

2020 Vision

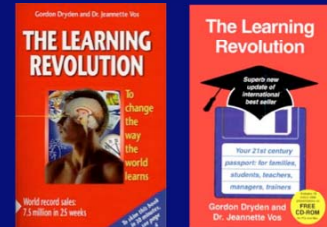
And the leap to the next society.



By Gordon Dryden

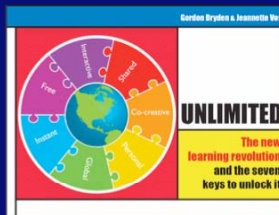
Co-author, The Learning Revolution

Five editions of The Learning Revolution since 1993.



In 21 languages.

The latest one is a complete update in color.



And forecasts 7 keys to unlock the future.

They are still spot on. But they are not the whole story.



Four major disruptive technologies now converge to revolutionize everything.

And the seven keys then merge to transform education.



Note: "Social" will replace "instant" in graphic

Yesterday's schools still exist.



Chalk. Talk. Listen.

But today education is different.



Explore. Discover. Create.

Use the world as the classroom.



On safari. On Google. On YouTube.

You can even tour the planet with students from other countries.



Record your travels and share your experiences on the Web.

Even schools without classrooms.



Stockholm.
Sweden

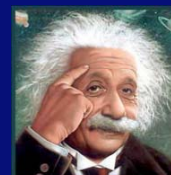
And universities in cyber-space.

With tools that are revolutionizing the way we teach and learn.



Anywhere. Any time. Any device.

Even a new way of thinking.



'Logic will get you from A to B.
Imagination will take you anywhere.'

Albert Einstein

Even join 'The Crazy Ones'



<http://www.youtube.com/watch?v=lggtLSHhTPg>

The four disruptive innovations that change everything:

- 1. Moore's Law.
- 2. Drucker's Law.
- 3. Metcalfe's Law.
- 4. Steve Jobs' vision.

Disruption 1: Moore's Law (1965).



Gordon Moore, Intel co-founder

Computer power doubling every 2 years.
Probably every 3 years from 2013.

1954: 4 transistors on one chip:
the first transistor radio.



Biggest selling electronic device in history — until the mobile phone.

1971: 2300 transistors on
one integrated silicon circuit.



Result: the first pocket calculator.

Now the number of
transistors possible
on solid-state chip*:

- 2010: 2 billion
- 2012: 4 billion
- 2015: 7 billion
- 2018: 14 billion
- 2021: 28 billion

* Or fewer but chip much cheaper.



Disruption 2: Drucker's Law.

(Still writing great books into his nineties)



To replace an existing technology, a new one must be **10 times better**.

Apple iPod is way beyond that.



'1,000 songs in your pocket.'
So it made **Sony Walkman** obsolete.

So is Wikipedia.



Now: 40 times as many articles as
Encyclopedia Britannica.
And information updated every day.

When the Mac launched in 1984, only
one "Killer App": **Pagemaker**.



And it launched a new industry: **Desktop publishing**. Everyone a publisher.

Now the incredible compounding:



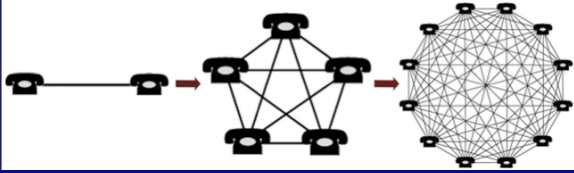
Apple's new online App Store offers
500,000 applications.

And the average price of a new
Apple App: \$3.64 — many free.



Disruption 3. Metcalfe's Law:

The law of compounding networks.



Only 2 phones: 1 network. 5: 9-link network.
But global networks: Exponential—exploding.

And to think that every baby is born with an even bigger brain network.



At birth: 100 billion active brain cells.
Each one ready to fire.

Each active brain cell can grow up to 10,000 branches.



The creative combinations: trillions.

Disruption 4. Steve Jobs' vision.



We're now in the Digital Lifestyle Age
— connected through mobile hubs.

In 2000, half the world had never placed a phone-call.



Only 12% had mobile phones.

Now the world has 6 billion mobile phones for 7 billion people.



That's 86% of global population.

China leads with 995 million.



India close behind.

For the first time in history . . .



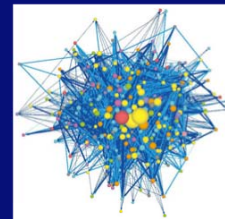
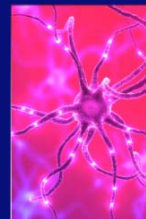
We can now store all the world's information
and make it available in almost any form
almost instantly to anyone on earth.

Now you select what you want, then:



Retrieve it. Learn with it. Create with it.

You can link your unique brain
network to everyone else.



And seven keys can unlock the door.

Key No. 1: It's global.



Everyone linked to everyone else. At the
click of a mouse, or touch of an icon.

Going into 2012—Scorecard:

- Google answers 1 billion questions a day.
- 107 trillion emails sent in year.
- 3.146 billion email accounts worldwide.
- 2.1 billion Internet users worldwide.
- 220 million domain names globally.
- 201 billion videos viewed on line per month.
- 150 million blogs on the Internet.
- 225 million Twitter accounts.

Key No. 2: It's personal.



If it can be digitized, it can be personalized.

Every student in Uruguay has a free laptop for school and home.



Total cost: 5% of national education budget.

<http://www.youtube.com/watch?v=vzX6cfbeDOM>

Today's new Learning Revolution:
The biggest change in education since
mass-produced book 560 years ago.



Now every student a multimedia producer.

Key No. 3: It's interactive.



6-year-olds, on their first day at school, shoot videos.

On day 2 they learn to edit video.



On day 3: they compose music.



With Apple GarageBand computer software.

If you want to learn it, do it.



To learn science, become a scientist.

To embed knowledge, play with it.



Bridge and chess as games models:
with world masters as your coach.

Key No. 4. It's easily shared.



YouTube: 2 billion videos viewed every day — created by millions.

The World Wide Web itself.



Owned by no one. Shared by everyone.

Key No. 5: It's social.



Facebook: from one 19-year-old to 845 million members in 8 years.

10 million Facebook groups.



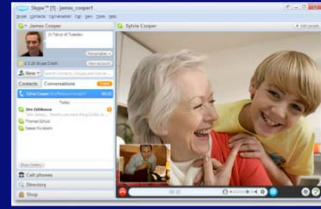
Families and friends share 200 million new photos a day; store them online.

51 million Flickr members.



And they now share 6 billion photos.

Key No. 6: It's often free.



Skype: 663 million registered users:
Free global video phone-calls.

All the world's answers free
on line in half a second.



Then Google earns billions from related
ads: one 25-cent click at a time.

Key No. 7. It's co-creative.



Wikipedia: 20 million articles, created by
millions — and updated every day.

Together we even co-create
computer operating systems.



So you can buy a computer without one.
And download its kernel free.

Even the world's biggest computer
network was co-created.



Its young student founders set out to build
giant system by assembling their own.

Above all: everything is now possible.



Everything that Utopians ever dreamed about can now be achieved. And easily shared.



'We are at the dawn of a new age of networked intelligence: an age that is giving birth to a new economy, a new science, a new society.'

Don Tapscott
Growing Up Digital