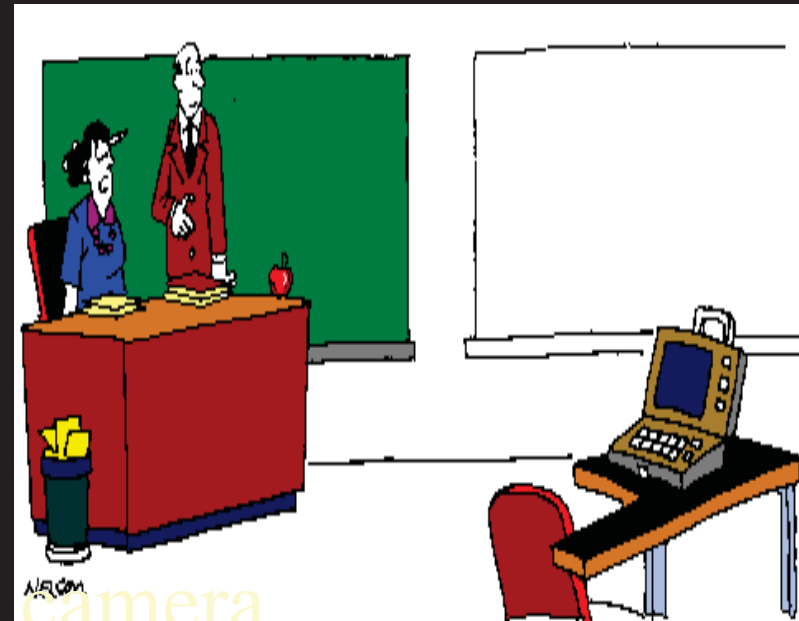


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Construction site model



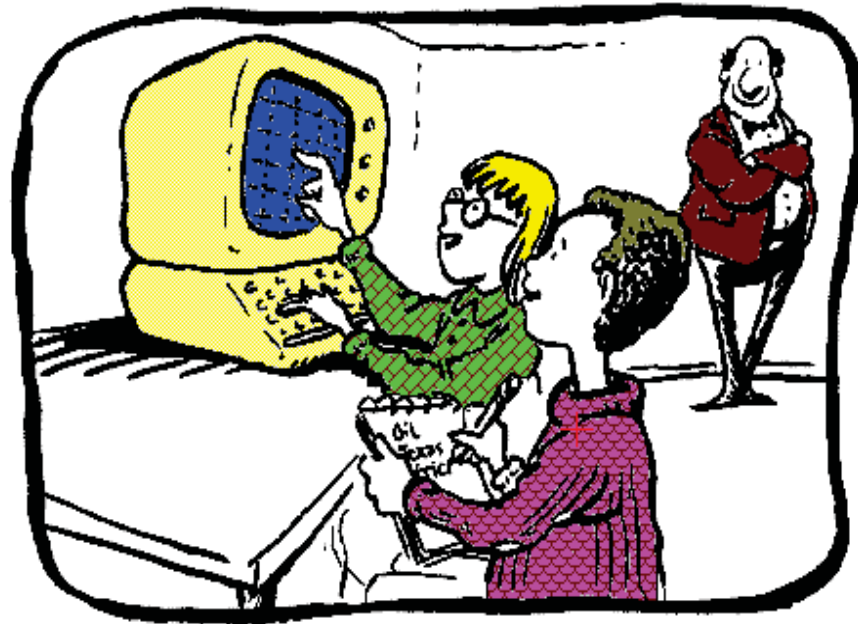
- Laptops
- Cell phones
- Pda
- Video camera
- Digital/disposable camera
- I-pods



*He leaves his notebook to
take notes when he bunks*

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Opportunity model



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Second childishness and mere oblivion

- Crying over m
- OR
- Looking forward



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NY

IS GAIN.



UPIDITY

FUTILITY

YOU'LL ALWAYS MISS 100% OF THE SHOTS YOU DON'T TAKE,
AND, STATISTICALLY SPEAKING, 99% OF THE SHOTS YOU DO.

NEVER WIN, WINNERS NEVER QUIT,
> NEVER WIN AND NEVER QUIT ARE IDIOTS.

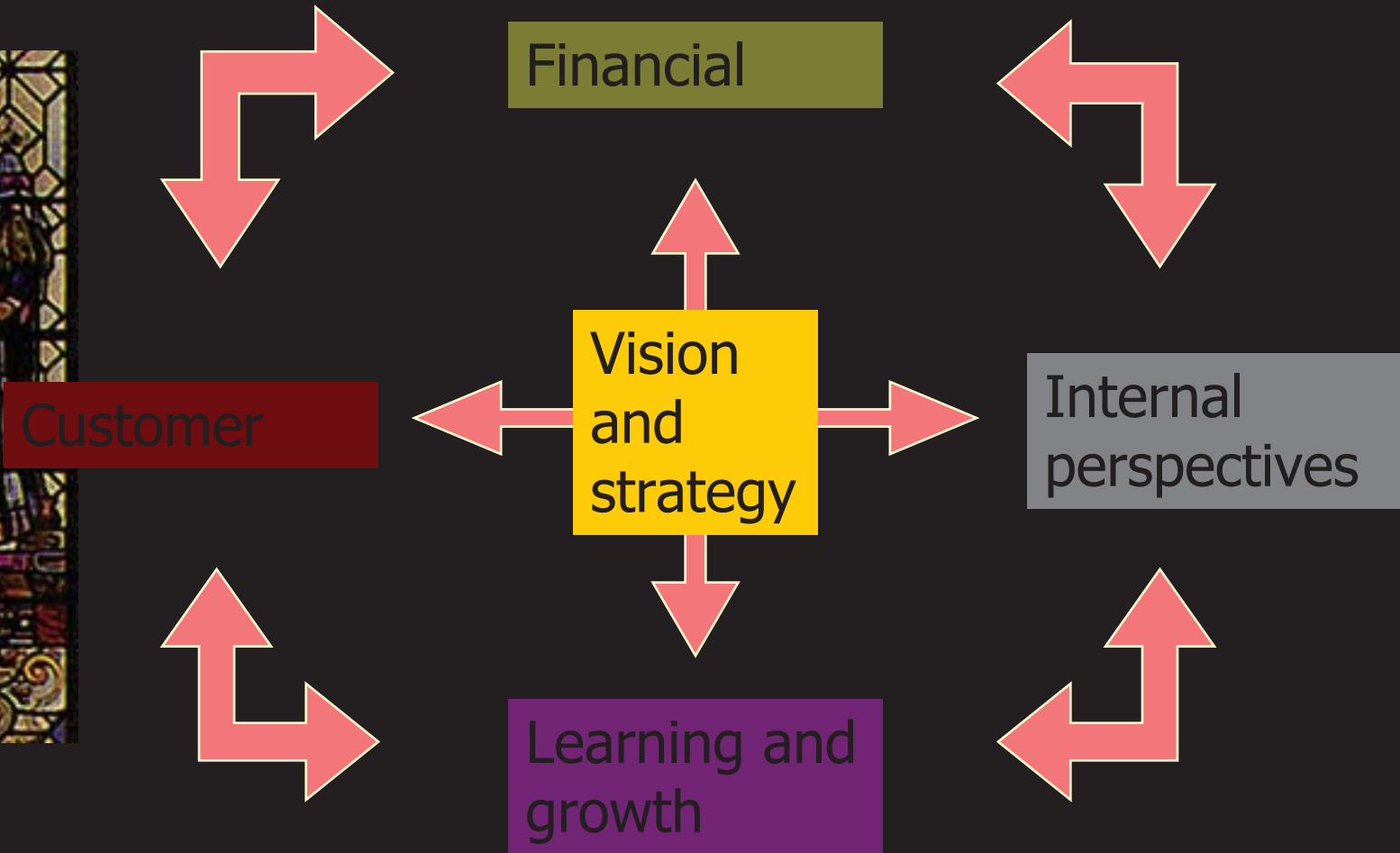
... or Innovating! – What the schools have in common



- Learners learn by doing
- Learners produce learning materials
- Schools develop their own software and websites
- Research done by learners
- Focus on *learning*, not on technology
- Make magic out of nothing
- Computers across the curriculum – integrated & thematic
- Educator training
- Community involvement, outreach and sharing
- Focus on girls
- International links
- Future plans

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Future plans: The balanced scorecard



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The training cycle



Evaluation

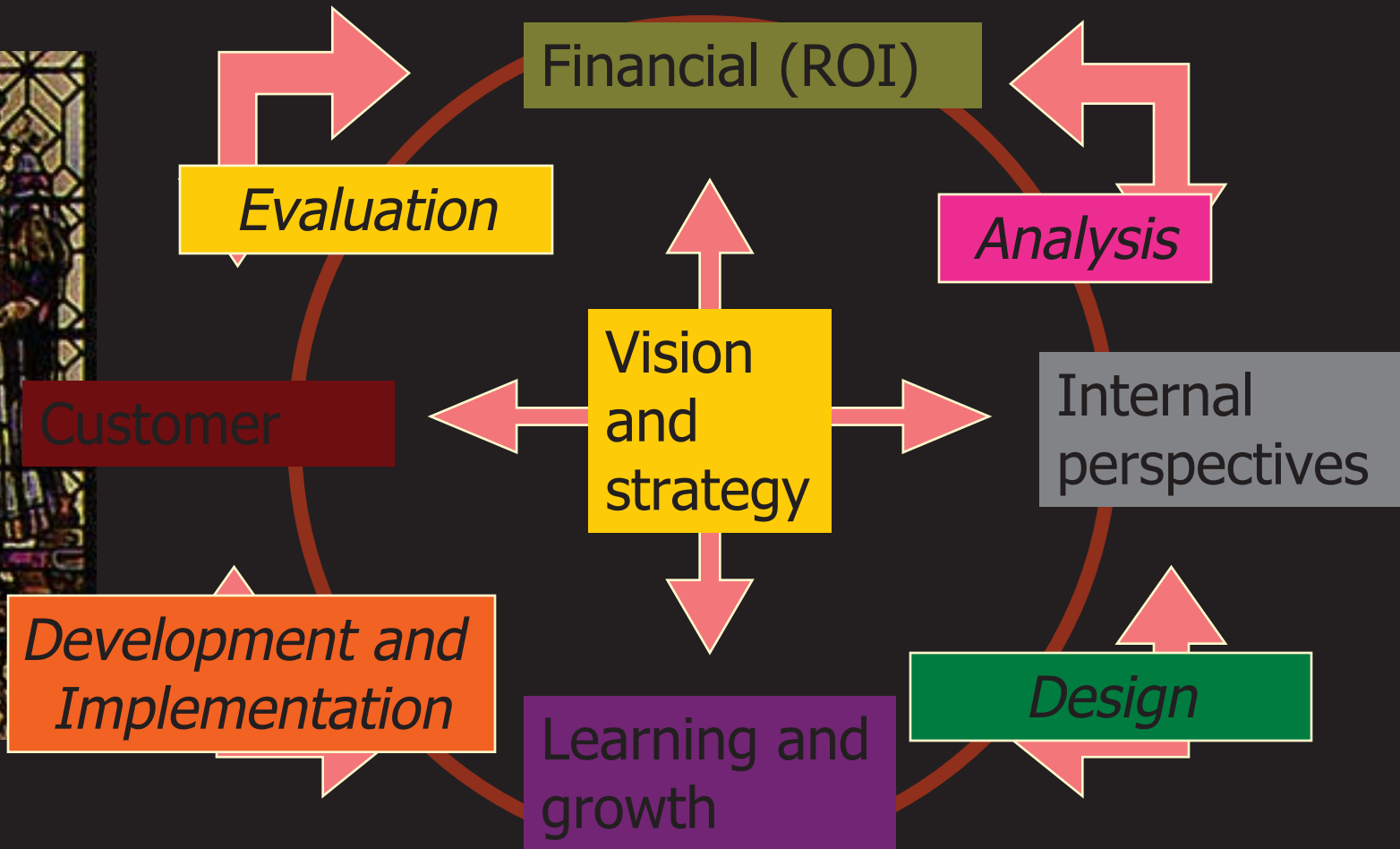
Analysis

*Development and
Implementation*

Design

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The e-learning scorecard



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Remember



- Teach a man to fish...
- And he'll sit in a boat drinking all day

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