Wisdom is not the product of schooling but the lifelong attempt to acquire it.
- Albert Einstein

Lifelong Learning and Self-Directed Learning

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Great Interest in Learning — Because: We are Living in a Different World

Richard Sennett: “The Corrosion of Character: The Personal Consequences of Work in the New Capitalism”

Sennett explores the disorienting effects of the new capitalism. He reveals the vivid and illuminating contrast between two worlds of work: the vanished world of rigid, hierarchical organizations, where what mattered was a sense of personal character, and the brave new world of corporate re-engineering, risk, flexibility, networking, and short-term teamwork, where what matters is being able to reinvent yourself on a dime.

In some ways the changes characterizing the new capitalism are positive; they make for a dynamic economy. But they can also be destructive, eroding the sense of sustained purpose, integrity of self, and trust in others that an earlier generation understood as essential to personal character. In this timely and essential essay, Sennett enables us to understand the social and political context for our contemporary confusions, and he suggests how we need to re-imagine both community and individual character in order to confront an economy based on the principle of "no long term."

How the World Has Changed

	old	new
information	scarce	plentiful
reproduction of documents	expensive and restricted	cheap
specialization	low	high
change within a human life time	slow	fast
interaction / collaboration	physical proximity	shared professional interests

from **Eli Noam: "Electronics and the Dim Future of the University"** , Science, Vol. 270, 1995

Learning

- before we talk about "....." learning, we should understand what **learning** is

- **mutual learning cultures** (Bruner "The Culture of Education"):
  - characterized by sharing of knowledge and ideas, mutual aid in mastering material, division of labor and exchange of roles, opportunity to reflect on the group activities
  - teacher is the enabler (the "primus inter pares")
  - example: Agentsheet video tape

- learning should result in **understanding**, not mere performance
  - when we understand something, we understand it as an exemplar of a broader conceptual principle or theory ("A Private Universe" video tape)
  - claim: acquired knowledge is most useful to a learner when it is "discovered" through the learner's own cognitive effort, for it is then related to and used in reference to what one has known before

- **a Chinese saying**

  I hear and I forget,
  I see and I remember,
  I do and I understand.

Some Claims about Learning

- **people learn best** when engrossed in the topic, motivated to seek out new knowledge and skills because they need them in order to solve the problem at hand

- **real learning** — the way we learn is trying something, doing it and getting stuck. In order to learn, we really have to be stuck, and when we're stuck we are ready for the critical piece of information. The same piece of information that made no impact at a lecture makes a dramatic impact when we're ready for it.

- **"basic" skills**
  - question: if most job-relevant knowledge must be learned on demand what is the role of "basic" education?
  - what is the critical background knowledge which makes learning on demand feasible?
  - question: do "basic skills" change their meaning under the influence of technology?

Different Approaches to Learning

concept	definition	strengths	weaknesses	media support
learning by being told				
just-in-time learning				
learning on demand				
integration of working and learning				
self-directed learning				
collaborative learning				
organizational learning				
lifelong learning				

School Learning and Lifelong Learning

	School Learning	Lifelong Learning
emphasis	"basic" skills	education embedded in ongoing work activities
potential drawbacks	decontextualized, not situated	important concepts are not encountered
problems	given	constructed
new topics	defined by curricula	arise incidentally from work situations
structure	pedagogic or "logical" structure	work activity
roles	expert-novice model	reciprocal learning
teachers	expound subject matter	engage in work practice
mode	instructionism (knowledge absorption)	constructionism (knowledge construction)

Informal versus Formal Learning

Informal Learning	Formal Learning
unstructured	structured
a group or joint activity	an individual activity
the goal is motivated from the learner's point of view	the goal is not well motivated from he student's point of view
the activity is captivating fun	“fun” is not a relevant consideration
there are frequent “flow” experiences	there are seldom any “flow” experiences
the activities are self-paced	the activities are fixed, force-paced
the person has a choice of topic, time and place	the topics are fixed, as are time and place
the activities can be done throughout life in many environments	the activities are primarily restricted to ages 6-20+ in a schoolroom
discretionary	forced

Self-Directed Learning

- learners set most of the goals, not the teacher or a computational system

- the new knowledge to be learned should be relevant to the interests of the learner and the task at hand

  self-directed learning is closely linked to reflection-in-action; breakdowns provides opportunities for self-directed learning

- the teacher/coach (human or computational system) should aid learners in two kinds of reflection
  - immediate, to deal with the problem and to organize a solution
  - post-mortem, to see if the problem is recurrent and can be avoided by restructuring work processes.

An Example of Self-Directed Learning
—
A Real Story about Learning

- course for gifted high-school students
- student$_X$: no interest in math
- project: computer-generated poetry
- <article> <adj> <noun> <verb> <art> <noun>
- :noun: = "house mouse spouse ....."
- use of a random number generator which returns values between 0 and 9
- noun list contains 18 objects ----> student$_X$ uses: SUM RANDOM RANDOM

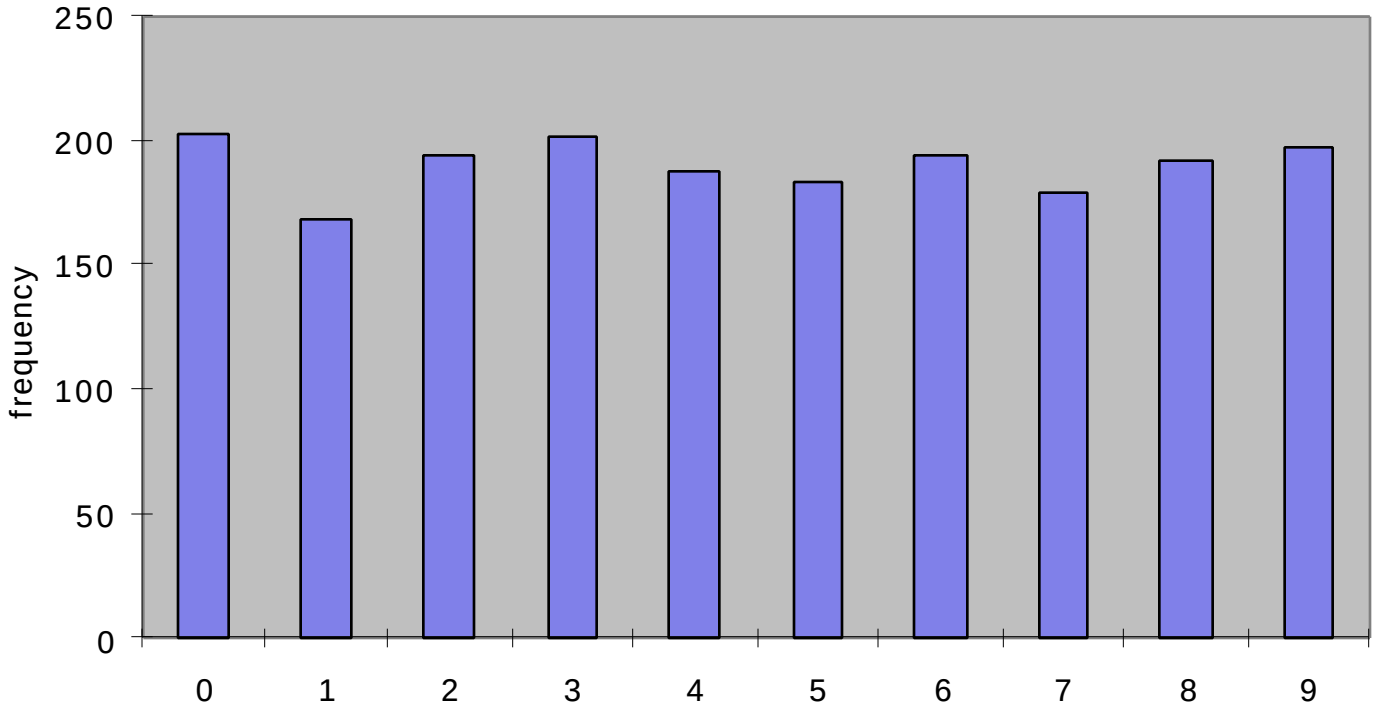
A Computer-Generated Poem

Der Dumme Student

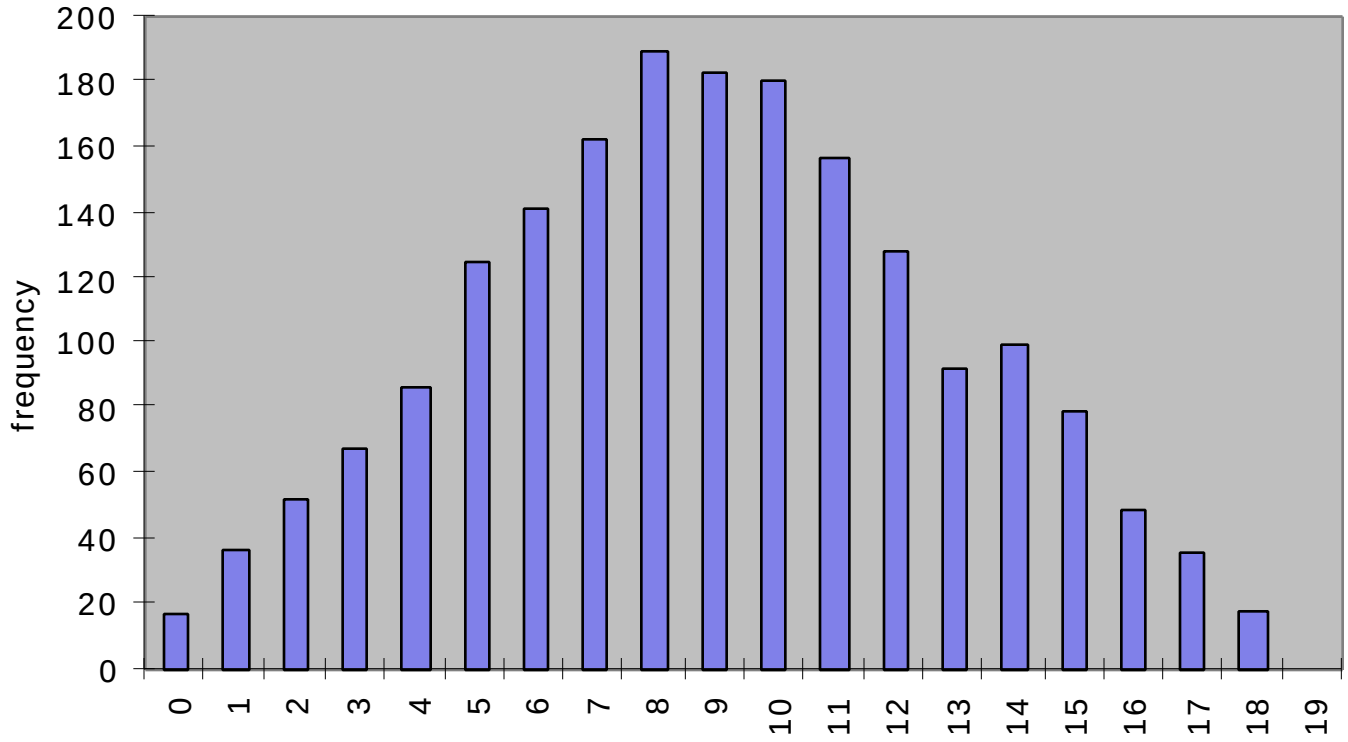
Das dumme Stubenmaedchen verflucht die Schlampe
das lustige Kindermaedchen verbrennt keine Pampe
jedes kluge Maedchen ionisiert den Tresen
ein verschrumpeltes Maedchen verbrennt das Wesen
kein ausgereifter Professor kocht den Wurm
kein aufgespiesster Student besteigt den Turm.

Der kleine Hausmeister elektrisiert einen Ball
jedes schweinslederne Maedchen seziert einen Knall
der gefriergetrocknete Bergsteiger erfreut das Bier
jede erdrosselte Jungfrau untersucht einen Stier
ein kleiner Computer massakriert jede Flasche
jeder erdrosselte Mann bearbeitet die Asche.

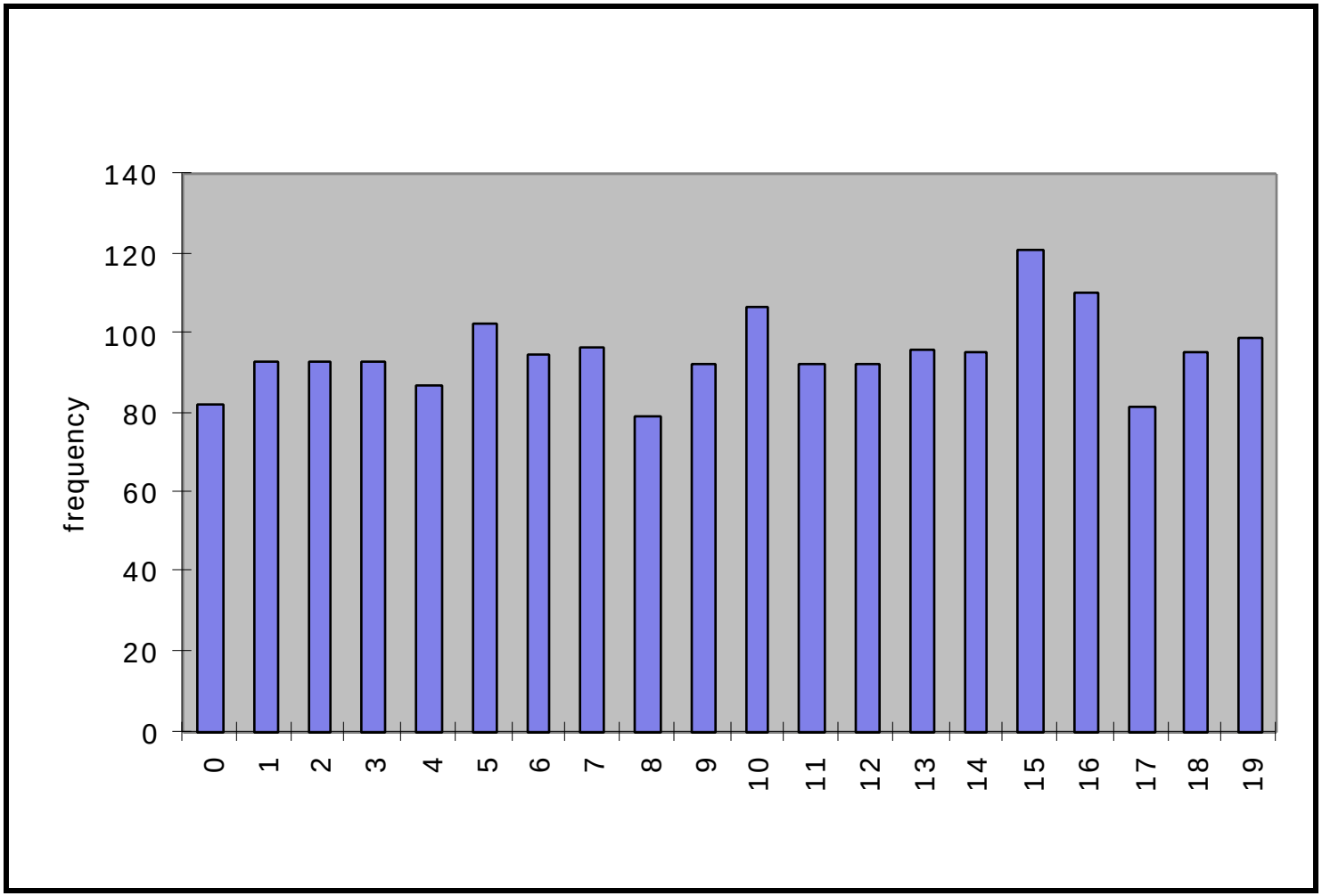
Random 0 to 9



Sum of Random and Random



Word of Random and Random



Lessons to Be Learned from the Story

- student$_X$ learned probability theory

- provide opportunities which change people's lives
  - intrinsic motivation is crucial

  - "falling in love" with something ----> student$_X$ ended up studying computer science

- "normal" learning experience: learners work hard because they *have* to

- our goal: learners work hard because they *want* to

New Media and New Technologies for Lifelong Learning and Self-Directed Learning

- **gift-wrapping:** information technologies have been used to mechanize old ways of learning — rather than fundamentally rethinking what learning can and should mean in the world of today

- "*You cannot use smoke signals to do philosophy. Its form excludes the content."* (Postman "Amusing Ourselves to Death", 1985, p 7)

- support for many interesting forms of learning (self-directed learning, learning on demand) require **computational media**
  - interpretive possibilities
  - analyzing constructs / work products of the learner

- **specific concepts:**
  - supporting for reflection-in-action and noticing breakdowns
  - critiquing and contextualizing information